



Studies of African Economies

From Past to Future

Edited By

Andre Abdala

Oscar Bayemi

Vol. **2**

Emeka Nkoro & Aham Kelvin Uko;
Marcel D. Die, Pierre E. Ndebi & Ibrahima;
Maxime Bikoue; Gerard Bikorimana & Shengmin Sun;
Mouna Marzouk & Youssef Oukhallou;
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Studies of African Economies: From Past to Future, Vol.2

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Preface

Ch.1) The Chapter investigated the transmission channels of monetary policy shocks on real per capita output in Nigeria for the period 1981 to 2017 using Vector Auto-regressive framework. The results of the impulse response functions showed that real per capita output, exchange rate, private sector credit and inflation responded heterogeneously to unexpected monetary shock and hence, provide a useful indicator for determining the effectiveness of monetary policy in the domestic economy. In the case of the forecast error variance decomposition the study revealed that shocks to monetary policy rate explained the largest variation in real per capita output followed by private sector credit and exchange rate. These shocks have a progressive impact on real per capita output except private sector credit, while the average contributions of shocks from equity price channel is below one percent. Therefore, the basic channels of monetary transmission are monetary policy rate, credit and exchange, while equity prices might not be a relevant channel of monetary policy innovation in Nigeria. Furthermore, the forecast error variance decomposition of inflation revealed that the sources of inflation are the monetary policy rate and private sector credit channel. The study therefore recommends that there should be judicious management of

interest rate, credit and exchange rate policy to promote real per capita output in Nigeria.

(Ch.2) This Chapter identifies factors likely to explain business failure in the Cameroonian textile industry. A probit model based on a normality test provides a failure rate of about 54.45%, mainly explained as follows: companies with high operating expenses face an increase in their failure probability; associative or bank loan-based firms experience a high failure risk, unlike those created through equity, public grants and family support; high pricing practice compare to competitors increases the failure risk, contrary to low or average pricing modes; Formal work increases the failure risk while working in the informal significantly decreases this risk. Implementing tax and institutional reforms likely to encourage informal corporations to legally operate seems necessary to fight against unfair pricing behaviours.

(Ch.3) The object of the Chapter is to highlight the incidence of the funds send by African migrants on the growth and development of their home countries. Although aid to development continues to be the privileged mean of funding, these transfers constitute a regular additional source of finance in these countries. In order to highlight the role played by these transfers we based ourselves to a certain number of experiences concerning their affectations and utilization. Stylized facts founded on cases studies show that sending the funds globally has a positive effect on the home country. Particularly, it reduces household poverty by so doing increasing their living standard. Up besides, it stimulates local economic activities therefore economic growth.

(Ch.4) The present study analyzed the possible lessons to learn in Rwanda from the China performance experiences in poverty reduction tragedies. Over the last 35 years, China has impressively made enormous treads in its fight averse to poverty as it has changed in one of the greatest vibrant economies in the global. The China success in poverty reduction is dedicated largely to different economic reforms which lead to economic growth, implementation of poverty lessening strategies, rural development programs and as well as open door policies. Recently, China has been serving as an economic role model for many developing countries including African states due to its substantial progress in fighting against

poverty. In the same way, Rwanda is still struggling with a high rate of poverty even if there is a huge achievement but still there is a long journey to go. The growing cooperation between China and Rwanda are frequently elucidated by the country's call for its natural resources to be based on country development, China is an astonishing example which clearly indicates how a country can revolt from poverty within a decade and be a leading performer on the worldwide scene. From this perspective, there are some policy lessons that African countries including Rwanda can learn from the socio-economic transformation success of China. Even if Rwanda has been gradually facing the developmental restrictions which China did not, and given that the background for Rwandan country differs too much with China, it is worthwhile to draw important lessons from China's success story on how it escaped millions of its population from poverty.

(Ch.5) This Chapter empirically investigates the validity of the Ricardian equivalence hypothesis in Morocco, based on recent data (1980-2016) that encompasses interesting episodes of demand-oriented expansionary government policy during the second half of the 2000s, followed by significant restrictive fiscal measures starting from 2012. We use the SVAR methodology, which enables us to make the difference between the dynamics of savings and the budget deficit by separating them into two types of shocks. Our results suggest that the equivalence is verified in the Moroccan macroeconomic framework. The paper concludes that national savings offset up to 76% of fiscal deficit shocks.

(Ch.6) The purpose of this article is to know how, in the case of Cameroon, the phenomenon of corruption distorts the information that the doctor, responsible of a service, puts at a disposal of the director of the hospital and consequently, increases the costs on the functioning of this hospital. To highlight the effects of this phenomenon on the public hospital system, the authors use the theory of information costs, and in particular, the role of information asymmetry as a generator of the risks of anti-selection and moral hazard in the hospital-doctor relationship. The observation shows that corruption has engendered and reinforced informational asymmetry. It disrupted patient care contracts, and in particular, generated transaction costs. The persistence of this

corruption has made it difficult to conduct an effective hospital restructuring and increased the loss of credibility of the hospital system. Incentive instrument should be used to combat the phenomenon.

Editors

A. Abdala & O. Bayemi

May 10, 2019

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1 Monetary policy transmission mechanism and economic development: Evidence from Nigeria

Emeka Nkoro ^{a†}
Aham Kelvin Uko ^b

Introduction

Monetary policy is a tool of macroeconomic management to stimulate economic stability and to promote economic development among other macroeconomic objectives. Relatively, monetary policy is a flexible and powerful instrument which can be adjusted quickly in response to macroeconomic developments.

In formulating monetary policy, the monetary authorities usually set targets whose values they want to change. The targets could be ultimate goals (final goals, such as output, price level and employment) or intermediate variables (variables that the monetary authorities seek to influence such as money supply or interest rate) or operating variables (variables the monetary authorities can influence directly using the instruments at its

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disposal). At least three issues arise in the selection and use of the goals, intermediate variables, operating targets and instruments by the monetary authorities. The first concerns the existence or otherwise of stable and predictable relationships between the ultimate goal variables, intermediate variables and operating targets. The second has to do with whether the monetary authorities can actually achieve the desired level of the operating targets with the instruments at their disposal. The third deals with the lag structure (short or long) of the relationships with the implication that prediction of the future course of the economy will be increasingly less precise in the presence of long lags (CBN, 2011).

However, the effectiveness of monetary policy in changing aggregate economic activity and economic development largely depends on how monetary policy is conducted and the independency of the central bank to choose the appropriate monetary tools. Also, the success of any economic policy in achieving sustainable growth and development depends on information accuracy of the effectiveness of the policy on the economy. Therefore, it is vital to note that an appropriate monetary policy helps in economic development through the adjustment of policy variables to the needs of development. Monetary policy is expected to bring about economic development via its influence on macroeconomic objectives. Its influence on macroeconomic objectives is through movements in the intermediate variables which would alter the cost of capital and investment in the productive sector. For instance, investment is interest elastic, a fall in interest rate leads to more investment which leads to increase in aggregate demand and in turn brings about positive real income, output and employment, consequently impacting positively on the welfare of the citizenry. Therefore, the attainment of the macroeconomic objectives has to do with the transmission mechanism that can effectively affect key macroeconomic variables, thereby stabilizing the economy as well as impacting on economic development.

At this point, it is important to conceptualize monetary policy transmission mechanism. According to Ireland (2005), monetary transmission mechanism describes how policy-induced changes in

the nominal money stock or the short-term nominal interest rate impact on real variables such as aggregate output and employment. Also, it describes channel of how the changes associated with the alteration of money supply affect prices of goods and services, output of sectors and employment (Ogbonna & Umar, 20014). This implies that transmission mechanism of monetary policy entails the process by which changes in monetary decision of the monetary authorities affect economic growth and inflation rate. Hence, in order to make proper assessment of an economy, the policy makers must be knowledgeable on the mechanism by which the monetary policy impacts on the real economic activity and inflation (Bovin *et al.*, 2010). Therefore, monetary policy mechanism is the channel by which monetary policy is transmitted to the real economy. Better still, the transmission mechanism depicts how policy-induced changes in monetary policy actions impact on macroeconomic policy goals. However, for there to be an efficient and effective transmission mechanism there must be an economically safe and sound environment characterized by a competitive banking system (Sanusi, 2009).

Understanding the response of the economy to various monetary policy transmission mechanisms is important for a number of reasons. This is imperative given that different channels have different intensities that generate different responses in output which in turn affect welfare. With this, the monetary authorities will be properly informed when analyzing the transmission mechanisms of monetary policy as it relates to economic growth and development. In addition, knowledge of the magnitude, timing, and persistence of monetary policy shocks (actions) on economic activities provides the monetary authorities with vital information required to fine-tune policy initiatives towards stabilizing the macroeconomy as well as achieving sustainable development. Empirical evidence has shown that the effect of monetary policy on output may delay for up to two years (Bernanke & Blinder, 1992 and, Christiano, Eichenbaum & Evans, 1994).

However, monetary policy transmission mechanism has continued to generate active research interest over a number of

years (Bernanke & Gertler, 1995 and Christiano *et al.*, 1997). A lot of studies (Kamaan, 2014, and CBN, 2014) have focused on the transmission mechanism effects of monetary policy on the economy and sectors in developed and emerging economies. However, many of these empirical studies on monetary policy transmission were done in developed economies. Relatively, most of the studies carried out in developed countries focused on prices (interest rate, exchange rate, and other asset prices) rather than quantities, while the studies done in developing countries focused on quantities (money, credit, base money, bonds, foreign assets, etc.) rather than prices. This disparity can be attributed to factors such as; weak institutional frameworks, oligopolistic banking structure, shallow financial markets, and extensive central bank intervention in foreign exchange markets in developing countries (Kamaan, 2014). Furthermore, there has been disagreement among scholars about how monetary policy transmission mechanisms affect the economy. Different scholars weigh in different channels through which monetary policy works. Taylor (1995) and Kamaan, (2014) take strong position in favour of interest rate and exchange rate channels as against McCarthy (2000) which concluded that the exchange rate channel does not play a significant role in economic growth. On their part, Obstfeld & Rogoff (1995) stressed on the relative importance of the exchange rate channel. Also, CBN (2014) reveals that interbank call rate and money supply are the most monetary policy channels while the results on the asset price and credit channel are mixed in various countries (Kamaan, 2014). Furthermore, Ezeaku, *et al.*, (2018) observed that private sector credit, interest rate, and exchange rate are the effective channels of monetary policy transmission. In view of the above, the following question is raised: What are the key channels of monetary policy transmission to promoting economic development in Nigeria? This calls for an empirical investigation.

The rest of the work is structured as follows; section two discusses monetary policy in Nigeria, section three provides reviews of the related and relevant literature, section four explains the method of analysis, section five focuses on the empirical results and discussions and, section six presents the conclusion and recommendations.

Monetary policy in Nigeria

Over the years, the objectives of monetary policy have basically remained achieving internal and external balances, and the promotion of non- inflationary growth in output. Specifically, the aim of monetary policy is to maintain stable inflation rate, stimulate growth and, reduce pressure on the balance of payments in order to maintain stable exchange and positive interest rates. The Central Bank of Nigeria (CBN) is saddled with this responsibility. In pursuant of it targets, monetary authorities in Nigeria have made some fundamental changes in the strategies and instruments employed in the conduct of monetary policy as the financial environment evolves. These changes are in two distinct phases. The phases are direct era (pre-SAP) and indirect era (post-SAP). The era of direct monetary policy involved the use of monetary controls, whereas the indirect era depends on price mechanism.

Era of direct control (Pre-SAP period)

After independence, due to the relatively underdeveloped nature of money and capital markets in the country and, the quest for national development, monetary policy actions focused on the establishment of a strong financial base and the promotion of domestic financial infrastructure, such as the money and capital market institutions. Hence, the monetary policy framework placed emphasis on direct monetary controls aimed at encouraging the deposit money banks (DMBs) to channel substantial amount of their credit to the productive sectors of the economy as well as sterilizing excess liquidity. The monetary framework relied heavily on sectoral credit allocation; credit ceilings and cash reserve requirements; administrative fixing of interest and exchange rates; as well as imposition of special deposits. During this period the set monetary targets were hardly realized. Instead, the strategy created a lot of distortions and bottlenecks in resource allocation and utilization, resulting in wide spread inefficiencies.

The direct method of monetary policy lasted from 1959 - 1985. Between 1960 and 1962, the CBN operated a passive monetary policy regime in which the focus was on developing and maintaining a sound domestic currency. In 1962, the focus changed

Ch.1. Monetary policy transmission mechanism and economic development to development issues with the need to ensure adequate supply of credit to the economy with minimal inflationary pressures. In the latter part of 1964 and 1965, the primary objective of monetary policy changed to the achievement of balance of payments equilibrium and the policy tool was credit rationing in the form of guidelines that placed ceilings on the rate of expansion of commercial bank advances.

Period of indirect or market approach (Post-SAP era)

In line with economic deregulation embodied by Structural Adjustment Programme (SAP) in the mid 1980s, there was a paradigm shift from the repressive direct monetary control method to an indirect approach anchored on the use of market instruments in monetary management. This was borne out of the desire to eliminate the distortions and inefficiencies in the financial system and the need to engender competition among banks and other operators in the financial system.

In this era, monetary policy authorities relied on intermediate targets to influence the ultimate objectives of monetary policy. A number of monetary targets and instruments were adopted during the short-term (one-year) monetary policy framework (1986-2001). Open Market Operation (OMO), conducted wholly using the Nigerian Treasury Bills (NTBs) was introduced in 1993, continued to be the primary instrument of monetary policy. This was complemented by the cash reserve requirement (CRR) and the liquidity ratio (LR). Other policy instruments employed included the discount window operations, mandatory sales of special NTBs to banks and a requirement of 200 per cent treasury instrument to cover for banks' foreign exchange demand at the Autonomous Foreign Exchange Market (AFEM). Interest rate policy was deregulated through the proactive adjustment of minimum rediscount rate (MRR) to signal policy direction consistent with liquidity conditions. On the external front, the official and interbank exchange rates were unified in 1999.

To curb the challenge of excess liquidity in the economy, the CBN in the period between 1998 and 2002 adopted some policy measures as a response. These measures include: intervention at the weekly OMO and foreign exchange market to moderate the

effects of expansionary fiscal policies, Adjustment of CRR to embrace total deposit liabilities (demand, savings and time deposits) instead of the earlier method of computing demand deposits alone; deregulation of interest rates, upward review of the minimum rediscount rate (MRR) and cash reserve requirements as well as the commencement of the medium term monetary policy framework. These measures are aimed at containing credit expansion. In 2002, the CBN commenced a two-year medium-term monetary policy framework, aimed at freeing monetary policy from the problem of time inconsistency and minimizing over-reaction due to temporary shocks. The new monetary policy framework, still in operation, is based on the evidence that monetary policy actions affect the ultimate objectives with a substantial time lag.

Between 2003 and 2007, monetary policy measures geared towards promoting stable macroeconomic environment through the achievement of single digit inflation, exchange rate stability, financial sector soundness and a non inflationary GDP growth. To achieve this, in 2006 the CBN introduced the Monetary Policy Rate (MPR) which replaced the Minimum Rediscount Rate (MRR). The 2004/2005 monetary policy and credit guidelines were fine-tuned in 2005 in the light of changing environment. New policy measures introduced included maintenance of a tight exchange rate band of plus/minus 3 per cent, two-week maintenance period of cash reserve requirement and the injection/withdrawal of public sector deposits from the DMBs. The new framework geared towards achieving stable aggregate prices, including the exchange rate of the domestic currency through stability in short- term interest rates. The interbank rate was expected to converge around the MPR which had become the Operating Target. The MPR serves as an indicative rate for transactions in the money market. There was an improvement in monetary policy outcomes with the new monetary framework. Other policy measures undertaken included the use of deposit and lending facilities, amongst others. The liquidity management efforts of the CBN yielded the expected results as single-digit inflation (CBN, 2008 and 2014).

Between the period 2008-2012, the conduct of monetary policy was hampered by the global financial crisis which originated from

United States and later spread to other regions, Nigeria was not spared. The crisis created liquidity problem in the banking system due to large capital outflows which exerted pressures on the foreign exchange market as well as induced large volume of non-performing loans in the banking sector and a crash in stock market prices. This forced the cost of living to rise above the income and expectation of ordinary Nigerians. In reaction, the CBN adopted ease monetary policy measure in order to address the problem of liquidity shortages. Some of the measures adopted include: suspension of OMO, reduction of cash reserve requirement (CRR), reduction of liquidity ratio (LR), introduction of Expanded Discount Window (EDW) to increase DMB's access to facilities from the CBN, and by July 2009 was replaced with CBN Guarantee of interbank transactions, progressive reduction of monetary policy rate (MPR), progressive reduction of Net Open Position (NOP) limit of deposit money banks and injection of N620 billion as tier 2 capital into troubled banks. Following the restoration of stability and easing the problem of excess liquidity in the banking system, the CBN reverted from ease to tight monetary policy stance from September 2010 to December 2011

To sustain the already moderated rate of inflation and, limiting pressure on the exchange rate, boosting the external reserves position, sustaining stability in the money market and reducing the spread between lending and deposit rates, monetary policy authorities adopted a mixed-grill of a number of instruments in 2013. These instruments include: the Monetary Policy Rate (MPR) which was the principal instrument used to control the direction of interest rates and anchor inflation expectations in the economy. The other intervention instruments included Open Market Operations (OMO) (was the other major tool for liquidity management), Discount Window Operations, Cash Reserve Ratio (CRR) and foreign exchange Net Open Position (NOP). The Monetary Policy Committee (MPC) successively maintained MPR at 12.0 per cent and Cash Reserve Ratio (CRR) was increased for public sector deposits with the DMBs, in order to further tighten money supply. Beside the change in the CRR on public sector deposits, other existing policies were retained, and complemented with administrative measures. The Net Open Position (NOP) limit,

Liquidity Ratio (LR) and the mid-point of the exchange rate were retained. The decision of the MPC to retain most of the existing measures was to assure the market of the continuity of the tight monetary policy regime. However, in 2014 Monetary Policy Rate (MPR), and other intervention instruments such as the exchange rate mid-point, Open Market Operations (OMO), Discount Window Operations, Cash Reserve Ratio (CRR) and Foreign Exchange Net Open Position (NOP) limit were raised except Liquidity Ratio that was retained, in order to address liquidity surplus in the banking system. The interbank and open buy back (OBB) rates remained locked-in within the retained policy rate corridor of MPR in second half of 2014, except in December, 2014. However, the daily Nigerian Interbank Offered rates (NIBOR) experienced occasional variations but were generally stable. CBN adopted tight policy stance with a view to ensuring that electioneering spending and, as a result of injections into the system arising from maturity of FGN Bonds and NTBs as well as AMCON bonds in 2013 in order to smoothen the liquidity cycle, and reduce pressure on the price and exchange rate.

The overall performance of the economy showed that between 1993 and 1997 real GDP growth averaged 2.8 percent. It gradually increased to an average of 4.0 per cent in the period 1998-2002. Also, the growth in real GDP peaked during the period 2002-2006 to 6.34 per cent. Furthermore, in 2007 real output growth grew to an average of 7 percent while between 2008-2013 output growth increased on an average of 7 percent (NBS, 2013 and CBN, 2014). Real output growth in the third quarter of 2014 was 6.23 per cent down from 6.54 per cent in the second quarter. Between 2014 and 2017 real output growth averaged 2.2 percent. This was attributed to the increased ability of banks to lend following the banking sector consolidation exercise of 2005/2006 which improved the capital base of banks. In addition, between 1990-2017 Gross National Income (GNI) per capita expressed in 2011 PPP\$ increased progressively.

Generally, both the direct and indirect policy regimes have the same objectives of channeling funds from surplus to deficit sectors, with the aim of extending the frontiers of growth and development (CBN, 2014). To achieve this, the CBN employs various

Ch.1. Monetary policy transmission mechanism and economic development instruments of monetary policy to influence price, interest and exchange rate consistent with the required growth and development. This is pursued through a number of channels. The anchor instrument is the accommodation instrument (MPR), supplemented by open market operations. Most instruments used by CBN focus on market-oriented policy measures which seek to guide or encourage financial institutions to take certain actions on a voluntary basis rather than compelling financial institutions. The central bank uses the MPR rate as an indicative rate for transactions in the money market. Other major instruments used by the central bank include; the open market operations, reserve requirement ratios and the discount window operations. However, despite the different monetary policy measures taken by CBN, the exact channel of monetary policy transmission mechanism has continued to generate active debate among researchers, hence, the need to ascertain the key monetary policy transmission channels in promoting economic development in Nigeria.

Theoretical review

Theoretically, there are two extreme cases regarding the influence of monetary policy on economic growth, as well as economic development. Monetarists believe that there is a direct link between money and economic growth and, thereby advocate for the use of monetary policy in influencing economic growth. Monetarists' argument on the effectiveness of monetary policy in impacting on economic growth is based on the classical economists' equation of exchange as proposed by Irvin Fisher which states that velocity and output in the equation of exchange are regarded as fixed. This is based on the notion that the economy is always at or near the full employment (output). Monetarists consent to the classical economists' view of monetary policy (the quantity theory of money) that velocity is constant which indicates a one-to-one relationship between changes in the stock of money and changes in the value of national income. This implies that changes in money supply can only bring about changes in output. Therefore the direct link between the monetary sector and economic growth comes from the argument of a constant velocity. This explains the basis for the monetarists' argument that changes

in monetary policy influence economic growth, as well as economic development. However, monetarists consent to the Keynesians view that the economy may not always be operating at the full employment level of output as against classical economists' view of output being at full employment level. Hence, they believe that in the short-run, expansionary monetary policies increase the level of real output by increasing aggregate demand while in the long-run the expansionary monetary policy only lead to inflation and do not affect the level of real output since the economy operates at the full employment level. They also have the view that, to promote steady output growth, money supply should grow at a constant rate, instead of being regulated and altered by the monetary authorities. Furthermore, they argued that money can be held in different forms such as liquid, bonds, equities, physical goods and human capital other than anticipated transaction and, each form of this wealth has a unique characteristic and a different yield. This implies that there is a link between the supply of money, price level and output.

On the other hand, the Keynesians objected the monetarists' view that the relationship between money, price and output is direct, but insist that the relationship between money and real output (economic growth) is very weak, and therefore suggest that there is an indirect link between both. To this regard, the Keynesians reject the view that the economy is always at or near the full employment level which means that real output is fixed, and also reject the view that velocity of circulation of money is constant. They believe that the relationship is indirect through the rate of interest. As a result, changes in the stock of money will not lead to changes in output directly but through interest rate. Keynesians are of the view that expansionary monetary policy increases the supply of loanable funds available through banking system, causing interest rates to fall. Consequently, lower interest rate will lead to an increase in aggregate expenditures on investment and interest-sensitive consumption goods, which in turn will cause real output to rise. Therefore, monetary policy affects real output indirectly.

These conflicting views between the Keynesians and the Monetarists economists concerning the impact of monetary policy

Ch.1. Monetary policy transmission mechanism and economic development on economic growth as well as economic development are built up from the explanation of the transmission mechanism. However, monetary policy is transmitted through various channels as reviewed by theories which include: interest rate channel, exchange rate channel, credit channel and asset price channel. The effectiveness of each of these channels has led to debate amongst scholars. The channels of monetary policy transmission mechanism are explained below:

Interest rate channel

The interest rate channel of monetary policy transmission that is presented below is a standard Keynesian channel for analyzing monetary policy effects on the economy which operates within the IS-LM framework. According to the Keynesians, monetary policy affects the real economy through changes in interest rates. This essentially works through the liability side of the banking sector's balance sheet. This is because the Keynesians were of the view that there are only two financial assets, money and bonds which can be substituted for one another, where the latter represents the whole capital market. In the view of the Keynesians, the transmission mechanism works thus; a monetary tightening (Negative monetary shocks) will lead to excess demand for money balances, inducing action to substitute money for bonds, which in turn lead to increase in interest rates. Consequently, this translates into increases in real interest rates and raises the user cost of capital, because of the assumption of imperfect price adjustments. The increase in the user cost of capital leads to fall in investment and consumption demand, which in turn reduce output. The implication of the fall in consumption demand is fall in the welfare of the citizenry which is an indicator of economic development. According to Taylor (1995), financial market prices are key components of how monetary policy affects real economic activities, in which case a contractionary monetary policy raises short-term interest rates. The Keynesians view of how monetary tightening is transmitted to the real economy through interest rate channel can be presented schematically as observed by Mishkin (1995):

$$\mathbf{MP} \downarrow \rightarrow \mathbf{IR} \uparrow \rightarrow \mathbf{INV} \downarrow \rightarrow \mathbf{Y} \downarrow$$

Where ($MP \downarrow$) indicates contractionary monetary policy resulting from government sales of securities in the open market leading to a rise in real interest rates ($IR \uparrow$), which in turn raises the cost of capital. The high user cost of capital discourages both firms and consumers spending, causing a decline in investment ($INV \downarrow$), thereby leading to a decline in aggregate demand and eventually a fall in output. In this channel, therefore, interest rates provide more information than money supply changes.

Exchange rate channel

Exchange rate links monetary policy to spending pattern of the people, firms and ultimately on goods and services which in turn affect output. According to Taylor (1995) and Obstfeld & Rogoff (1995), the exchange rate channel works through the aggregate demand as well as the aggregate supply effects which is more effective under the flexible exchange rate regime. This channel of monetary policy involves interest rate effects. This relates interest rate differentials to expected exchange rate movements (interest rate parity condition). A contractionary monetary policy brings about a rise in domestic real interest rate relative to foreign interest rates making domestic deposits more lucrative in comparison to foreign deposits, thus leading to a rise in the value of the domestic currency relative to other currencies. This will now lead to an appreciation of the exchange rate and consequently a fall in the net export and output. A rise in the domestic currency's purchasing power will bring about proportional currency appreciation in the foreign exchange market under purchasing power parity (Taylor, 1995; Mishkin, 1995 and Obstfeld & Rogoff, 1995). Also, this change in exchange rate affect import prices. Changes in the exchange rate affect import prices directly, and it influences the output. A rise in exchange rate leads to an increase in the net import of goods and services.

The transmission of monetary policy to the real economy through exchange rate channel can be presented schematically as observed by Mishkin (1995):

$$MP \downarrow \rightarrow IR \uparrow \rightarrow EXR \uparrow \rightarrow NX \downarrow \rightarrow Y \downarrow$$

Where $(MP \downarrow)$ indicates contractionary monetary policy resulting from government sales of securities in the open market leading to a rise in real interest rates $(IR \uparrow)$, which in turn leading to a rise in the value of the domestic currency relative to other currencies and deposits. This gives rise to increase in exchange rate, thereby causing a fall in both net exports $(NX \downarrow)$ and output $(Y \downarrow)$. This means that contractionary monetary policy is expected to cause appreciation of exchange rate which eventually impacts on export performance and economic growth.

The credit channel

Credit channel is made up of a set of factors that assist and support the effects of the conventional interest rate. This implies that, the credit channel is not a truly independent or parallel channel but an enhancement mechanism. The channel assumes that financial markets are imperfect and segmented. Therefore, emphasizing on asymmetric information and costly enforcement of contract as the main causes of credit market imperfections. This channel stresses that the heterogeneity among borrowers might make it more difficult or expensive for some borrowers to obtain external funds than others. For instance, households and small firms cannot readily obtain funds from capital markets or external sources and thus have to rely on intermediated loans and internal finance. The credit channel admits the role of financial intermediaries (banks), unlike the other channels. This is because banks are considered to be particularly well-suited to dealing with certain types of borrowers, especially small firms and individual households who, because of the problems of asymmetric information, cannot easily access non-bank forms of credit (Boamah, 2009). The credit channel is usually described as working through two main routes: narrow credit channel and the broad credit channel. These are distinct channels but complementary ways whereby imperfections in financial markets might affect real economic activities. These channels focus on how changes in the financial positions of lenders and borrowers affect aggregate demand which in turn affects output (Arestis & Sawyer, 2002).

The *Narrow Credit Channel* also known as *bank lending channel* (Hall, 2001) focuses on the role of banks as lenders or as financial intermediaries (Bernanke & Blinder, 1988). Banks rely heavily on demand deposits subjected to reserve requirements as an important source of funding economic activity. According to Arestis & Sawyer (2002), changes in monetary policy will result change in total reserves, bank reserves would be affected, thereby affecting their supply of loans to the private sector, this in turn affects aggregate demand and output. According to Hall (2001), this channel may be potentially significant if a contractionary monetary policy leads to a reduction in the supply of bank loans (credit) and if these loans are imperfect substitutes for other forms of finance. Thus a monetary policy that operates through a bank lending channel can be represented as:

$$MP \downarrow \rightarrow BD \downarrow \rightarrow BCL \downarrow \rightarrow INV \downarrow \rightarrow Y \downarrow$$

Where $MP \downarrow$ denotes contractionary monetary policy leading to decrease in bank reserves and deposits $BD \downarrow$ this now lead to decrease in quantity of bank loans $BCL \downarrow$. This in turn will lead to fall in investment and output. For instance, if banks cannot substitute deposits with other sources of funds, then a contractionary monetary policy that decreases bank reserves and bank deposits is likely to reduce the quantity of loans that banks can supply and, so leads to lower investment spending and output (Ishioro, 2013). The implication of this is that any kind of monetary policy change has the potential to affect real economic activities. For instance, a contractionary monetary policy can raise banks' reserves requirements with the aim of reducing both the total volume of commercial bank assets and the proportion of commercial banks earning assets to total assets. Also, a contractionary monetary policy that leads to sales of treasury bills and government development stock reduces commercial banks' reserves-as depositors will substitute commercial banks deposits with more attractive financial assets (Ishioro, 2013).

The *Broad Credit Channel* also known as *balance sheet channel* (Hall, 2001) focuses on how the financial health of borrowers can affect the supply of finance and ultimately aggregate demand as

well as output (Bernanke *et al.*, 1999). The broad credit channel of monetary policy arises because a contractionary monetary policy will not only affect the interest rate, but will also lower the net worth of borrowers. A contractionary monetary policy directly weakens borrowers' balance sheets (net worth) in at least two ways. First, rising interest rates directly increase interest expenses, reducing net cash flows and weakening the borrower's financial position. Second, rising interest rates are also typically associated with declining asset prices, which among other things shrink the value of the borrower's collateral. The indirect effect of contractionary monetary policy on net cash flows and collateral values is the deterioration in consumer expenditure (Ishioro, 2013). The firm's revenues will decline while its various fixed or quasi-fixed costs do not adjust in the short run. Thus a monetary policy that operates through balance sheet channel can be represented as:

$$MP\downarrow \rightarrow P_e\downarrow \rightarrow \text{Adverse selection}\uparrow \rightarrow \text{Moral hazard}\uparrow \rightarrow \text{lending}\downarrow \\ \rightarrow \text{INV}\downarrow \rightarrow Y\downarrow$$

Where $MP\downarrow$ indicates contractionary monetary policy, which leads to decrease in corporate asset prices (lower net worth) $P_e\downarrow$. Lower net worth implies that business firms (borrowers), in effect, have less valued collateral for their loans and are therefore of higher risk, due to higher policy-induced interest rates. Consequently, adverse selection problem rises as banks cannot distinguish borrowers' risk types. Lower net worth of firms may also increase the moral hazard problem because it means that owners' equity stakes in businesses fall and thus give them more incentive to engage in risky investment projects. In response to the adverse selection and moral hazard problems, banks may reduce the amount of lending (loans) and eventually leads to a decrease in investment spending finance $INV\downarrow$ as well as output $Y\downarrow$.

Assets price effect or equity price channel

However, the Keynesians transmission mechanism channel is not without criticism. The primary source of criticism is from the monetarists. Their major criticism of the Keynesians transmission mechanism channel is its focus on one relative price, the interest

rate. Thus, monetarists argued that rather than focus on one interest rate, it is better to look at how monetary policy affects the universe of relative asset prices and wealth. The monetarists channel involves two sub channels through which monetary policy is transmitted. These two sub channels include: the Tobin q theory of investment and wealth effects on consumption.

The *Tobin's q Theory of Investment* provides a mechanism through which monetary policy affects the economy through changes in equity value. According to Tobin (1969), q is defined as the market value of firms divided by the replacement cost of capital. A high q , means the value of the firm is high compared to the replacement cost of capital, implying that investment in new plant and capital equipment is cheap relative to the market value of business firms. Firms will issue equity and get a high price for it relative to the cost of the plant and equipment they are buying. A contractionary monetary policy that raises the interest rates makes bonds more attractive relative to equities, thereby causing the price of equities to fall. Monetarists argue that when money supply falls, economic agents respond by reducing spending. This implies that lower equity prices ($P_e \downarrow$) will lead to a lower q ($q \downarrow$) which in turn leads to a lower investment spending ($INV \downarrow$), and output ($Y \downarrow$). If demand for equities falls, their price relative to the replacement cost of capital reduces and this lowers the q , investment spending, and output. This is represented schematically as:

$$MP \downarrow \rightarrow P_e \downarrow \rightarrow q \downarrow \rightarrow INV \downarrow \rightarrow Y \downarrow$$

$MP \downarrow$ denotes contractionary monetary policy leading to decrease in prices of equity $P_e \downarrow$ and this leads to decrease value of the firm relative to the replacement cost of capital $q \downarrow$. Consequently, there will be a fall in investment $INV \downarrow$ and output $Y \downarrow$. Conclusively, this channel is similar to the standard Keynesian interest rate channel because the higher interest rates that result from a contractionary monetary policy makes bonds more attractive relative to equities, and lowers equity prices and hence investment and output (Mishkin, 1995).

The *Wealth Effect on Consumption* is another monetary transmission channel through other assets prices. This is regarded

as the wealth channel of monetary transmission. The wealth channel was advocated by Modigliani (1971). In line with the life-cycle hypothesis of consumption, in which households' wealth is a principal determinant of consumption spending. A major component of the households' life-time wealth is financial wealth which is common stocks. The wealth channel of monetary policy transmission emanating from this hypothesis is that a contractionary monetary policy lowers stock prices, reduces the value of households' wealth and consumption spending and then output. Ahmad (2008) argued that monetary policy transmission emanates from the relationship between interest rates and asset prices (especially common stocks). This implies that a fall in asset prices lead to a decrease in the value of financial wealth households, thereby decreasing the lifetime resources of consumers, hence consumption and output are expected to fall. This can be presented schematically as:

$$MP \downarrow \rightarrow P_e \downarrow \rightarrow \text{wealth} \downarrow \rightarrow \text{consumption} \downarrow \rightarrow Y \downarrow$$

$MP \downarrow$ indicates contractionary monetary policy leading to decrease in equity prices $P_e \downarrow$, this will now leads to decrease in financial wealth which in turn leads to a fall in consumption and output $Y \downarrow$. Contrarily, expansionary monetary policy will lead to increase in equity prices, this will increase the households' lifetime resources and wealth of households which in turn leads to an increase in consumption and output.

Summarily, it is observed that interest rate is cardinal in any of the channels of monetary policy as it relates to the real sector performance. Therefore, the channel that formed the basis for the subsequent analysis as posited by Nwosa & Saibu (2012) is represented schematically with modification as:

$$MS \uparrow \rightarrow IR \downarrow \rightarrow PSC \uparrow \rightarrow P_e \uparrow \rightarrow EXR \downarrow \rightarrow INV \uparrow \rightarrow Y \uparrow \rightarrow EW \uparrow$$

$MS \uparrow$ indicates expansionary monetary policy resulting from government purchases of securities in the open market, leading to a fall in real interest rate (IR), which in turn: (a) increases the amount of credit by banks to the private sector (PSC); (b) increases in the price of security prices (P_e) given the inverse relationship

between security prices and interest rate and (c) decreases the exchange rate (EXR); these effects stimulate investment (INV), output (Y) and consequently improve economic welfare (EW) given the direct relationship between price of security prices (P_e), wealth and consumption.

Empirical review

A number of empirical studies have been conducted on the effects of monetary policy shocks on the economies of both developed and developing. Some of these studies include; Romer & Romer (1989), Bernanke & Blinder (1992), Bernanke & Gertler (1995), Dale & Haldane (1995), Christiano *et al.*, (1997), Yue & Zhou (2007), Llaudes (2007), Nwosa & Saibu (2012), Ishioro (2013) and CBN (2014). These studies have been able to show that different monetary policy shocks do have different impact on the economy.

Romer & Romer (1989), using post-war US monthly data, investigate whether there are any identifiable relationships between monetary contractions not caused by output disturbances and real output in US using Vector Autoregressive (VAR) model. In their analysis, they estimated two forecasting models for two measures of real activity: industrial production index (IPI) and unemployment. The models variables include monthly dummies and dummies for periods of contractionary monetary shocks. Their findings revealed that following monetary contractions, real activity, after a six-month lag during which it rises, then falls: the maximum impact occurs 33 months after the shock. At this time, when measured by IPI, industrial production index is approximately 12 per cent below the pre-shock level; and when measured by unemployment, unemployment is 2 per cent above the base level. For both measures of activity, the effect of the shock does not die over the 36-month forecast horizon. Bernanke & Blinder (1992) examine the effect of monetary policy on the economy and the channel of transmission with monthly US data over 1959-78 using Vector Autoregressive (VAR) model. Their measure of monetary policy is the Federal Funds Rate (FFR). Other variables that were included in the model are; unemployment rate, log of the CPI, and log levels of three bank balance-sheet variables (deposits, securities, and loans). In their analysis of the impulse

response functions, it was observed that a positive innovation in the FFR reduces the volume of deposits held by money deposit institutions immediately and maximally after twelve months. Although there is some recovery, the plunge in deposits appears to be permanent. Given bank assets and loans, it was also observed that bank assets fall along with deposits but the pattern of fall varies. The findings revealed that first six months after a policy shock, the fall in assets is concentrated almost entirely in securities, while loans hardly move. Shortly after, however, securities holdings begin to increase, while loans start to fall. After two years, securities holdings return almost to their original value and the entire decline in deposits is reflected in loans. The study further revealed that that in the first eight months after policy shock there is no effect on unemployment. However, from the ninth month unemployment begins to rise, increasing gradually to a peak in about two years, before declining back to zero. The finding revealed good connection of the estimated timing of the unemployment and loan response. From the above, it is observed that both the conventional money demand and the credit mechanisms operate; and after two years, the entire long run impact of the decline in deposits is reflected in loans. Therefore, Bernanke & Blinder (1992) support the operation of a credit channel. Similarly, Christiano *et al.*, (1997) investigated the effects of a contractionary monetary policy shock (measured by FFR) on measures of real wages and profits with quarterly data of the United State using Vector Autoregressive (VAR) model. Other variables included in the model are real GDP, the GDP deflator, commodity price, non borrowed reserves, total reserves and net funds raised through financial markets. From the non-recursive and recursive identification assumptions their analysis found that an initial persistent rise in the Federal Funds Rate (FFR), and persistent drops in non-borrowed reserves and the growth rates of broad money, while after a quarter real GDP declines. The shock also generates a persistent decline in the index of commodity prices. Furthermore, they observed that the GDP deflator was unresponsive to the shock for about eighteen months before it declines, and monetary policy not to have an effect on real balances in the long run.

Examining the monetary transmission mechanism in Japan with VAR models, Morsink & Bayoumi (2001) employ quarterly data. The measure of monetary policy stance is the uncollateralised overnight call rate - the operating target for monetary policy. Morsink & Bayoumi (2001) first estimated a four-variable VAR with the ordering as: economic activity (real private demand), prices, interest rates, and broad money. Four main results emanate. First, interest rate shocks appear to depress economic activity significantly, after a six-quarter period of puzzle. Second, broad money shocks have significant effects on output, even with interest rates in the model. This they interpret as being consistent with the idea that non-policy monetary shocks are important for determining economic activity. Third, much of the effect of interest rate shocks on output is transmitted through broad money. Finally, there is a price puzzle in the initial quarters. Next, Morsink & Bayoumi (2001) extend the VAR in different directions to examine alternative aspects of the monetary transmission mechanism. Extending the base VAR by base money, with the variable ordered after the interest rate but before broad money; the authors found that base money has no significant impact on output. In the same vein, Lawson & Rees (2008) examined the effect of unanticipated changes in monetary policy on expenditure and production components of GDP in the Australian economy using Structural Vector Autoregressive (SVAR) model for the period 1983-2007. The findings of the study revealed a heterogeneous response of the components of GDP to monetary policy impulses. Specifically, they found that dwelling investment, as well as machinery and equipment investment were the most interest sensitive expenditure components of GDP, while construction and retail trade sectors were the most interest sensitive production components of GDP.

Alam & Waheed (2006) investigated the monetary transmission mechanism in Pakistan at the sectoral level using VAR framework for the period 1973-2003. Particularly, their findings revealed that manufacturing, construction, finance, insurance, real estate and business services sectors respond more negatively to changes in interest rate when compared to aggregate output. Contrarily, agriculture, forestry and fishing, mining and quarrying, electricity,

gas and water were relatively insensitive to interest rate changes. These results confirmed the existence of sector-specific variation to the real effects of monetary policy changes. The short term interest rate was used as a measure of monetary policy stance, while the unrestricted VAR was employed in their analysis with three variables for the aggregate economy as well as for each sector: the level of output, the level of prices (represented by the consumer price index), and a monetary policy indicator. Contrarily, Yue & Zhou (2007) examined monetary policy transmission through the interest rate channel in China using the granger causality test and result showed that there was no causality between investment expenditure and the market interest nor between household consumption and the market interest rate, which suggested that the transmission of monetary policy in China was uncertain. In the same vein, Catao *et al.*, (2008) examined monetary transmission in typical emerging-market economies such as Brazil, using a structural model (SVAR) that incorporates key features of emerging-market economies which including a bank credit channel and the role of external debt accumulation on country risk premia and exchange rate dynamics for the period 1999-2007. The result showed that interest rate changes have swifter effects on output and inflation compared to advanced economies and that exchange rate dynamics plays a key role in this connection. Importantly, the results showed that the response of inflation to monetary policy shocks has grown stronger and the output-inflation trade-off improved since the introduction of inflation targeting. This implies that the transmission mechanism works much faster compared with the United States and other advanced countries, with the bulk of the effects on output and inflation taking place within a year, which is consistent with the structural features of the Brazilian economy.

Cheng (2006) examined the impact of a monetary policy shock on output, prices, and the nominal effective exchange rate for Kenya using VAR over the period 1997-2005. Based on the findings the study observed that an exogenous increase in the short-term interest rate tends to be followed by a decline in prices and appreciation in the nominal exchange rate, but has an insignificant impact on output. Moreover, the study further revealed that

variations in the short term interest rate account for significant fluctuations in the nominal exchange rate and prices, while accounting little for output fluctuations. Similarly, Nampewo *et al.*, (2013) investigated the sectoral effects of monetary policy in Uganda using pair wise granger causality test and recursive VAR over the period 1999 to 2011 through the interest rate, bank credit and the exchange rate channels. The considered key sectors of Uganda's GDP growth include; agriculture, manufacturing and service sectors. The findings revealed that a positive shock in exchange rate result in increase in output of agriculture and service sectors, while the output in the manufacturing sector declined. The findings also revealed that the exchange rate channel is the most effective monetary policy transmission channel to all the three sectors considered, while the interest rates and bank credit channels remain relatively weak, especially within the manufacturing sector. Kamaan (2014) investigated the effect of monetary policy on economic growth in Kenya using VARs. The variables included in the model are; Kenya's gross domestic product, credit to the private sector, Central Bank of Kenya Rate, treasury bills, short-term interest rate, lending rate, the nominal effective exchange rate and consumer price index. The findings indicated that one standard deviation monetary policy shock proxy by the Central Bank of Kenya Rate has a negative and insignificant effect on the output in the first two months which then becomes positive and insignificant in the next four months. However, a one standard deviation shock of the interbank rate to inflation is positive and significant for the first two and a half months. The effect continues to be positive but insignificant up to the sixth month. The study also finds the interest rate channel followed by the credit channel to be the most effective channels in influencing economic growth while an exogenous, unexpected, and temporary rise in the Central Bank of Kenya's interbank rate is not followed by an impact on output.

Nwosa & Saibu (2012) investigated the transmission channels of monetary policy impulses on sectoral output growth in Nigeria. The study employed the unrestricted VAR and the Granger causality on quarterly data that spanned the period 1986-2009. The result revealed that interest rate and exchange rate are the most

effective monetary tools to influence sectoral output growth in Nigeria. The interest rate channel was most effective in transmitting monetary policy to agricultural and manufacturing sectors, while the exchange rate channel was most effective for transmitting monetary policy to building and construction, mining, service and wholesale/retail sectors. Similarly, Ishioro (2013) examined the channels of monetary transmission mechanism in Nigeria using annual time series data from 1970 to 2011. The Granger causality test was adopted in the estimation of the relationship between the various channels and selected macroeconomic aggregates. The variables used include; interest rate, exchange rate and private domestic credit extended by the banking system. Real Per capita Gross Domestic Product is used as a proxy for economic growth. Based on the findings, the study concludes that three channels are functional in Nigeria-the interest rate, exchange rate and the credit channels. Also, Ogbonna & Uma (2014) examined monetary policy transmission mechanism in Nigeria by reviewing previous empirical studies. Their review of previous empirical studies showed that interest rate, credit and exchange rate channel are among the channels of monetary policy transmission to the economy. This is line with Oyaromade (2006) that sees bank credit as being significant in the transmission mechanism of monetary policy. CBN (2014) investigated the effect of monetary policy on different components of real output, by employing the structural vector autoregressive (SVAR) framework. The study employed policy and non-policy macroeconomic variables based on quarterly data spanning the period 1993Q1 and 2012Q4. The variables employed comprise six variable for aggregate output variables (baseline model) and seven variables for the disaggregated output. The variables include: the policy variables- money supply, nominal exchange rate, interbank call rate, monetary policy rate and the non-policy variables- consumer price index and real gross domestic product. The five sectoral GDP components are; agriculture, building and construction, manufacturing, services, and wholesale and retail. The result of the impulse response functions revealed that sectoral output responded heterogeneously following contractionary monetary policy shocks, with some immediately responding negatively

(services and wholesale/retail sectors), while others displayed lagged negative responses (manufacturing, building and construction, and agriculture). This result is consistent with economic theory, as output in each sector is expected to decline following monetary tightening. Furthermore, the result of the forecast error variance decomposition showed the most important monetary policy variables that explain the variation in sectoral output are interbank call rate and money supply while innovations from the monetary policy rate and exchange rate do not significantly explain the variations in output. Obafemi & Ifere (2015) compared the Factor-augmented vector–auto regression (FAVAR) framework which exploits large data set of 53 with the traditional VAR model that estimates 6 variables to ascertain the exact channel of transmission of monetary policy. The findings revealed that both models generate qualitatively related results, but the FAVAR model is a superior alternative over VAR on grounds that monetary policy shocks are better identified using the FAVAR model. Also the FAVAR model does not exhibit the prize puzzle problem found in the VAR but allows for the computation of impulse responses of a large number of variables. Also, the results from both models showed that interest rate and credit channels are dominant and strongest channels of monetary policy transmission in Nigeria. Exchange rate and money channels were not significant and pronounced. Ezeaku, *et al.*, (2018) assessed the industry effects of monetary policy transmission channels in Nigeria within the period 1981-2014. Techniques of analysis employed in the study are the Johansen cointegration and the error correction model (ECM). The variables used are; real output (measured as annualized percentage contribution of the industrial sector to GDP), the credit channel (measured as the ratio of private sector credit to GDP), the interest rate channel (this is the real lending rate) and the exchange rate channel. The results revealed that, in the Nigerian case, monetary policy transmission channels jointly have a long-run relationship with real output growth of the industrial sector. The finding also revealed that the private sector credit, interest rate, and exchange rate channels have negative effects on real output growth, both in the long run and in the short

run. The results further showed that, relatively, the degrees of the established effects are higher in the long run than in the short run.

There are quite a number of studies that have investigated the transmission mechanisms of monetary policy in both developed and developing economies, Nigeria inclusive. The results from these studies revealed that different monetary policy stances have different effects on output and inflation due to differences in country (ies) of study, financial environment, time period and methodology used. Hence, there is lack of general consensus as to why some of the monetary policy actions do not affect economic growth through some channels. Most of the previous studies adopted unrestricted and structural vector autoregression model in assessing the dynamic responses of output and inflation to monetary policy shocks. This is on the ground that VAR provides a coherent and credible approach to data description, forecasting, structural inference and policy analysis. Also, VAR was adopted since it is hypothesized that the variables are contemporaneously related and therefore using single equation framework will not be appropriate because of the problem of endogeneity. Furthermore, the studies used quarterly and annual data in the analysis of the transmission mechanisms of monetary policy. However, to the best of our knowledge there has been little or no empirical study on the transmission channels of monetary policy on economic development, particularly, Nigeria. There is therefore the need to investigate the transmission channels of monetary policy on economic development in Nigeria since development captures the welfare of the citizenry which economic growth may not necessarily capture. This present study adopts VAR-innovation technique since it represents standard practice in assessing the dynamic responses of output to monetary policy shocks. Unlike Nwosa & Saibu (2012) and CBN (2014), that used quarterly data within the context of VAR, this study used annual data within the context of VAR because of non-availability of quarterly or monthly data. In addition, this study adopted CBN (2014) first model that examined the effect of monetary policy shocks on the aggregate output but with little modification in the area of variables. Most importantly, this study investigated the effect of monetary policy shocks on economic development (real per capita Gross domestic

Ch.1. Monetary policy transmission mechanism and economic development product) as against Nwosa & Saibu (2012) and CBN (2014) that examined the effect of monetary policy shocks effect on real output/

Data and sources

The annual data for this study were basically from secondary sources. Specifically, the data were obtained from Central Bank of Nigeria (CBN) statistical bulletin, various issues, Securities and Exchange Commission, Nigeria (2017) and World Development Indicators (WDI). The annual data covers the sample period, 1981-2017. The choice of the period and frequency of data was because of availability of data. To examine the relationship between the monetary policy transmission channels and economic development, different transmission variables were used as acknowledged in the literature. The transmission variables include; interest rate (monetary policy rate)(MPR), exchange rate(EXR), private sector credit(PSC) extended by the banking system, money supply (M2) and equity prices(PE). PE is captured by the average price-earning ratio (%) which also captures the Tobin's q channel of monetary transmission mechanism. The non-policy variables included are; inflation rate (INF), an indicator of the general price level which helps to prevent "puzzle"-in results which have been identified inconsistent with conventional theory or empirical observations (Nwosa & Saibu, 2012) and real per capita gross domestic product which is a measure of economic development (RPGDP).

Model specification

The model for this study follows that of Nwosa & Saibu (2012) and CBN (2014) but with little modification. Nwosa & Saibu (2012) and CBN (2014) used quarterly data within the context of unrestricted VAR and structural VAR respectively; this study used annual data within the context of unrestricted VAR because of non-availability of quarterly or monthly data. In addition, this study adopted CBN (2014) first model that examined the effect of monetary policy shocks on the aggregate output but with little modification in the area of variables, however, the transmission variables are in line with Nwosa & Saibu (2012). The real per capita

gross domestic product, monetary rate and exchange rate entered the unrestricted VAR are expressed in logarithmic form except for the interest rate, equity price and inflation which entered in their respective percentage term. The unrestricted VAR model for this study is specified as follows:

$$X_t = \alpha + b_1X_{t-1} + b_2X_{t-2} + b_3X_{t-3} + \dots + b_nX_{t-k} + u_t \quad (1)$$

$$X_t = [RPGDP, MPR, EXR, PSC, EP, INF] \quad (2)$$

X is a $k \times 1$ – dimensional Vector of the endogenous variables, α is a $k \times 1$ - dimensional vector of constant and $b_1 \dots b_n$ are $k \times k$ dimensional autoregressive coefficient matrices and u is k -dimensional vector of the stochastic error term nominally distributed with white noise properties $N(0, \sigma^2)$.

The impulse response function framework (IRF) and forecast error variance decompositions (FEVD) framework were derived from equation (1). The derivations are very rigorous and cumbersome, hence, the study never bothered about the derivation.

Method of data analysis

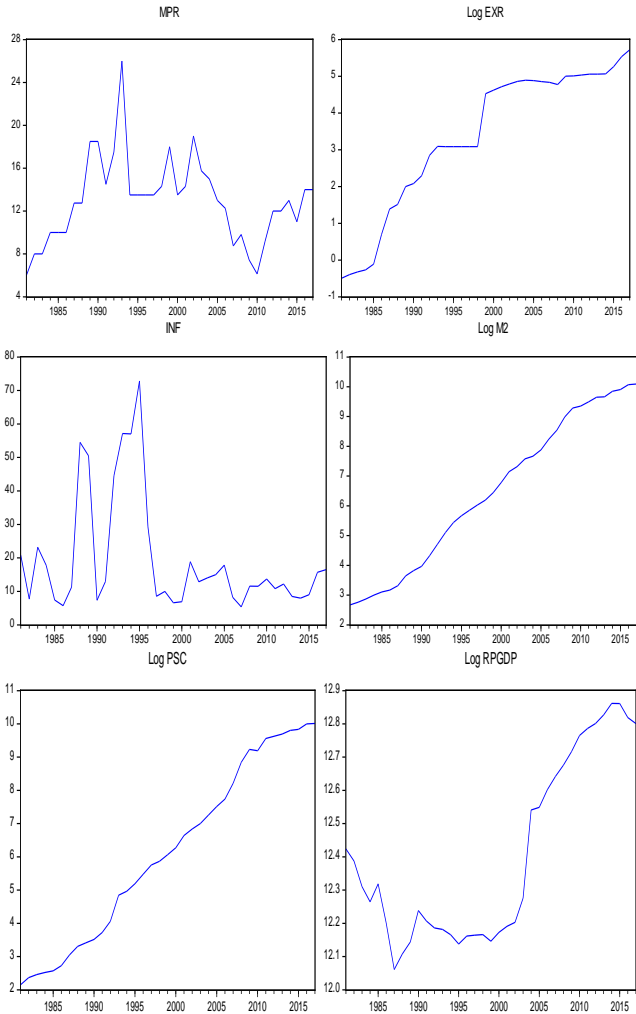
The study employed the unrestricted vector autoregression (VAR) model. This method represents standard practice in assessing the dynamic responses of macroeconomic variables to monetary policy shocks. The unrestricted VAR system consists of six variables: monetary policy variables (monetary policy rate, exchange rate and credit to private sector), asset price, inflation and economic welfare. However, before estimating the unrestricted VAR model, the properties of the variables were examined to substantiate the stationarity and long run relationship of the variables. Also, the effect of monetary policy on economic development was investigated. Consequently, the monetary policy transmission channels were examined in relation to economic development. The implication of this is to account for the effect of monetary policy shocks (channels) on economic development. For the choice of appropriate lag length of the unrestricted VAR model, the LR, FPE, AIC, SC and HQ criteria for an optimal lag length were employed in the study. This is done in order to avoid

Ch.1. Monetary policy transmission mechanism and economic development
VAR model misspecification that often generates autocorrelation error. A stability test was undertaken to ascertain the reliability of the selected VAR model using the autoregressive (AR) root stability test.

Results and Discussion

Preliminary examination of the data

Unit Roots Test



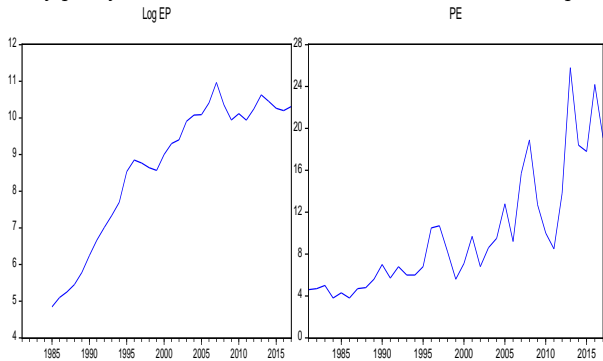


Figure 1. Plot of non-stationary Variables

A cursory look at graphical presentation of series revealed the presence of unit roots in the variables (figure 1), indicating that the variables are non-stationary. To further verify the features of the variables the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) test for stationarity were employed.

Table 1. ADF/PP Statistics for Testing Unit Roots in the Variables

| Variable | Series | ADF-Test | | PP-Test | |
|-------------------------------|--------|-------------|----------------------|-----------|----------------------|
| | | At Level | 1 st Diff | At Level | 1 st Diff |
| Real Per Capita GDP | RPGDP | -2.307165 | -4.518710* | -2.277304 | -4.518710* |
| Monetary Policy Rate | MPR | -3.149422 | -6.227483* | -3.052395 | -7.665611* |
| Exchange Rate | EXR | -1.213744 | -3.803112** | -0.182718 | -3.797297** |
| Bank Credit to Private Sector | PSC | 0.240430 | -6.669052* | 0.195276 | -6.675290* |
| Equity Prices | EP | -3.123603 | -5.843775* | -3.214564 | -7.061048* |
| Inflation Rate | INF | -3.893012** | -5.439090* | -2.771045 | -9.883574* |
| Broad Money Supply | M2 | -3.848692** | -8.054250* | 1.288181 | -6.337136* |
| Critical Values | 1% | -4.234972 | -4.243644 | -4.234972 | 4.243644 |
| | 5% | -3.540328 | -3.544284 | -3.540328 | -3.544284 |

Note. *(**) significant at 1% (5%) level. ADF/PP Unit root tests with constant and trend.

The unit root tests reported in Table 1 show that the variables are non-stationary at level but unequivocally stationary at first difference at 5 percent level, implying that they are I(1) properties. Since the point of interest lies in the dynamic interrelationships among the macroeconomic variables, the VARs were estimated in levels to avoid losing economic information embedded in the variables, as it is common in monetary literature. In addition, by carrying out level form estimation, the study implicitly assumed

Ch.1. Monetary policy transmission mechanism and economic development that there are long run relationships among the underlying variables (CBN, 2014).

Table 2. *Selection of Optimal VAR model Lag Length*
Selection of Optimal Lag Length for VAR Model

| Lag | LogL | LR | FPE | AIC | SC | HQ |
|-----|-----------|-----------|-----------|-----------|-----------|-----------|
| 0 | -389.7518 | NA | 519.2360 | 23.27952 | 23.54888 | 23.37138 |
| 1 | -224.0749 | 263.1339* | 0.261853* | 15.65147 | 17.53697* | 16.29448* |
| 2 | -185.5578 | 47.57998 | 0.278497 | 15.50340 | 19.00505 | 16.69756 |
| 3 | -147.4120 | 33.65809 | 0.457252 | 15.37717* | 20.49497 | 17.12249 |

Note. * indicates lag order selected by the criterion. Selection Criteria-LR: sequential modified LR test statistic (each test at 5% level) FPE: Final prediction error, AIC: Akaike information criterion, SC: Schwarz information criterion, HQ: Hannan-Quinn information criterion.

Table 2 reports each criterion with its maximum lag. The result shows that LR and SC have a maximum lag of 1 while FPE, AIC and HQ have a maximum lag of 4 and VAR residual serial correlation LM test is carried out to choose the appropriate lag length. The VAR model is estimated for each of the lag length suggested by different criteria. The model that minimizes AIC and SC is chosen as optimal, and produces no autocorrelation. In this particular case, an optimal lag length of order 3 was employed in the study as selected by AIC criteria.

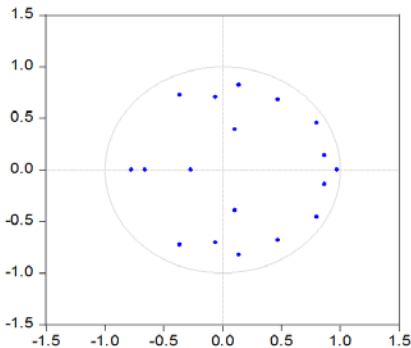


Figure 2. *Stability test*

To ascertain the reliability of the chosen VAR model, a stability test was undertaken using the autoregressive (AR) root stability test. The estimated result proved to be stable since all roots lie inside the unit circles.

Impulse response graph analysis

The impulse response function traces the effect of monetary policy shock on other variable in VAR model. The monetary policy rate (MPR) is the official rate of the Central Bank of Nigeria and serves as the anchor rate, as well as the operating range or band of other short term interest rates in the money market. The source of shock transmission in the model is assumed to be from MPR and affects the real per capita output through different channels. Hence, the monetary policy shock is measured in terms of the MPR. Therefore, the responses of RPGDP, EXR, PSC and INF to unexpected monetary shock (MPR) provide a useful indicator for determining the effectiveness of monetary policy in the domestic economy.

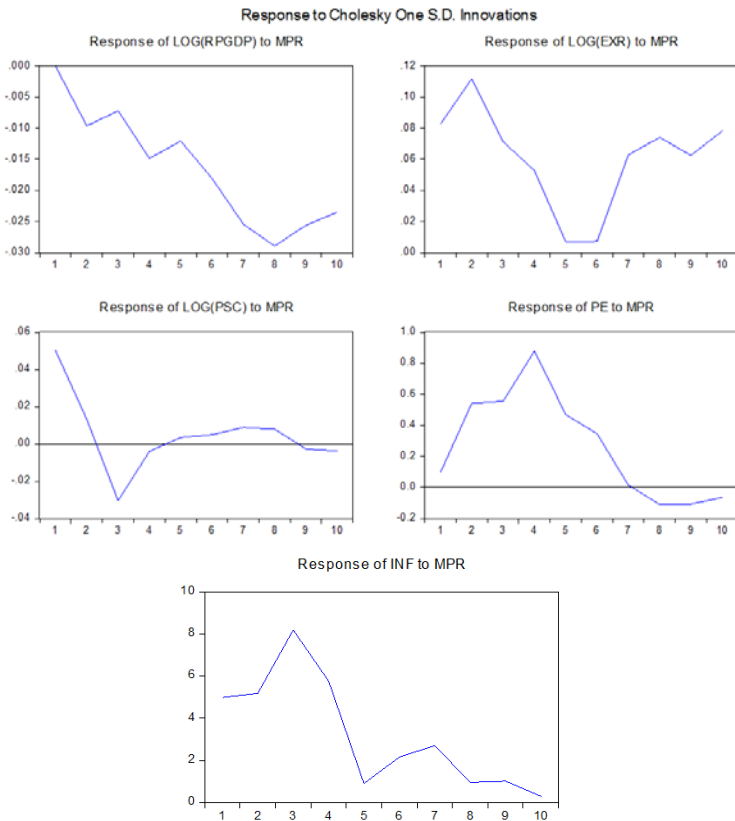


Figure 3. Impulse Response of Variables to MPR

From figure 3, it shows that the response of real per capita output to monetary policy shock is positive and significant but fluctuates. As time goes on the effect of the shock begins to die down. This is consistent with theory which stipulates that monetary policy may impact on output in the short-run and becomes neutral in the long-run (CBN, 2014). Following a monetary shock, the exchange rate initially depreciated significantly and later began to appreciate. This is not in line with theory which stipulates that an increase in interest rate is expected to raise portfolio induced inflows, increase demand for local currency and leads ultimately to currency appreciation immediately. In the case of inflation, monetary shock puts an upward pressure on prices and later it begins to fluctuate. The fluctuation in inflation is a definite factor in the price spiral. However, the major driving force for the price spiral may be from the exchange rate. Also, monetary shock leads to a significant decrease in credit but it later begins increase. This implies that monetary shock exhibited a significant influence on the financial health of borrowers through the interest expenses and net cash flows which in turn influenced the supply of funds. Furthermore, it is revealed that monetary shock has a positive influence on the equity price initially but later begins to fall. This shows that monetary shock is strongly associated with equity price which in turn influence the households' lifetime resources and wealth, consequently influencing consumption and output.

Variance decomposition

Forecast Error Variance Decomposition (FEVD) is used to determine the most significant monetary policy channels in the economy. In line with Nwosa & Saibu (2012), the monetary policy variable which accounted for the largest proportion of the variation in output is taken as the most significant channel through which monetary policy is transmitted to real sector. Table 3 presents the estimates of the variance decomposition generated from the unrestricted VAR model.

Table 3. *Forecast Error Variance Decomposition of Real Output*

| Period | S.E. | _LOG(RPGDP) | MPR | _LOG(EXR) | _LOG(PSC) | LOG(PE) | INF |
|--------|----------|-------------|----------|-----------|-----------|----------|----------|
| 1 | 0.068500 | 100.0000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| 2 | 0.095188 | 94.54648 | 1.016795 | 0.039843 | 3.145189 | 0.046839 | 1.204853 |
| 3 | 0.109233 | 88.31697 | 1.208549 | 0.237103 | 8.092686 | 0.041696 | 2.102998 |
| 4 | 0.119107 | 83.95428 | 2.565880 | 2.383011 | 9.003326 | 0.061153 | 2.032354 |
| 5 | 0.127189 | 82.40851 | 3.148799 | 4.161282 | 8.014502 | 0.191359 | 2.075546 |
| 6 | 0.134260 | 81.51888 | 4.635227 | 4.270515 | 7.209605 | 0.213367 | 2.152403 |
| 7 | 0.140766 | 78.94830 | 7.484955 | 3.969911 | 6.580417 | 0.568909 | 2.447510 |
| 8 | 0.145776 | 74.92212 | 10.92329 | 4.090236 | 6.202095 | 0.889346 | 2.972913 |
| 9 | 0.150122 | 71.33463 | 13.20774 | 4.391480 | 6.583117 | 0.861801 | 3.621232 |
| 10 | 0.154817 | 67.51724 | 14.71769 | 4.722404 | 8.059876 | 0.835244 | 4.147554 |

Note. This table shows the relative contribution of innovations in monetary policy rate (mpr), exchange rate, private sector credit (psc), asset price (pe), inflation rate (inf) to variations in the forecast error for real per capital output (rpgdp). S.E. means standard errors

From Table 3, it is evident that shocks to monetary policy rate explained the largest variation in real per capita output followed by private sector credit and exchange rate. These shocks have a progressive impact on real per capita output except private sector credit while the average contributions of shocks from equity price channel is below one percent. This result is consistent with the hypotheses that monetary policy rate, credit and exchange rate channels play significant role in transmitting monetary policy impulse to the real per capita output. Some of the findings are consistent with Oyaromade (2006), Nwosa & Saibu (2012), Ishioro (2013), Ogbonna & Uma (2014) and Kamaan (2014) but inconsistent with CBN (2014) that posited that monetary policy rate and exchange rate do not explain the variations in output. The implication of this result is that the monetary policy rate, credit and exchange rate as monetary policy instruments have influence on real per capita output (economic development). A possible explanation to the influence of these channels on the real per capita output could reflect the high demand domestic investment, consumption purpose and import of goods and services, as well as foreign inputs whose prices are determined mostly by variations in exchange rate. These have a serious implication on the spending pattern of the people, firms and ultimately on prices of goods and services which in turn affects the welfare of the people. However, the evidence provided in this study does not support the

hypothesis that asset price plays significant role in transmitting monetary policy impulse to the real per capita output. This supports the argument of Nwosa & Saibu (2012) that the inefficiency of the asset price channel under high inflation could also be attributed to the absence of longer-term debt instruments; as these instruments are important because the longer the life cycle of the instrument the greater the impact of interest rate changes on the value of the asset. Also, the underdeveloped nature of the financial market in Nigeria greatly hampered the effectiveness of asset price channel on the real per capita output. Hence, asset price might not be a relevant channel of monetary policy innovation in Nigeria. Therefore, the basic transmission mechanism detected by this study is shown as follows;

$$MS\uparrow \rightarrow IR\downarrow \rightarrow PSC\uparrow \rightarrow EXR\downarrow \rightarrow INV\uparrow \rightarrow Y(EW)\uparrow$$

The implication of the above channel is that, an expansionary monetary policy will lead to fall interest rate, fall in real interest rate will leads to increase in quantity of bank loans (credit) as well as exchange rate depreciation. The combined effect of fall in interest rate, increase in quantity of bank loans (credit) and fall in the value of domestic currency will boost investment, which subsequently boost real per capita output (welfare) of the economy.

Table 4. *Forecast Error Variance Decomposition of Inflation*

| Perd | S.E. | LOG(RPGDP) | MPR | LOG(EXR) | LOG(PSC) | PE | INF |
|------|----------|------------|----------|----------|----------|----------|----------|
| 1 | 0.068500 | 0.270439 | 25.40330 | 1.810109 | 2.363910 | 8.635671 | 61.51657 |
| 2 | 0.095188 | 4.282971 | 29.79682 | 4.807120 | 2.967622 | 13.63424 | 44.51122 |
| 3 | 0.109233 | 17.65550 | 35.09574 | 11.46487 | 4.610264 | 7.568705 | 23.60492 |
| 4 | 0.119107 | 15.47063 | 39.31607 | 10.27225 | 6.032913 | 8.220481 | 20.68765 |
| 5 | 0.127189 | 16.76722 | 32.25201 | 9.652538 | 15.23864 | 8.597374 | 17.49222 |
| 6 | 0.134260 | 14.66177 | 28.80431 | 9.426353 | 21.08661 | 10.41830 | 15.60266 |
| 7 | 0.140766 | 14.27107 | 27.37828 | 8.909152 | 23.65708 | 10.54580 | 15.23863 |
| 8 | 0.145776 | 14.60171 | 26.79731 | 8.807745 | 23.83685 | 10.81865 | 15.13773 |
| 9 | 0.150122 | 15.41669 | 26.37159 | 8.702909 | 23.49217 | 11.21015 | 14.80650 |
| 10 | 0.154817 | 15.38683 | 26.19459 | 8.720229 | 23.84448 | 11.14825 | 14.70562 |

Note. This table shows the relative contribution of innovations in monetary policy rate (mpr), exchange rate, private sector credit (psc), asset price (pe), inflation rate (inf) to variations in the forecast error for real per capital output (rpgdp). S.E. means standard errors

Table 4 shows the variance decomposition of inflation, that is the response of inflation to real per capita output, monetary policy rate, exchange rate, private sector credit and equity price. It is readily seen that about 62% of the variation in inflation is explained by its own innovation while monetary policy rate (MPR) and equity price account for about 25%, and 9%, respectively. The shocks from private sector credit, exchange rate and real per capita output explain less than 3% of change in inflation. However, the result shows a progressive influence of monetary policy rate (MPR), equity price, private sector credit and exchange rate on inflation. The proportion of the variation in inflation attributable to MPR and PSC are much higher than other variables as they account for more than 20%. Thus, this study infers that the monetary policy rate (MPR) and private sector credit are the key variables influencing inflation.

Conclusion and policy recommendations

This chapter investigated the channels of monetary policy transmission mechanism on real per capita gross domestic product (economic development) using annual data spanning the period 1981 and 2017. To achieve the objective of study the competing theoretical views on monetary policy channels and economic growth were explored while unrestricted vector autoregressive (VAR) methodology was employed for the analysis. The findings from the Impulse response functions showed that RPGDP, EXR, PSC, PE and INF responded heterogeneously to unexpected monetary shock (MPR) and hence, provide a useful indicator for determining the effectiveness of monetary policy in the domestic economy. In the case of the forecast error variance decomposition, the study revealed that shocks to monetary policy rate explained the largest variation in real per capita output followed by private sector credit and exchange rate. These shocks have a progressive impact on in real per capita output except private sector credit, while the average contributions of shocks from equity price channel is below one percent. Therefore, the basic channels of monetary transmission are monetary policy rate, credit and exchange, while equity prices might not be a relevant channel of monetary policy innovation in Nigeria. Furthermore, the forecast

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error variance decomposition of inflation revealed that the sources of inflation are through the monetary policy rate (MPR) and private sector credit. Based on the empirical evidence, the study therefore recommends that there should be judicious management of interest rate, credit and exchange rate policy to promote real per capita output in Nigeria. Also, there should be constant regulatory reforms and the strengthening of monetary policy implementation in order to improving monetary policy efficiency on real per capita output. Some of these reforms should be implemented in the short term to strengthen the interest rate, credit and exchange rate channel. In addition, to ensuring significant influence of the asset price, the monetary authority should maintain a low and stable inflationary level.

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2 Determinants of the failure of small and very small enterprises in the Cameroonian textile industry

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Introduction

Business failure issue is a universal fact. In Canada, about 85% of Small and Medium size Enterprises (SMEs) are still operating after one year, and this percentage increases to nearly 50% after five years of functioning (Normandin, 2015). In France, about 66% of companies created in 2006 were still active in 2013, and 75% of them created in 2010 according to the Corporate Observatory. This worse situation in Africa (Lecerf, 2007; Yemene, 2012; Mandjem, 2015) shows that in this continent, companies are unsustainable due to institutional and structural hindrances: the existence of several trade regimes, the production and supply weakness, the low exports' level, the lack of competitiveness, the

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high costs of production factors and the mismatch between the received trainings and employment type. Others ([Chambolle & Mignaval, 2008](#) ; [Nkouka, Zamo & Bitemo, 2013](#); [Nembot, 2014](#); [Etéki, 2014](#)) show that they are very fragile and unable to finance innovation so as to ensure longevity, because of high research and developmental costs, an inappropriate environment to business development and an inadequate educational system.

In Cameroon, this reality is demonstrated through several facts. According to the 2009 General Corporate Census (GCC), more than 50% of these companies exist for less than four years. In line with CAMERCAP-PARC ([2017](#)), the mortality rate of SMEs is over 70% after one or two years of functioning. As far as the textile industry is concerned, this issue is very noticeable. According to the 2003 report of the Chamber of Commerce, Industry, Mines and Crafts (CCIMA), it presents "a strong vertical integration, ranging from cotton production to processing through spinning and weaving", because it is full of activities: cotton growing, spinning, fabric processing, clothing and household linens. Its situation has been deteriorated over time. According to this report, its turnover decreased from CFAF 42 billion to CFAF 20 billion between 1993 and 2002, showing a drop of more than 50%. Today, the potential of this sector continues to deteriorate despite the wide range of products it provides (MinCommerce, 2012; INS, 2014; MINEPAT, 2015). According to the National Institute of Statistics, ([INS, 2014](#)), in 2013, companies therein recorded huge losses: confection (101.60 million CFAF), spinning (3.34 billion CFAF), distribution (30.60 million CFAF) and haberdashery (390,000 CFAF).

For the government to revive this sector, reflection days on textile products' assessment called "*Textile Show*" is being organized each year since 2012 through the Ministry of Trade. However, it still faces many challenges ([MINEPAT, 2015](#)). According to this source, the usual synergy which should exist between clothing companies, designers and spinners is very weak. It is also highlighted that local products are vigorously competing with second-hand cheaper items. This is a very worrisome situation, as textile imports increased from \$ 63 billion in 2008 to \$ 97 billion in 2011 ([MinCommerce, 2012](#)).

However, assets likely to boost the development of this field exist. The Strategic Paper for Growth and Employment (DSCE, 2010) places it among the prioritized sectors to be developed. The Ministry of Trade (2012) identified assets which could trigger its development: regulatory measures on the stamping of imported textile products and their taxation; trade facilities stipulated by the American Law on Business Opportunities and Growth in Africa, the African Growth and Opportunity Act (AGOA); the presence of a large buoyant market, that of CEMAC; well-trained human resources (stylists, modellers, etc.); high domestic demand for clothing⁴ items; access to good quality raw materials⁵ (cotton seed) and upstream and downstream cotton processing structures. This paradoxical observation raises the issue of business failure's causes in this sector. In other words, what are factors likely to explain why business fail in the Cameroonian textile field?

Using data from the General Corporate Census conducted in 2014 by the National Institute of Statistics (INS), this study aims at identifying key hindrances likely to deteriorate businesses' performance and cause their failure. The first section deals with literature review on business failure notion. Section two presents the situation of the studied sector, section three the methodology and the last the results.

Literature review

It is interesting to first understand the business failure notion before reviewing investigations on its explanatory factors in order to use it for the empirical part of the work.

The business failure concept

Up till nowadays, the apprehension of the business failure notion remains unclear in the entrepreneurial research sphere (Dama, 2016). This is due to its several connotations, and various terms are also used to explain it (Khelil, Smida & Zouaoui, 2012).

⁴ 15% of local demand met by existing companies, hence 85% imports to be replaced.

⁵ Weak processing rate (about 5%), hence opportunities for more processing.

Some authors (Bacq, Giacomini, & Janssen, 2009, cited by De Hoe, & Janssen, 2014) identified its different names. This includes bankruptcy, collapse, atrophy, defeat, default, nonfeasance, insolvency or entrepreneurial decline. The Anglo-Saxon literature also enables to identify different ways in which this term can be used. Khelil, Smida & Zouaoui (2012) and De Hoe & Janssen (2014) developed a synthesis of terms used by Anglo-Saxon scholars to determine the business failure notion. These include death, exit, discontinuity, decline, unsuccessfulness, bankruptcy, financial distress, poor performance, liquidation, default, entrepreneurial and business downfalls.

Others as De Hoe & Janssen, (2014 Ch.9 P.180) state that "these terms do not all have the same meaning". They show for instance that the term "business exit" is defined in three different ways in literature. At first, it refers to "the will of a contractor to leave his/her company for several reasons: legal or relationship issues with partners, death, a change of interest, a desire to get involved in another business, retirement or departure related to a merger or acquisition". From this first definition, note is taken on that "the choice to leave the company does not depend on its economic viability, but on the contractor's will".

Secondly, the business exit notion refers to the exit itself and not to a contractor or a particular market. Finally, it is understood as business's discontinuity, closure or bankruptcy. As pointed out by Smida & Khelil (2010) and De Hoe & Janssen (2014), these last two ways of apprehending this notion (business exit) are more assimilated to the concept of entrepreneurial failure. From their viewpoints, the economic approach to define the concept is the most widespread, and it uses the "failure" or "bankruptcy" terms. Smida & Khelil (2010) show that failure notion stands on a resource-based view theory. This theory holds that a company is in economic bankruptcy when it can no longer honour its financial commitments which have come to an end (Bacq, Giacomini & Janssen, 2009 cited by De Hoe & Janssen, 2014). It suffers a decline in income and/or an increase in charges as it becomes insolvent (Shepherd, Wiklund & Haynie, 2009 cited by De Hoe & Janssen, 2014). This is a conducive situation to legal bankruptcy (Bacq,

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Giacomin & Jansen, 2009), consisting in examining its economic and financial indicators so as to declare its liquidation.

In addition, some authors (Smida & Khelil, 2010; Ucbasaran, Westhead, Wright & Flores, 2010 cited by De Hoe & Janssen, 2014) propose to add to economic aspects, the entrepreneur's expectations and goals. Specifically for the latter, in addition to a given inefficiency (drop in resources and inability to generate enough profit to maintain competitive advantage), the entrepreneur may also note a demotivation (lack of satisfaction due to the unfulfillment of his/her aspirations) in his/her structure. Therefore, entrepreneurial failure reflects one's inability to achieve one's goals. In fact, even though the entrepreneur may have several objectives (Boutillier & Uzunidis, 2011), his/her main goal is to make profit (Marx, 1976) and detect new profit opportunities (Boutillier & Uzunidis, 2010). As a result, this approach to entrepreneurial failure is similar to the decline's economic definition which has well been tackled by Smida & Khelil (2010). This study makes use of this economic definition. It is therefore important to question the driving forces behind business failure as a whole.

Causes of business failure

Smida & Khelil (2010) made a good synthesis of literature on the causes of business failure classified in three categories of approaches: the first is centered on the entrepreneurial context's predominance, the second on resources' primacy and the third on the importance of entrepreneurial motivation. However, none of them seem to really capture what this notion is all about.

The entrepreneurial context

Approaches based on the predominance of the entrepreneurial context fall within the perspective of business dependence on environmental variables defined in terms of natural resource endowments, socio-cultural and legal or regulatory contexts. These theories show the entrepreneurial context being the only force explaining companies' survival or their disappearance, and not the skill's level of the creator (Lelogeais, 2004; Morgan, 2006 quoted by Smida & Khélil, 2010).

Particular resources

Theories centered on resources' primacy explain business performance from the importance of internal resources compared to external constraints. According to Smida & Khelil (2010), this approach stems from the observation that most authors who investigated on the impact of the entrepreneurial context's primacy could not find why companies who started their activities at the same time and/or in similar environments achieve different performance levels. These theories highlight on performance largely depending on available resources managed by the company, including technology or product, governance and management, strategy, organization, employees and financing (To Hu, 2011; Smida & Khélil, 2010).

Entrepreneurial Motivation

The theoretical approach centered on the importance of entrepreneurial motivation presupposes that there is a relationship between the entrepreneur's motivation and the success of his/her firm (Shane, Locke & Collins, 2003; Lasch, Le Roy & Yami, 2005). Inspired by literature, Gray, Foster & Howard (2006 cited by Smida & Khélil, 2010) state that entrepreneurs who have deliberately chosen entrepreneurship because they want to be contractors, experience a strong intention, and their success probabilities are presumed higher. On the other hand, those who are forced to start their own business because of joblessness or to earn a living, express a weak will (Gray, Foster & Howard, 2006 quoted by Smida & Khélil, 2010). The failure risk is estimated to be higher for this group of entrepreneurs (Smida & Khélil, 2010).

Psycho-sociological Features of the Leader-founder

Some studies show that in addition to the leader-founder's motivations, it is difficult to analyze business failure while ignoring other characteristics of the latter (Wetter & Wennberg, 2009). These studies emphasize on the use of non-financial variables (quantitative or qualitative) as the entrepreneur's age, his/her educational level, professional experience, family and social or ethnic affiliation (Crutzen, 2009; Crutzen & Van Caillie, 2009). Others (Lelogeais, 2004; Li, Sun & Wu, 2010) highlight on the

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diversification level and the number of employees as factors linked to business failure. According to Sami (2011, Ch1, P.66), "the taking into account of this information leads to discriminating functions which sometimes offer better classification percentages (failure or not) of companies than models with only financial ratios".

An inventory of the textile industry in Cameroon

The economic upheavals suffered by the textile sector following the 80s and 90s economic crisis led the Cameroonian government to initiate a series of investigations (CCIMA, 2003; INS, 2014; MINEPAT, 2015) aimed at reviving this sector. They provide an overview of this field in terms of its poorly exploited economic potential, its competitiveness as well as its financing.

A Potentially Promising Sector for Cameroon's economy

According to the CCIMA report (2003), "the textile sector in Cameroon is one of the most potentially important sectors of the manufacturing industry". In fact, unlike what was observed in the 1980s, many SMEs therein now work in the informal. This seems to be at the origin of the underestimation of its potential (SYNDUSTRICAM, 2003 quoted in this report). Moreover, this source shows that in 2002, its turnover amounted to 20 billion CFAF. To demonstrate this potential beyond what has just been presented, a general corporate census was carried out both in the formal and the informal (INS, 2014). Its final report presents "a turnover of 142.1 billion CFAF generated in 2013, of which 125.2 billion CFAF for the MEs/GEs and 16.7 billion CFAF for the VSEs/SEs", the performance of MEs/GEs being driven by the cotton ginning activity which contributes to 87.3% of the overall turnover.

Spatial concentration, many jobs, but a majority of workforce trained on the job

The resulting census shows that nearly 50% of production units are located in the Douala and Yaounde metropolises. Indeed, these cities account for 23.2% and 26.0% respectively. Other cities are divided between 12.6% and 1.5%. According to a summary note

from the Ministry of Economy, Planning and Regional Development (MINEPAT, 2015) in 2003, the number of jobs created by companies in this sector amounted to 66,681. Among them, 60,706 are created by VSEs/SEs and 5,975 by MEs/GEs. Their promoters are mostly of low educational levels, relatively young and generally trained on the job.

A sector where companies are essentially financed through proper funds

The main investments' financing source in VSEs/SEs of the textile sector comes from promoters according to the rating. This self-financing is more visible during the creation of the company. According to this source, in 2013, about 67.2% of them reported having financed their businesses with their own funds. The proportions of other financing modes then amounted to 52.9% for personal funds, 11.1% for associative loans, 9.2% for family help and 2.8% for bank/microfinance loans. These small proportions imply a lack of financial support being the major hindrance to boost these firms.

Low export competitiveness due to stiff competition from imports

The general corporate census shows that export rates are relatively low and stand at 16.1% and 0.3% for MEs/GEs and VSEs/GEs respectively. This shows the production of the sector's downstream segment being mainly destined to the local market. In addition, local products face stiff competition from thrift shops, Asian goods and those from neighboring Nigeria. "This competition is also explained by raw materials' high cost, obsolescent equipment and tax burden (INS, 2014). According to this source, operators surveyed evoke these factors in proportions of 69.8%, 60.1% and 59.1% respectively. In addition, it is necessary to index the influence of populations' preference for foreign brands.

Research methodology

The probit model was used because some authors demonstrate (Lennox, 1999, Jones & Henshen, 2004) that the improvement of failure prediction requires the integration of qualitative variables into the analysis. Probabilistic models easily take into account these types of variables. These are managerial experience, educational level, training, etc. The implementation of this model therefore involves first presenting the data source and the study variables, and then making the statistical analysis of the data used.

Data source, study variables and explanations on the probit model choice

This section deals with the study's data source, the selected variables and the operationalization of tests which led to retain the probit model.

Data Source

Data used in this work come from operators' census in the cotton/textile/clothing sector carried out by the National Institute of Statistics (INS) in 2014. In total, 14,697 production units and 26 training centers backed by these units, including the identifiable ones operating in the informal were surveyed. Operators selling only imported fabrics and second-hand clothes were not affected.

Data for Very Small Enterprises (VSEs) and Small Enterprises (SEs) were used for two reasons. The first was that 99.4% of SEs and VSEs make up 99.4% of companies in the industry. The second was that the questionnaire addressed to these corporations contained questions to determine whether the company is failing or not. These questions related to "Sales in the last month of activity (in thousands of CFAF)", "Amount of total expenses for the last month of activity (in thousands of CFAF)". These questions served to pinpoint the profit of these companies, demonstrating whether they are successful or not.

However, all the VSEs and SEs identified were not used. We simply extracted a number of them, of which half fits the above-mentioned criteria. In total, 251 failed and 249 successful companies were extracted from this base, with the aim of avoiding prediction biases due to a large difference between the numbers of

these two types of enterprises (Ohlson, 1980, Matoussi, Mouelhi, Sayah & Salah, 2011).

Study Variables

The economic approach to business failure drawn from theories and centered on resources' primacy was favoured. This led to retain some explanatory variables as concerns business attributes (To Hu, 2011; Smida & Khelil, 2010; Dama, 2016). These are the economic, financial and business characteristics as well as the entrepreneur's skills. Given that the quest for factors linked to business failure has to use a dichotomous variable model, the coding (0.1) was used to indicate whether the company is failing or not. Code 1 was assigned to the failed enterprise and 0 otherwise. Table 1 presents the dependent variable and the set of explanatory variables used.

Table 1. *Definitions of Study Variables and Descriptive Statistics*

| | | Modalities | Proportions | Standard deviation |
|--|---|-------------------------------|-------------|--------------------|
| Dependent Variable: Failure occurrence | | 1 if the business fails | 0.502 | 0.02238 |
| | | 0 otherwise | 0.498 | 0.02238 |
| Explanatory Variables | | | | |
| Dimensions | Determinants | | | |
| Economic and financial characteristics | Yearly Staff costs | 1 if [0- 1,000,000 [| 0.486 | 0.02237 |
| | | 2 if [1,000,000-3,000,0000 [| 0.314 | 0.02015 |
| | | 3 if more than 3,000, 0000 | 0.200 | 0.01978 |
| | Investment level during 2013 | 1 if [0-2million [| 0.512 | 0.02236 |
| | | 2 if [2-5million [| 0.426 | 0.02155 |
| | | 3 if above 5 million | 0.062 | 0.01653 |
| | Prices set compare to main competitors (given intention) | 1 if high | 0.183 | 0.01887 |
| | | 2 if equal | 0.432 | 0.02208 |
| | | 3 if low | 0.385 | 0.02200 |
| | Has received grants during 2013 | 1 if yes | 0.214 | 0.01947 |
| | | 0 otherwise | 0.786 | 0.03764 |
| | Main funding source at creation | 1 if personal funds | 0.601 | 0.02109 |
| | | 2 if State or family supports | 0.202 | 0.02105 |
| | | 3 if associative loans | 0.143 | 0.01931 |
| | | 4 if bank loans | 0.054 | 0.01742 |
| | Has professional training in the field | 1 if yes | 0.418 | 0.02208 |
| | | 0 otherwise | 0.582 | 0.02208 |
| | Entrepreneur's educational level | 1 if primary education or not | 0.323 | 0.02105 |
| | | 2 if secondary education | 0.421 | 0.02202 |
| | | | 0.256 | 0.19834 |

Ch.2. Determinants of the failure of small and very small enterprises...

| Table 1. Determinants of the nature of small and very small enterprises | | | | |
|---|-----------------------------------|---|-------|---------|
| Entrepreneur's features | Experience in business management | 3 if tertiary education | | |
| | | 1 if less than 10 years | 0.539 | 0.02260 |
| | Pricing modes | 2 if more than 10 years | 0.461 | 0.02260 |
| | | 1 if in constant percentage on the cost price or according to competitors' prices | 0.286 | 0.02086 |
| | | 2 if through professional association | 0.187 | 0.01905 |
| | | 3 if through bargaining with customers | 0.527 | 0.22532 |
| Business features | Company's creation date | 1 if before 2000 | 0.433 | 0.02218 |
| | | 0 if after 2000 | 0.567 | 0.02218 |
| | Structure type | 1 if spinning, weaving/ knitting, finishing, crocheting, making, fashion | 0.564 | 0.02217 |
| | | 0 if distribution, haberdashery | 0.436 | 0.02217 |
| | Hold a taxpayer number | 1 if yes (formal market) | 0.522 | 0.02236 |
| | | 0 otherwise (informal market) | 0.478 | 0.02236 |

Source: Operators' Census in the Cotton/Textile/Confection Sector (INS, 2014)

From this table, it appears that the majority (80%) of VSEs and SEs spend less than 3,000,000 CFAF in wage costs. In this percentage, those who spend less than 1,000,000 CFAF for staff costs represent about 48.6%. This shows that the textile sector in Cameroon is mostly packed with very small structures. These are operators mainly practicing in spinning, weaving or knitting, finishing, crocheting and especially the making of cotton-derived products. This is confirmed by the percentage (51.2%) of companies investing less than 2,000,000 CFAF in their yearly activities.

Most of these Very Small and medium-sized Enterprises (78.6%) do not receive subsidies, and the majority (81.7%) of them claim to charge prices lower or equal to those of their competitors. Those who claim to practice strictly lower prices represent 38.5% of the total workforce. These are operators from the informal sector because input prices seem to be the same for these firms, for the Cameroonian economic environment has experienced price stability for several years as observed in the global financial statistics compiled by the International Monetary Fund (IMF,

2017). Moreover, a significant proportion (47.8%) of companies selected for this study work in the informal sector.

Entrepreneurs in this sector benefit from different financing sources at the creation of their company: 60.1% from personal funds, 20.2% either from the State or family, 14.3% have access to associative loans from tribal, neighborhood, professional associations and others. Only 5.4% have access to bank loans. Very few (25.6%) have reached the university level and the vast majority (58.2%) have not received any professional training in line with their job. Most (53.9%) have less than 10 years of work experience in business management. Similarly, the majority (52.7%) set prices by bargaining with customers, only 28.6% set rates while taking into account a constant percentage on the cost price and according to prices set by competitors, and 18.7% respect the scale chosen by their professional association. In general, operators who do not keep accounts to properly determine the cost price of their products are those bargaining on pricing. Such behaviour mostly stems from those working in the informal sector and having a competitive advantage over those who pay taxes.

As concerns the sampled companies' characteristics, 56.4% work in production activities: spinning, weaving/knitting, finishing, hosiery, clothing and fashion. About 43.6% work in distribution and haberdashery. 43.3% were created before 2000 against 56.7% after this date. This finding corroborates the idea put forward in the CCIMA's (Chamber of Commerce, Industry, Mines and Crafts) report (2003). According to the latter, the economic crisis before this period and the increasing trade openness contributed in making informal activities in this sector. Many actors have officially closed to practice in parallel markets because they are unable to compete with foreign high-quality products. Thus, nowadays, when questioned during surveys of this type, they declare having begun their activity for many years without interruption. After this statistical analysis, normality tests seem appropriate to justify the choice between logit and probit regressions for this investigation.

A Normality Test aimed at retaining either a Logit or Probit Regression

The normality test enables to know if the quantitative variables of the study being the ‘failure’ (difference in turnover compared to expenses during a period), ‘staff costs’ and ‘the investment level’ follow a normal law. If yes, the probit model will be retained. Otherwise, the logit model will be chosen. Three types of tests are commonly used: the Skewness/Kurtosis’s, the Shapiro-Wilk’s W and the Shapiro-Francia’s W' tests.). For all these tests, the null hypothesis assumes normality in data used. Due to their asymptotic nature, the most recent is conducted, that of Shapiro-Francia (D'Agostino, Balanger & D'Agostino Jr., 1990). Its results are presented in Table 2.

Table 2. *The Shapiro-Francia W' normality test*

| Variables | W' | V' | Z | Prob>Z |
|-------------|---------|-------|-------|--------|
| Failure | 0.83515 | 3.199 | 0.991 | 0.1092 |
| Investment | 0.78485 | 2.406 | 0.772 | 0.5321 |
| Staff costs | 0.78204 | 1.270 | 0.510 | 0.7212 |

Source: Operators’ Census in the Cotton/Textile/Confection Sector (INS, 2014)

The W' is the Shapiro-Francia test statistic and V' is called index for departure from normality. According to Royston (1993): - the median value of V' is 1 for sample from normal population, - large values indicate nonnormality, -the 95% critical value (Z) of V' , which depend on the sample size, is between 2.0 and 2.8, - there is no more information in V' than in W' ; one is just the transform of the other. In the case of this study, the V 's are very large for the three variables, the Z s are less than 2.0 and the P-values (Prob>Z) are not significant. In conclusion, the data used follow a normal distribution. This implies the use of the probit regression which will approximately provide exact results of the reality (Greene, 1997).

Seeking for business failure's causes in the Cameroonian textile sector

Table 3 presents the probit model's estimates under the STATA software. It appears that any company operating in this sector is subject to a failure risk of about 54.45%, differently explained through the selected factors. As far as economic factors are concerned, the fact for a company to spend less than 1 million CFAF annually for wages significantly reduces at 10% threshold, its failure probability by about 18.4%. On the other hand, those who spend between CFAF 1 million and CFAF 3 million and those above CFAF 3 million face an increase risk in their failure probability of 14.4% and 67.8% respectively. In the same vein, when companies make annual investments of less than 2 million FCFA, this leads to a reduction in their failure probability of 14.4%. Those investing between 2 and 5 million CFAF face a failure risk of 9.8%, while this risk is about 97.6 % for those who invest more than 5 million CFAF. This finding, combined with the high payroll costs, suggests that SEs operate in a non-mastered environment compared to VSEs which generally employ very few workers and mostly work in the informal sector (RGE, 2009).

Indeed, operating in the informal favors a decrease in operating expenses through the non-payment of taxes, rent, low investment level and poor salary treatment. This leads to low price setting, thus favoring these informal entities. This can also be seen in the above-mentioned table: firms setting lower prices than their main competitors experience a 37.8% lower failure risk, and those priced equal to their competitors have a lower failure risk of 5.8%. On the other hand, those who practice high prices face a 19.0% increase in their failure risk.

With regard to financial factors, findings show that receiving subsidies by a company significantly reduces its failure risk by 17.7%. Similarly, being built from equity reduces this risk by 12.3% and being created from governmental support or familial help decreases it by 4.7%. In contrast, if created from an associative or bank loan increases this risk by 6.1% and 17.8% respectively. This assumes that companies in this sector, especially those having received loans, have difficulties in generating surpluses in their activities so as to meet their operating and investment costs.

Implicitly, public support for investment as well as familial aids are catalysts for business growth in this sector. Also, actors with a high craze for their businesses are those who succeed in getting family and governmental aids by setting up viable projects. It is also noticed that associative and bank loans are more required by those with vocational training in the textile field. That's why, this training increases the failure probability by 10.1%. Also, they set high prices for their products as they increase this rate by 19.0%.

Talking about the contractors' features, having a professional training linked to one's job increases the failure risk because of the high prices they set. Having a higher educational level also significantly increases this risk by 55.6%. This can be explained by that there is a high proportion of entrepreneurs with textile-related vocational training among those with a high educational level. On the other hand, actors with primary or secondary educational level experience a decrease in their failure risk of 35% and 20.8% respectively. This finding implies that they themselves set lower prices for their products. This assumes they are mostly trained on the job and did not spend enough money on their training so as to recover these investments by setting high prices. They also employ very few workers and mostly work in the informal sector.

Table 3. *Estimates of the Failure Function of Firms in the Textile Industry*

| Dependent Variable : Failure occurrence or not | | Regression Coefficients | Marginal Effects |
|--|--|-------------------------|-------------------|
| Explanatory Variables | | | |
| Dimensions | Determinants | | |
| Economic and Financial features | Staff costs during 2013 | | |
| | -[0- 1 million [| -0.468 (0.257)* | -0.184 (0.099)* |
| | -[1-3 million [| 0.368 (0.246) | 0.145 (0.096) |
| | -Above 3 million | 1.987 (0.355)*** | 0.678 (0.087)*** |
| | Investment level during 2013 | | |
| | -[0-2 million [| -0.364 (0.260) | -0.144 (0.101) |
| | -[2-5 million [| 0.237 (0.249) | 0.094 (0.098) |
| | -Above 5 million | 4.55 (0.512)*** | 0.976 (0.016)*** |
| | Prices set compare to main competitors | | |
| | -High | 0.487(0.255)** | 0.190 (0.097)** |
| | -Equal | -0.145 (0.242) | -0.058 (0.096) |
| | -Low | -0.989 (0.277)*** | -0.378 (0.098)*** |
| | Has received grants during 2013 | -0.450 (0.276)* | -0.177 (0.107)* |
| | Main funding source at creation | | |
| | - Personal funds | -0.311 (0.252) | -0.123 (0.099) |
| -State or family supports | -0.119 (0.257) | -0.047 (0.102) | |
| -Associative loans | 0.154 (0.243) | 0.061 (0.096) | |
| -Bank loans | 0.455 (0.247)* | 0.178 (0.095)** | |
| Entrepreneur's features | Has received vocational training in the field | 0.255 (0.249) | 0.101 (0.098) |
| | Entrepreneur's educational level | | |
| | -Primary or not | -0.088 (0.270) | -0.035 (0.107) |
| | -Secondary | -0.533 (0.257)** | -0.208 (0.098)** |
| | -Tertiary | 1.553 (0.357)*** | 0.556 (0.104)*** |
| | Experience in business management | | |
| | - Less than 10 years | 1.959 (0.379)*** | 0.067 (0.093) |
| - Above or equal to 10 years | -0.078 (0.249) | -0.031 (0.098) | |
| Business features | 1 In constant percentage on the cost price or according to competitors' prices | 0.286 | 0.02086 |
| | 2 Through professional association | 0.187 | 0.01905 |
| | 3 Through bargaining with customers | 0.527 | 0.22532 |
| | Creation date before 2000 | -0.029 (0.239) | -0.011 (0.095) |
| | Structure type | | |
| | -Spinning, Weaving/ knitting, finishing, crocheting, making, fashion | -0.323 (0.268) | -0.127 (0.105) |
| | -Distribution, haberdashery | 0.019 (0.250) | 0.007 (0.099) |
| Hold a taxpayer number | | | |
| -Yes (formal market) | 0.756 (0.249) | 0.030 (0.098) | |
| -No (informal parallel market) | -3.977 (0.676)*** | -0.923 (0.042)*** | |
| Log likelihood | | -77.089529 | |
| Failure occurrence probability | | | 0.54451212 |

Source: Census of Operators of the Cotton/Textile/Confection Sector (INS, 2014). *** Significant at 1% threshold, ** 5% threshold and *10% threshold. Values in parentheses are standard deviations.

Still referring to the entrepreneurs' features, it should be noted that those with less than 10 years professional experience in business management are exposed to an increased failure risk of 6.7%. On the one hand, those with more than 10 years manage to reduce this risk by 3.1%. Also, those who set their prices as a constant percentage on the cost price and according to competitors' prices manage to reduce this risk at 90.5%, whereas those whose prices are set by their professional association slightly reduce it at 00.4%. On the other hand, those who set prices through bargaining with customers see their failure risk increase by 5.4%.

Finally, as far as business characteristics are concerned, those created before 2000 reduce their failure risk by 1.1%. These are companies which experienced crisis in the textile industry in the 1990s and early 2000s. This may imply that they mostly operate in trades as spinning, weaving/knitting, finishing, hosiery, clothing and fashion. Indeed, companies practicing these trades manage to reduce their failure risk by 12.7%. On the other hand, those engaged in the distribution of textile products and haberdashery do not succeed in reducing this risk, but suffer an increase of 0.7%. Similarly, those working in the informal sector can significantly reduce this risk by 92.3%, while those in the formal experience an increase of about 3.0%. In view of this finding, we can see that most very small and small enterprises in the textile field with good economic outcomes are those operating in the informal sector.

Discussion of findings

Some results corroborate those already met in literature while others differ. Economic factors (staff costs and investment levels) do not affect the various agents' satisfaction who spend less in this sector. This contrasts with the conclusions of Yemene (2012), Nkouka, Zamo & Bitemo (2013), Nembot (2014), Etéki (2014) and Mandjem (2015) who believe that developing countries should not yet open up to international competition because of their fragility and inability to finance innovation. It can be concluded that these small entrepreneurs have a good mastery of markets where their products are conveyed, the expenditures' levels to be made as well as distribution channels allowing them to make profits. However, this conclusion must be taken with more caution.

In fact, about half of the sampled companies make less operating expenses (48.6% spend less than 1 million CFAC in staff costs and 51.2% less than 2 million CFAC in investments: table 1). In this case, a large proportion of firms in the textile sector, especially those making significant investments to face international competition are displaced by foreign firms. Thus, unlike authors as Chambolle & Mignaval (2008), openness to international competition compromises the success of companies with large investments in textile activities. Implicitly, globalization is not a way to reduce production factors' costs higher for these companies. Therefore, it can be partly agreed (Lecerf, 2007; Yemene, 2012; Mandjem, 2015) that companies in underdeveloped countries should not yet open up to international competition. In fact, they use unsophisticated technologies and equipment (CCIMA, 2003) and set high prices compared to their competitors and in line with their operating expenses.

As concerns financial factors, the lack of financial deepening stands as a hindrance on entrepreneurship's development in the textile industry. In fact, business success is compromised through obtaining associative and bank loans. This implies high repayment interest rates. This finding corroborates those presented in the report on the textile sector produced by the CCIMA (2003), and that written within operators' census framework by the National Institute of Statistics (INS, 2014). It is perhaps due to the lack of financial deepening that subsidies granted to this small proportion (21.4%) of companies manage to reduce their failure risk.

Finally, with regard to the entrepreneur's or firm's features, contrary to investigations (Yemene, 2012; CCIMA, 2003; INS, 2014) which recommend professional training as an effective strategy for the supply of high quality textile products, this study shows that having a job-related education and a high educational level does not reduce the failure risk. On the other hand, entrepreneurs with a primary and secondary educational levels succeed in reducing their failure risk. They mostly exercise in the informal and set unbeatable prices. Most of them are equally owners of the oldest VSEs and SEs which highly succeed in minimizing their failure risk.

Conclusion and policy recommendations

This chapter aims at identifying factors deteriorating business performance in the textile industry and causing its failure. After reviewing studies on business failure issue, a probit model chosen and based on a normality test revealed some factors explaining the failure of Cameroonian firms in the textile sector. This model provides a failure rate of about 54.45%, explained by high cost prices as suggested by Lecerf (2007), Yemene (2012) Mandjem (2015), pricing sales' method, exercising one's business formally, having a professional training in relation to the activity carried on or having pursued higher education, contrary to investigations carried out by Yemene (2012), the CCIMA (2003) and the National Institute of Statistics (INS, 2014). As far as economic and financial factors are concerned, companies spending between 1 million and 3 million CFAF and those above 3 million CFAF in terms of wage costs face an increase in their failure probability of about 14.4% and 67.8% respectively. Similarly, a company created from associative or bank loans increases this risk at 6.1% and significantly at 17.8% for the second case. With regard to the characteristic factors of the entrepreneur and/or that of the company, it must be highlighted that the entrepreneur with a professional training related to his/her trade increases the failure risk of about 10.1 % due to high prices he/she sets. Likewise, firms operating in the formal sector experience an increase in their failure risk of about 3.0%. On the other hand, those working in the informal sector manage to significantly reduce this risk by 92.3%.

To eradicate the causes of this failure, recommendations go in line with strengthening supply capacities, by granting subsidies to companies who dare open up to competition, developing export capacity through the effective implementation of a governmental upgrading policy towards textile companies in order to enhance products' competitiveness in the domestic and export markets, implementing tax and institutional reforms likely to encourage informal companies to lawfully operate so as to fight against their unfair prices.

The outcomes of this survey lead us to take a closer look on more conceptual works on the functioning of Small and Medium size Enterprises in developing countries as a whole and Cameroon

particular. Extending findings to specific features of the textile industry compare to other SMEs in the Cameroonian corporate landscape could be an interesting research avenue. The setting up of a textile industry, its size, its management as well as the corporate reputation are equally interesting research topics. Lastly, future investigations could also examine the outcomes' impact of this sector on Cameroon's economy as well as on populations' well-being despite their preference for foreign brands.

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3 African migrants and remittances. Impact on growth and development of their home countries

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Introduction

Each year, Africa loses many of its most skilled workers to the benefit of the Northern countries. According to Kouarné (2000), this phenomenon, described as a brain drain, does not date from today. It goes back to independence. It has been intensified over the past decade with an average loss of 20,000 professionals per year (See Table A.1 in the appendix). It is a great concern in home countries, especially as host regions now seem to make every effort to encourage skilled immigration.

The loss of the most skilled labour force from African countries could nonetheless be offset by remittances sent by these professionals to household or community members in their native countries. Indeed, remittances represent the second largest source of external financing for developing countries, after foreign direct investment and public developmental aids (Ratha, 2003). In a context of aid declining trends and the absence or failure of

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production and credit markets for local production structures, funds from migration can help finance local activities and contribute to develop countries providing migrants.

The effects of international migration in terms of economic development in migrants' countries of origin remain ambiguous. Migration is recognized as a selective process. The most educated and dynamic are those who decide to migrate. It is questionable whether remittances from migrants can actually fill the resulting deficit. They could lead to dependency, enabling households to specialize in migration instead of using the money to invest in local productive projects.

This investigation examines the impact of remittances from African migrants on their countries of origin. The objective is threefold: We will first make an inventory of the importance of emigration in Africa. Secondly, the scale and determinants of remittances from African migrants will be highlighted and thirdly, the impact of these funds on the growth and development of their home countries will be examined.

Migration: Some key elements

According to the United Nations' data, the number of international migrants has generally increased by about 14% between 1990 and 2000, from 154 to 175 million. As concerns Africa, the number of migrants virtually remained stable over the same period: 16.2 million in 1990 and 16.3 million in 2000².

Lucas (2005) believes that one of the defining features of international migration in Africa lies in its extreme instability over time. As a matter of fact, several African countries alternate between immigration and emigration regions. Table A.2 in the appendix shows the five-year net migration rates for the 1975-2000 period. Although sub-Saharan Africa as a whole has experienced net migration during this period, there are some particularities depending on countries. In Cameroon for instance, the net migration rate is positive between 1975 and 1980, and between

²Cameroon is the home country of 1,434 among the 95,153 migrants with tertiary education residing in the United States in 1990 (Carrington & Detragiache, 1998 quoted by Kouamé, 2000).

1980 and 1985 (1.45 and 0.46 respectively). However, it is negative between 1985 and 1990, and 1990 and 1995 (-1.05 and -0.08 respectively), and zero between 1995 and 2000. The relatively favourable economic and socio-political situation of the country between 1975 and 1985 seems to be a limiting factor for the departure of its nationals. However, it favoured the arrival of foreigners, especially from neighbouring countries. Between 1985 and 1995, it was a period of economic crisis and political jousting (early 1990s). This phase was somehow featured by the incentive of Cameroonians to leave the country, hoping to find better life elsewhere. Finally, between 1995 and 2000, with the slight economic recovery and a decline in social tensions, not to mention the policies applied by most host countries to fight against immigration, many people found it better to stay in their country.

According to Docquier & Marfouk (2004), migration rates have slightly changed in most African countries, while they have considerably increased in Latin America.

This study is most focussed on African migrants to the OECD countries account for about 25 percent of the total migrant population according to the World Bank. In 2000 and in line with Table A.3, there were 2.8 million migrants from sub-Saharan African countries to those of the OECD (about 0.45% of the overall original population). This proportion is low compared to other regions of the world as Asia which has the highest stock of migrants.

The African countries with the highest absolute numbers of migrants in the OECD countries in 2000 were South Africa, Nigeria, Kenya and Angola, with more than 190,000 migrants. Cameroon is far behind with 57,050 migrants. Moreover, outside Lesotho, the number of migrants from all the other countries listed in Table A.3 has increased between 1990 and 2000. Migrants mostly settle in former metropolises. Thus, those from French-speaking African countries settle in France, while nationals from Anglophone African countries settle in England or in USA. Cultural reasons are often mentioned. Language for instance allows migrants to be quickly integrated in their host countries.

Populations 'migration in developing countries mainly concerns the most skilled. According to Page & Plaza (2005), Latin

America and Africa are two regions of the developing world where the highly skilled professionals reside in developed countries. The number and proportion of the most qualified Latin American and African populations living in the OECD countries are provided in Table A.4. As concerns Africa, it appears that South Africa and Nigeria have the highest numbers of skilled migrants, in both absolute and relative values. Despite the low absolute value of the most skilled migrants in Africa, their proportion relative to the total number of migrants to the OECD countries is higher than in Latin America. According to Adepoju (2002), the most skilled migrants - doctors, teachers, engineers, researchers - have higher wages and better living conditions elsewhere³.

Globally speaking, most of the sub-Saharan African countries lose a significant share of their skilled labour every year. This situation is further accentuated by the host countries' current immigration policy which favours the integration of the most skilled migrants. In fact, in response to the growing shortage of skilled workers, many host countries have attempted to shift the focus of their immigration policies, with the aim of promoting the recruitment of highly skilled workers (Faini, 2007). This new turning point in immigration policies has become a source of considerable concern in traditional migration countries who fear losing their full productive potential.

However, some authors believe that the loss of highly skilled labour from migrant-sending countries is offset by remittances from the concerned to their families.

Remittances and economic situation

In recent years, remittances have been more closely examined by academics, policymakers, migrant associations and some financial institutions. For instance, the latest Global Economic Prospects report published by the World Bank at the end of 2006 was entirely devoted to the economic implications of remittances

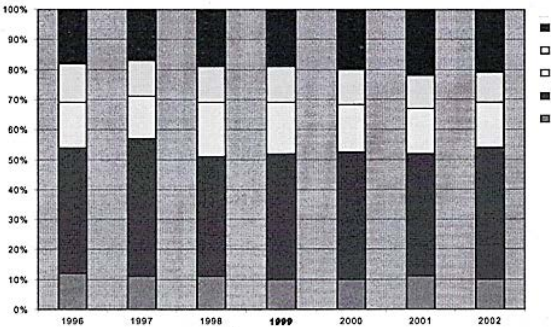
³World Bank (2006).

Ch.3. African migrants and remittances. Impact on growth and development... and migration⁴. In this section, we will stress on the extent of remittances from African migrants, analyze their determinants and study their economic impact on migrants’ home countries.

The Importance of Remittances in Africa

The renewed interest in remittances can be explained by the increasing volume of official financial transfers to low-income countries, and by their potential influence on recipient countries’ development. According to the World Bank estimates, developing countries have received official remittances amounting to \$ 251 billion in 2007. This figure represents an increase of about 11% compared to the amount received in 2006, and 29% compared to that of 2005⁵.

It goes without saying that the share of the various regions in this total varies. While the Diasporas of Latin America and the Caribbean, as well as those of South Asian sent \$ 61 billion and \$ 44 billion respectively to their home regions, the Diasporas of sub-Saharan Africa have barely officially transferred \$ 12 billion (Ratha, 2008).



Graph 1. *Transfer of funds to developing countries by region 1990, 2002*

Source: IMF, Balance of Payments’ Statistical Yearbook

⁴See table A.5 in the appendix

⁵It should be noted, however, that this ranking changes when assessing migrant remittances as a percentage of the GDP. In this case, Losotho comes first with transfers estimated at 25% of the GDP, followed by Gambia and Cape Verde with 12.5% and 12% respectively.

Graph 1 shows a better view of the distribution of migrant transfers in different regions of the world. We note that these funds are not evenly distributed. In this regard, Asia is the most solicited destination. From 1996 to 2002, 40 to 46 percent of annual transfer flows are in Asia. Next come Latin America and the Caribbean with 17 to 22%, Eastern Europe with 15 to 18%. Lastly, Africa comes with 10 to 12% of transfer flows. This result is not surprising since Asia is the most populous region of the world with the largest diaspora on the planet.

Looking at the absolute value of remittances by country in sub-Saharan Africa, Ratha *et al.*, (2008) estimate that the top ten countries which benefited from these transfers in 2007 were Nigeria (\$3.3 billion), Kenya (\$1.3 billion), Sudan (\$1.2 billion), Senegal (\$0.9 billion), Uganda (\$0.9 billion), South Africa (\$ 0.7 billion), Lesotho (\$ 0.4 billion), Mauritius (\$ 0.2 billion), Togo (\$ 0.2 billion) and Mali (\$ 0.2 billion)⁶.

Table 1 shows that migrant remittances to sub-Saharan Africa have steadily increased since 1990. However, in contrast to all developing countries, their annual amounts in this period remain lower than other types of international financing, especially Official Development Assistance and Foreign Direct Investment. In some countries - Botswana, Ivory Coast, Lesotho, Swaziland, Togo and Mauritius - remittances, however, were higher than official development assistance. In Lesotho, Swaziland, Mauritius and Togo, these funds were also higher than foreign direct investment (Ratha *et al.*, 2008).

⁶Since 1996, pS-Eau has been providing the secretary in France / support and reflection service of the Local Development Migration Program (LDMP), a public support system for reintegration through the creation of economic activities in Senegal, France, Mali and Mauritania. Partnerships established in the North and South and actions carried out in this framework since 1996 have enable to define the objectives and the content of the Economic Initiatives and Migration Program, which opened to creation in France and in both areas.

Table1: *Financial flows to sub-Saharan Africa (in billion of dollars)*

| Year | 1990 | 1995 | 2000 | 2005 | 2006 | Variation 2000-06 (%) |
|--------------------|------|------|------|------|------|-----------------------------|
| Types of flows (1) | | | | | | |
| ODA | 17 | 17.8 | 12.2 | 30,8 | 38,2 | 213.11 |
| FDI | 1.1 | 4.5 | 6.8 | 19,3 | 17,1 | 151.47 |
| PI | 0.4 | 3 | 4.2 | 7.4 | 15.1 | 259.5 |
| R | 1.8 | 3.2 | 4.3 | 8.8 | 10.3 | 139.5 |

(1) Four types of flows were identified; ODA = Official Development Assistance; FDI = Foreign Direct Investment; PI = Portfolio Investment; R = Remittances. Source: From the Table provided by Ratha et al. (2008); Global Development Finance database, Tuesday, 2008

These figures do not include non-registered remittances. Indeed, money can be sent through informal channels (friends or families), Non-Governmental Organizations (NGOs), religious missions and the like. In countries with dysfunctions in the formal financial system like most poor countries, informal channels are often the only way to transfer money. As a result, informal remittances may exceed those officially registered (De Bruyn & Kuddus, 2005; Maimbo & Ratha, 2005).

In developing countries in general and sub-Saharan Africa in particular, remittances from migrants are therefore an external source of steadily rising capital. If foreign direct investment and capital flows have drastically dropped in recent years due to recession in high-income countries, remittances by migrants have continued to increase. At the beginning of the 1980s, the importance of these transfers was already recognized to offset the loss of human capital in developing countries due to migration (Faini, 2007). The question then is whether this compensation is "pure". In other words, if skilled migrants send more money than low-skilled ones.

Do skilled migrants send more funds?

According to the World Bank (2006), *"the brain drain negative effects are to some extent offset by remittances from migrant workers"*. Some investigations establish a positive relationship between migrants' qualification level and the amount of funds sent. In other words, the volume of remittances from migrant workers tends to

increase with their skills' level (Johnson & Whitelaw, 1974), Rempel & Lobdell (1978) quoted by Faini (2007). However, not all empirical research confirms this relationship. The unfinished literature leaves many unanswered questions. First, the empirical results are mixed. Rodriguez & Horton (1994) quoted by Faini (2007) show that in Philippines, migrants' qualification level has no impact on the amount of funds transferred. Secondly, according to Faini (2007), it is possible that skilled workers are from wealthy families with high educational level, and that the incentives to send money are therefore lower. Finally, they may spend more time abroad, either because they are more inclined to gather their families in the host country, or because they have less difficulty in doing so. Indeed, a characteristic result of literature is that transfers tend to decline with the duration of migration (Lucas & Stark, 1985). Therefore, even a positive educational impact on the amount of remittances cannot be an evidence that brain drain is associated with huge transfers. The direct qualifications' impact can actually be positive, but the overall impact, which takes into account the fact that skilled migrants tend to stay abroad for a long time, may be negative as well.

While focusing on the change in the composition of migration made up of more skilled migrants with higher wages, Faini (2006) finds that high salaries have two contradictory effects on funds' transfer to the home country:

(a) a "salary" effect where higher remunerations are associated with huge transfers to those who remain in the country;

b) a "clustering" effect where higher wages allow migrants to gather their immediate family members, which has a negative impact on the amount of transfers. The overall impact of a more skilled migration on transfers is therefore an empirical issue. Generally speaking, the results of the above author suggest that a more skilled migration is correlated with smaller transfers.

Determinants of remittances

The level of remittance flows made by a migrant depends both on his/her potential (that is, on his/her income and savings) and his/her motivation to repatriate his/her savings in his/her home country. Of course, the willingness to make these transfers also

depends on the time to spend during migration (how long do migrants intend to stay abroad - temporarily or permanently?), on migrants' familial status (single, married, with or without children) and network effects (do they migrate alone, accompanied by their families, are they still connected to those left behind?).

One of the methods of studying the determinants of transfer flows is to analyse migrants' key motives when sending money. Research on the issue distinguishes between pure altruism, mere self-interest and unspoken arrangements with the family left behind in their country of origin. As Stark (1991) points out, there is no general theory as far as remittances are concerned. Investigations on this phenomenon provide valuable descriptive data as well as empirical research results, but it is partially explained, and these studies have a number of limitations.

Pure Altruism

One of the most intuitive motivations for sending money back to the home country is what investigations on the issue call "altruism"; in other words, the migrants' concern for the well-being of their families in their native countries. According to the altruistic model, the migrant is satisfied with the idea of the well-being of his/her parents.

The utility function of the altruistic migrant can be represented according to Faini (2007) by:

$$U = U(C_M, C_F) \quad (1)$$

Where C_M and C_F are the respective consumption levels of the migrant and his/her family members who remain in the country. There are two budgetary constraints: that of the emigrant

$$C_M = Y_M - R_M \quad (2)$$

Where Y_M represents the migrant's earnings and R_M the transfers; and that of the family members in the home country:

$$C_F = Y_F + R_F \quad (3)$$

Where Y_F represents the family income and R_F the amount of transfers received. We suppose that $R_F = R_M$, in other words, the amounts sent and received are equal.

By substituting budgetary constraints (equations 2 and 3) in the objective function and by maximizing with respect to R , we obtain the condition of first order:

$$U_M(C_M, C_F) = U_F(C_M, C_F) \quad (4)$$

Where U_i is the marginal utility relative to C_i ($i = M, F$). Therefore, at the optimum, the marginal utility of C_M must be equal to that of C_F . This framework can be used to assess the impact of Y_F variation on transfers. Assuming that transfers remain constant at the outset, a decline in Y_F leads to a decrease in C_F and an increase in the marginal utility of family consumption (U_F). To restore balance, transfers should therefore increase.

This model is based on several assumptions. First, the amount of transfers is supposed to increase along with the migrant's income. Second, this amount should decrease as family income increases. Third, the amount should decrease over time as family ties become more distorted. It should be the same when the migrant permanently settles in the host country, and the members of his/her family come to join him/her. Empirical evidence for Botswana corroborates the first argument. An increase of 1% in the migrant's salary implies, all other things being equal, an increase in the amount of transfers ranging from 0.25% to 0.73% for low and high wages respectively. However, after finding that the correlation between the level of transfers and the income level in the home country is insignificant, it can be concluded that altruism alone is not enough to explain the motivations for making transfers, at least as concerns Botswana (Lucas & Stark, 1985).

Simple Personal Interest

Remittances to family members in the native country may have another reason, that of the migrant's personal interest. First, a migrant can send money to loved ones while thinking about the inheritance, as long as bequests are subordinate to heirs' behaviour. Second, owning property in one's home country can

encourage the migrant to send money to parents living there so as to make sure that the caregivers do the right thing. Empirical data from Kenya and Botswana show that the beneficiary parents feel better as the share of salary transferred by the migrant is huge (Hoddinott, 1994; Lucas & Stark, 1985). However, it is unclear whether the reason is the inheritance prospect or the concern to see parents take care of the property belonging to the migrant. Third, according to Stark (1991), the intention to go back to one's country may also push the migrant to transfer funds in order to invest in real estate, financial assets and public goods (which will enhance his/her prestige and political influence within the local community), and/or in social capital (relationships with family and friends for instance). This is particularly the case for most workers from the Cameroonian western region living abroad, who increase their remittances as their final return back to their home country is approaching.

Tacit family arrangements: co-insurance and loans

Arrangements made by households, especially within the extended family, may be considered more complex in reality, and certainly more balanced than in the case of the two extremes, pure altruism and simple self-interest. For instance, Lucas & Stark (1985) explain the motivations for transferring funds, using a model called "temperate altruism". In this model, the decision to make transfers falls within a family context, these transfers constituting an endogenous aspect of the migratory process. If we look at the household as a whole, remittances should be a mechanism for redistributing earnings. Two main sources of potential gain are taken into account: the dilution of risks and investment in young family members' education. In this context, the arrangement within a family is considered an "implicit co-insurance agreement", or an "implicit family loan agreement". This tacit contract between the migrant and his/her family is protected from the break-up by familial own assets being credit and loyalty, but also, by the purely migrant's personal motives as the idea to inherit, invest in his/her home region in property that the family will take care of, and the intention to go back to his/her country with dignity.

In the implicit co-insurance model, it is assumed that initially, the migrant plays the role of an insured, and the family in the home country that of the insurer. The family finances the initial cost of the migration project which, in most cases, represents a significant amount. In a second phase of the migration process, the migrant him/herself can also play the role of the insurer for his/her family members in the native country. It is assumed that this is possible if the migrant already has a secure job, earns a high enough wage and intends to increase his/her income. By receiving the money transferred, the family has the opportunity to improve their consumption, embark on investment projects with much greater risks and thus make themselves much more useful. Evidence from Botswana shows that families with the most livestock receive much more cash transfers during drought periods (Lucas & Stark, 1985).

The impact of remittances on home countries' economies

The impact of migration transfers on the development of migrants' native countries is controversial. If there is any consensus, it is on that these transfers represent, on the macro-economic scale, a non-negligible source of currencies. They could also have a significant impact on the well-being of individuals and households concerned, but also, on the economic development of their home countries as a whole.

Improving families' living conditions

Transfers can cover, to a greater or lesser extent, families' consumption needs whose cash income is often low and unstable in their country. By increasing incomes and diversifying their sources, migrants' money helps to improve families' daily lives and deal with crisis situations as drought or famine. Savina Ammassari (2005) conducted a study of 340 Ghanaians and 300 Ivorians who came back from abroad and settled in their respective metropolises. In line with this investigation, migrants reported that the sums transferred were most frequently used to meet family needs. In particular, 84% of Ivorians and 75% of Ghanaians primarily used them to take care of their families. In

fact, several studies in Africa corroborate this result and underline the critical importance of these resources for migrant households, not only in times of crisis, but also, in ordinary moments.

A Ghanaian migrant to London explained that the 100 pounds he sent each month to his parents were used to take care of the latter, pay for electricity and water bills, public transport and other daily expenses.

There is some consensus that remittances help reduce poverty. For instance, Adams & Page (2003) estimate on a sample of about one hundred countries, that a 10% increase in remittances per capita is followed by a 3.5% drop in poverty rate. Although these results are questionable, several microeconomic studies using household surveys point in the same direction. In Egypt, the number of poor rural households declined by 10% when remittances were included in their incomes, which account for almost 15% of their total income (Adams, 1991). Remittances could help reduce poverty by 11 percentage points in Lesotho (from 63% to 52%), 11 points in Uganda, 6 points in Bangladesh and 5 points in Ghana (Adams, 2005). Lachaud (1999) shows that remittances in Burkina Faso contribute in reducing the incidence of rural poverty by 7.2 percentage points, and urban poverty by 3.2.

Transfers can also be a form of insurance against uncertainties. The New Economics of Labour Migration (NELM) takes into account the specificities of the departure zones, essentially rural, as well as the constraints and risks weighing on these populations. Given the virtual absence of insurance or credit markets in most sub-Saharan African rural areas, migration funds provide a form of protection, insurance against uncertainties and precariousness of populations residing in these areas (Daum, 1998). This money can also make it easier for family members and relatives to access essential basic services as health and education. Serving as a safety net and offsetting (in part) the lack of a social protection and insurance system, these funds contribute in reducing poverty and strengthening people's capacities to participate in the developmental process.

There is also a close relationship between money transfers and income distribution. In empirical assessments, most investigations in line with the impact of remittances on income distribution use

the Gini index. Studies show that remittances have accentuated the inequalities measured by this index. One of the main reasons for this fact is that wealthy families are more able to pay international migration's costs than others. For instance, data collected in Egypt show that despite poverty reduction (because a great number of poor households actually benefit from money transferred), remittances have increased income inequality ([Adams, 1991](#)).

Investment Achievements

Remittances can be earmarked for investments, specifically for projects in home countries which interest may be strictly private (building or acquisition of housing, creation of small businesses, trade, etc.) In this case, migratory incomes stimulate local economic activity and thus growth, and somehow replace loans and other financing modes very often inaccessible to the poor populations and less adapted to their needs. By loosening the particularly strong financial constraint in rural areas, these incomes enable to invest in new activities or techniques favourable to an increase in agricultural productivity. In Botswana, Malawi or Zambia for instance, there is an undeniable link between savings' transfer and improvements in rural areas, particularly in irrigation ([Daum, 1998](#)).

Migrants from the Kayes region (Mali) are main actors in local development through village associations. They are being attributed 60% of infrastructures in the region. The Malian community is perfectly structured on the organizing model of villages. The village chief has his representative among the migrants, and each association created in France is copied on the hierarchical structure and the social order of the village ([Penent, 2003](#)).

The Economic Initiatives and Migration Programme (EIMP), implemented since 2001 by the NGO pS-Eau, aims to support the economic projects of migrants from sub-Saharan Africa and North Africa: projects resettlement in their home countries, remote investment and creation projects in France. This program runs a network of a dozen support operators (the Business Creation Support Group). The "Remote Investment" scheme allows migrants to use their savings as a guarantee for loans to start an economic

activity in their country of origin. For the migrant, it is about securing economic investments in Senegal or Mali (these investments are both an alternative to financial transfers for consumption, and a complement to the social investments of associations). For the Senegalese or Malian promoter relative to the migrant, it is a facilitated access to the financing of an economic activity. For the banking organization, it is a "new product" and a specific service to offer to migrants. This type of investment meets the expectations of migrants living generally with their families in France, and benefiting from a stable family and professional status. It concerns migrants with available savings who wish to invest in an economic activity rather than making recurrent transfers for family consumption.

It should be noted that if, in the right circumstances, a significant percentage of remittances can be allocated to productive companies, one may still wonder why such savings' orientation only occurs in some communities. According to Massey *et al.* (1993), it is clear that factors behind peoples' migration are also very often those limiting the productive potential of remittances. Thus, the lack of public services or the poor state of infrastructures seriously limit the "productive" potential of remittances. Many migration areas in poor countries are villages far from markets which lack basic infrastructure. Migration is likely to have a greater impact on development where a minimum of conditions are met thanks to the intervention of local institutions, and when the migrant is not expected to play alone the roles of worker, saver, investor and producer.

Remittances can also have negative effects depending on how they are used. Among these effects, one often quotes the predominance in migrants' families, of the consumption logic on that of accumulation. The satisfaction of new consumption habits usually implies an increase in imported goods⁷.

Similarly, the review of empirical studies of developing countries by Gubert (2000, 2001) shows that if there is no doubt on the importance of transfers in households' income, their impact is quite different on agricultural production and productivity. In

⁷Peoples in developing countries in general and Africa in particular are extremely influenced by Western lifestyles and habits.

some cases, remittances compensate the loss of labour force resulting from migration by allowing the hiring of agricultural workers and equipment acquisition. In others, transfers are bad for agriculture as they provide families with the opportunity to maintain the same income level while reducing their labour supply. Such a phenomenon, which can be described as annuitant, is followed by a contraction in agricultural production. In the case of the Kayesregion in Mali, data show that despite a better endowment of agricultural equipment, families participating in international migration significantly reach lower production levels than those obtained by families without migrants, and this without the result being attributable to the lack of manpower (Gubert, 2000).

Conclusion

African migrants' behaviours on remittances to their country of origin reflect their commitment in improving the economic and social situation of those left behind. These transfers constitute a very important capital source for African countries. They have been steadily increasing since 1990. However, in contrast to all developing countries, their annual amounts are still lower than those of other types of international funding, especially the Official Development Assistance.

Remittances to home countries are often underestimated, as money can be sent through informal channels. In countries with dysfunctions in the formal financial system like most poor countries, informal channels are often the only way to transfer money. As a result, informal remittances may exceed the volume of officially registered ones. The reduction of transfer costs is likely to increase the amount of money transferred by migrants, and also allow the use of formal channels.

The question we wanted to answer in this study was whether funds transferred have a positive impact on the development and economic growth of migrants' home countries.

Empirical studies suggest that the economic impact of remittances remains ambiguous. In addition to their direct impact on the economies of migrants' homecountries (reducing poverty, reducing foreign exchange shortages, productive investment, etc.),

transfers also have positive indirect effects. They attenuate capital and risk constraints, facilitate the release of other investment resources and have a multiplier effect on consumer spending.

Nevertheless, remittances are not a panacea and cannot substitute the sound economic policies in developing countries. On the other hand, if the economic context pushes for migration, the impact of transfers on the development of the migrant's home regions is lessened. The best way to maximize the positive effects of remittances on growth in African countries will be to apply models of sound economic management and developmental strategies involving all economic actors. These controversies suggest that much empirical research still needs to be conducted to highlight the actual effects of remittances in each particular economic context.

Generally speaking, the main issues currently being addressed are the different measures to be taken to improve the developmental impact of remittances. Four are taken into account:

Firstly, migrant associations must be involved in strategic initiatives in remittances' field and work collaboratively with public authorities and NGOs.

Secondly, the capture of related financial flows by the traditional banking system and microfinance institutions should be encouraged.

Thirdly, host countries must provide undocumented migrants with access to official remittances' channels.

Fourthly, it is necessary to increase the managerial efficiency of these funds by targeting them towards the realization of profitable projects rather than devoting them entirely to household consumption.

Appendices

Table A. I. *International migrants by region of destination in million, 1960-2000*

| Year | 1960 | 1970 | 1980 | 1990 | 2000 |
|--------------------------------------|------|------|------|-------|-------|
| Region | 32.1 | 38.3 | 47.7 | 89.7 | 110.3 |
| Developed nations | 29.1 | 35.2 | 44.5 | 59.3 | 80.8 |
| Developed countries without the USSR | 43.8 | 43.2 | 52.1 | 64.3 | 64.6 |
| Developing countries | 9.0 | 9.9 | 14.1 | 16.2 | 16.3 |
| Africa | 29.3 | 28.1 | 32.3 | 41.8 | 43.8 |
| Asia | 6.0 | 5.8 | 6.1 | 7.0 | 5.9 |
| Latin America and the Caribbean | 12.5 | 13.0 | 18.1 | 27.6 | 40.8 |
| NorthAmerica | 2.1 | 3.0 | 3.8 | 4.8 | 5.8 |
| Oceania | 14.0 | 18.7 | 22.2 | 23.0 | 32.8 |
| Europe | 2.9 | 3.1 | 2.3 | 30.3 | 29.5 |
| Former USSR | 75.9 | 81.5 | 99.8 | 154.0 | 174.9 |

Source: United Nations $\hat{\imath}2\hat{\cup}031$

Table A. 2. *Net Migration Rates per thousand population: 1975-2000*

| | 1979- 1980 | 1980- 1985 | 1985- 1990 | 1990- 1995 | 1995- 2000 |
|-----------------------------|---------------|---------------|---------------|---------------|---------------|
| EasternAfrica | -1.09 | -0.65 | -0.11 | -8.60 | -13.02 |
| Burundi | -2.83 | 4.33 | -0.11 | -8.60 | -13.02 |
| Comoros | 5.68 | -2.14 | -1.83 | 0.00 | 0.00 |
| Djibouti | 56.77 | 5.65 | 38.49 | -10.95 | 6.57 |
| Eritrea | 0.00 | 0.00 | 0.00 | -22.42 | -0.23 |
| Ethiopia | 11.77 | 3.21 | 3.54 | 3.35 | -0.15 |
| Kenya | -0.04 | 0.04 | 0.05 | 1.74 | -0.15 |
| Madagascar | -0.71 | -0.17 | -0.13 | -0.09 | -0.04 |
| Malawi | -0.35 | -0.31 | 20.95 | -17.13 | -0.93 |
| Mauritius | -4.41 | -5.45 | -5.77 | -1.28 | -0.35 |
| Mozambique | 1.54 | -5.89 | -19.46 | 9.79 | 1.01 |
| Reunion | -9.54 | 0.72 | -0.62 | 2.68 | 2.45 |
| Rwanda | -2.18 | -3.96 | 0.48 | -57.56 | 61.49 |
| Somalia | 59.79 | -25.37 | -16.06 | -21.86 | 1.71 |
| Uganda | -2.70 | -1.56 | 3.11 | 1.44 | -0.60 |
| United Republic of Tanzania | -0.25 | 0.36 | 0.57 | 4.16 | -1.25 |
| Zambia | 0.19 | 1.51 | 0.85 | -0.16 | 1.74 |
| Zimbabwe | -3.08 | 3.74 | 2.71 | -3.28 | -0.25 |
| Middle Africa | 0.20 | -0.43 | -0.09 | 3.71 | -3.27 |
| Angola | 0.58 | 6.12 | -3.41 | 2.83 | -2.07 |
| Cameroon | 1.45 | 0.46 | -1.05 | -0.08 | 0.00 |
| Central African Republic | -0.09 | 3.25 | -2.94 | 2.38 | 0.64 |
| Chad | -5.37 | -3.41 | 1.53 | 0.63 | 2.73 |
| Congo | 0.00 | 0.11 | 0.18 | 1.05 | 2.60 |
| Democratic Republic Congo | 0.77 | -2.31 | 0.43 | 5.90 | -6.40 |
| Equatorial Guinea | -26.85 | 48.77 | 0.00 | 0.00 | 0.00 |
| Gabon | 6.17 | 5.31 | 4.53 | 3.88 | 2.43 |

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| | | | | | |
|-----------------------|--------|--------|--------|--------|-------|
| Sao Tome and Principe | -2.53 | 10.68 | -4.42 | -3.24 | -2.86 |
| SouthernAfrica | -0.05 | 0.73 | 0.39 | 0.25 | -0.26 |
| Botswana | -2.05 | -1.66 | -1.54 | -1.01 | -0.86 |
| Lesotho | -3.27 | -2.27 | -7.28 | -7.37 | -4.15 |
| Namibia | -9.16 | -5.39 | 11.78 | 0.46 | 2.27 |
| South Africa | 0.54 | 1.16 | 0.25 | 0.81 | -0.16 |
| Swaziland | -2.95 | 0.33 | 5.98 | -8.37 | -1.09 |
| Western Africa | 0.40 | -0.80 | -0.71 | -0.71 | -0.45 |
| Benin | -4.85 | -3.75 | -3.23 | 1.84 | -3.20 |
| Burkina Faso | -6.73 | -5.98 | -3.07 | -2.66 | -2.30 |
| Cape Verde | -17.37 | -11.11 | -10.10 | -4.65 | -2.42 |
| Cote d'Ivoire | 11.07 | 9.11 | 4.35 | 2.98 | 0.80 |
| Gambia | 7.29 | 7.01 | 10.53 | 8.78 | 7.42 |
| Ghana | -10.77 | 3.40 | -0.42 | 0.49 | -1.19 |
| Guinea | 1.55 | -1.52 | 2.45 | 10.41 | -7.18 |
| Guinea-Bissau | 17.45 | -0.04 | 0.35 | 3.63 | -1.68 |
| Liberia | 1.38 | 0.00 | -34.17 | -26.51 | 35.89 |
| Mali | -5.25 | -5.81 | -5.65 | -5.37 | -5.10 |
| Mauritania | -1.28 | -1.88 | -3.15 | -1.36 | 0.80 |
| Niger | -0.71 | -0.81 | -0.52 | 0.12 | -0.12 |
| Nigeria | 2.87 | -1.94 | -0.23 | -0.21 | -0.18 |
| Senegal | 0.78 | 0.35 | 0.00 | -1.79 | -1.13 |
| Sierra Leone | 0.00 | 0.00 | 3.29 | -18.68 | -5.19 |
| Togo | -8.36 | 3.64 | 0.06 | -6.67 | 6.06 |

Source: UN population, Division, Dept of Economic and Social Affairs, World population prospects: 2002 Revision.

Table A.3. *Migrants from Sud-SaharanAfrica to the OECD Countries*

| Migrant in OECD Stock increase 1990-2000 | | | | | |
|--|--------------------------|-------|--------------------------|-------|-----------------------|
| | Per 1000 Home Population | | Per 1000 Home Population | | Percent of 1990 stock |
| EasternAfrica | 1,060,496 | 4.20 | 285,351 | 1.28 | 53.4 |
| Burundi | 10,095 | 1.61 | 3,654 | 0.62 | 110.5 |
| Comoros | 17,723 | 25.14 | 6,484 | 10.53 | 182.2 |
| Djibouti | 5,359 | 8.05 | 851 | 1.42 | 108.0 |
| Eritrea | 35,127 | 9.46 | | | |
| Ethiopia | 113,938 | 1.74 | 38,347 | 0.67 | 57.0 |
| Kenya | 197,445 | 6.46 | 47,738 | 1.76 | 38.1 |
| Madagascar | 75,954 | 4.76 | 10,503 | 0.75 | 60.6 |
| Malawi | 15,024 | 1.32 | 4,179 | 0.40 | 49.2 |
| Mauritius | 86,410 | 72.86 | 14,648 | 13.06 | 22.5 |
| Mozambique | 85,337 | 4.78 | 13,862 | 0.88 | 29.8 |
| Reunion | 14,832 | 1.92 | 5,584 | 0.77 | 147.7 |
| Rwanda | 7,602 | 96.23 | 623 | 8.31 | 10.5 |
| Seychelles | 131,342 | 15.06 | 58,285 | 7.34 | 142.9 |
| Somalia | 82,232 | 3.50 | 17,635 | 0.86 | 30.34 |
| Uganda | 70,006 | 2.01 | 13,853 | 0.45 | 28.3 |
| U. Rep. of Zambia | 34,825 | 3.34 | 15,349 | 1.65 | 118.0 |

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| | | | | | |
|--------------------------|-----------|--------|---------|-------|--------|
| Zimbabwe | 77,345 | 6.11 | 33,757 | 2.92 | 131.8 |
| MiddleAfrica | 469,787 | 5.05 | 110,088 | 1.34 | 54.0 |
| Angola | 195,675 | 15.80 | 31,246 | 2.88 | 34.9 |
| Cameroon | 57,050 | 3.77 | 24,785 | 1.85 | 128.5 |
| Central African Republic | 9,855 | 2.65 | 1,667 | 0.50 | 56.0 |
| Chad | 5,836 | 0.74 | 1,060 | 0.15 | 62.7 |
| Congo | 100,052 | 29.03 | 25,642 | 8.63 | 242.2 |
| Congo | 66,488 | 1.37 | 15,362 | 0.36 | 20.5 |
| Dem. Rep. Congo | 12,149 | 26.64 | 7,964 | 19.66 | 4488.6 |
| Equatorial Guinea | 10,951 | 8.71 | 1,964 | 1.78 | 91.9 |
| Gabon | 11,732 | 78.74 | 396 | 2.99 | 14.6 |
| Southern Africa | 353,733 | 7.05 | 157,848 | 3.41 | 133.7 |
| Botswana | 4,298 | 2.49 | 1,968 | 1.28 | 244.8 |
| Lesotho | 995 | 0.56 | -283 | -0.17 | -32.2 |
| Namibia | 3,390 | 1.79 | 803 | 0.49 | 66.7 |
| South Africa | 342,947 | 7.79 | 154,264 | 3.82 | 134.8 |
| Swaziland | 2,103 | 2.01 | 1,095 | 1.16 | 140.1 |
| WesternAfrica | 902,564 | 3.99 | 409,687 | 2.06 | 111.5 |
| Benin | 13,669 | 2.20 | 4,069 | 0.75 | 80.8 |
| Burkina Faso | 6,237 | 0.52 | 3,246 | 0.31 | 102.9 |
| Cape Verde | 83,291 | 191.03 | 14,131 | 36.00 | 35.8 |
| Cote d'Ivoire | 58,843 | 3.72 | 22,509 | 1.59 | 133.6 |
| Gambia | 20,923 | 15.95 | 12,070 | 10.74 | 206.8 |
| Ghana | 150,665 | 7.69 | 81,315 | 4.66 | 101.0 |
| Guinea | 19,684 | 2.43 | 7,098 | 1.00 | 102.7 |
| Guinea-Bissau | 29,449 | 21.54 | 7,716 | 6.48 | 258.5 |
| Liberia | 41,756 | 14.19 | 24,818 | 9.77 | 229.4 |
| Mali | 45,034 | 3.78 | 10,891 | 1.04 | 44.6 |
| Mauritania | 14,813 | 5.60 | 6,842 | 2.93 | 141.9 |
| Niger | 4,948 | 0.46 | 535 | 0.06 | 34.0 |
| Nigeria | 247,497 | 2.16 | 131,443 | 1.31 | 133.5 |
| Saint Helena | 2,460 | 492.00 | | | |
| Senegal | 104,715 | 11.15 | 46,189 | 5.52 | 96.6 |
| Sierra Leon | 40,556 | 9.19 | 25,043 | 5.91 | 233.6 |
| Togo | 18,024 | 3.95 | 11,773 | 2.94 | 148.7 |
| Sub-Saharan Africa | 2,786,580 | 4.48 | 962,974 | 1.75 | 78.7 |

Sources: Dumont and Lemaître 120041; Docquier and Marfonk (2005)

Table A.4. :Number of Highly skilled Expatriates in Latin America and Africa

| Total Number of Highly Skilled Expatriates in Latin America and Africa | | | |
|--|-----------------------------|------------------------|--|
| Country | Total Number Expatriates | % of highly skilled | Number of highly skilled immigrants |
| Jamaica | 796 046 | 24.0 | 191 051 |
| Colombia | 682 156 | 25.7 | 171 221 |
| Brazil | 351 878 | 31.7 | 111 545 |
| Peru | 361 506 | 30.2 | 109 175 |
| Argentina | 266 070 | 37.8 | 100 574 |
| Haiti | 466 897 | 19.8 | 92 446 |

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| | | | |
|-------------------|---------|------|---------|
| Trinidad & Tobago | 276 934 | 29.5 | 81 696 |
| Venezuela | 200 461 | 40.2 | 80 585 |
| Guyana | 305 544 | 24.9 | 76 080 |
| Ecuador | 490 267 | 15.4 | 75 501 |
| Chile | 200 366 | 33.0 | 66 121 |
| El Salvador | 839 511 | 7.8 | 65 482 |
| Panama | 140 631 | 32.6 | 45 846 |
| Nicaragua | 224531 | 17.9 | 40 191 |
| Guatemala | 489 772 | 8.2 | 40 161 |
| South Africa | 342 947 | 47.9 | 164 272 |
| Nigeria | 247 497 | 55.1 | 136 371 |
| Kenya | 197 445 | 37.4 | 73 844 |
| Ghana | 150 665 | 34.0 | 51 226 |
| Congo | 100 052 | 36.6 | 36 619 |
| Ethiopia | 113 838 | 31.2 | 35517 |
| Zimbabwe | 77 345 | 43.3 | 33 490 |
| Uganda | 82 232 | 39.2 | 32 235 |
| Tanzania | 70 006 | 41.0 | 28 702 |
| Madagascar | 75 954 | 32.0 | 24 305 |
| Mauritius | 86 410 | 28.0 | 24 305 |
| Senegal | 104 715 | 23.1 | 24 189 |
| Cameroon | 57 050 | 42.3 | 24 132 |
| Mozambique | 85 337 | 26.5 | 22 614 |
| Congo RDC | 66 488 | 32.5 | 21 609 |

Source: SOPEMI/OECD 20041

Table A.5. Remittance flows to Developing countries (\$Billions)

| | 1990 | 1995 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2006-07 |
|-------------------------------|------|------|------|------|------|------|------|------|------|------|---------|
| WORLD | 69 | 102 | 129 | 143 | 170 | 206 | 234 | 2066 | 303 | 337 | 11% |
| Developing countries | 31 | 57 | 82 | 92 | 115 | 143 | 163 | 194 | 226 | 251 | 11% |
| Lower middle income | 18 | 36 | 47 | 51 | 71 | 89 | 95 | 110 | 127 | 140 | 10% |
| Upper middle income | 6 | 12 | 13 | 17 | 30 | 38 | 48 | 60 | 70 | 78 | 11% |
| Lowincome | 7 | 9 | 22 | 24 | 15 | 17 | 20 | 24 | 29 | 33 | 15% |
| Latin America & the Caribbean | 6 | 13 | 20 | 24 | 28 | 35 | 42 | 48 | 57 | 61 | 6% |
| South Asia | 6 | 10 | 16 | 16 | 24 | 30 | 29 | 33 | 40 | 44 | 11% |
| East Asia and the Pacific | 3 | 10 | 17 | 20 | 29 | 35 | 39 | 47 | 53 | 59 | 11% |
| Middle -East & North Africa | 12 | 13 | 14 | 15 | 15 | 20 | 23 | 24 | 27 | 29 | 8% |
| Europe and Central Asia | 3 | 8 | 11 | 11 | 14 | 16 | 23 | 32 | 39 | 47 | 20% |
| Sub-SAHARA Africa | 2 | 3 | 5 | 5 | 5 | 6 | 8 | 10 | 11 | 12 | 7% |

Source: Word bank staff Estimates on IMF BoP Yearbook 2004/2008 and country desks

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4 Lessons learnt for Rwanda from China's poverty reduction strategies: Policy analysis review's

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Introduction

Nowadays, China has emerged as a powerhouse for many industries and some scholars argue that China has become the World factory. In that perspective, China impress the whole African continent and it is now a pragmatic development partner; whereby may political and economic observers consider a new era and move of South-South relationship to replace the North-South relationship in the future. Persistent poverty in Africa is due to constantly failed and unpopular policies taken by the many Government of African countries, and this malaise is a common cause for chronic and extreme poverty in Africa. From this point of view, there is a lesson to learn from China on how it overturned the similar malaise

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between the years of the 1950s and 1980s when China was closely comparable to many African countries have the same socio-economic status. The research made by Chen & Ravallion, (2007) indicated that in the 1980s two out of three Chinese were living under poverty line of \$1 a day, whereby on the other hand in Africa especially in the Sub-Saharan Africa 40% of the populace was living under poverty. The efforts of China in fighting against poverty since 1978s created a dramatic gap between Sub-Saharan Africa and China to the extent that in the 2000s in China less than one person was living under-poverty while it was the same proportion of 40% of the population in Sub-Saharan Africa who were living underneath the poverty line. The poverty reduction trend percentage was 1.9% in China while it was 0.1% in Sub-Saharan Africa. However, it is not a straight forward task to compare Sub-Saharan Africa and China and then figure out many valuable lessons for African countries because the contexts of the two parts of World are quite different.

In fact, in most Sub-Saharan Africa including Rwanda in the last thirty decades failing leadership and bad governance used to lead to political instability which usually resulted in wars. However, China was building a strong leadership and good governance that contributed to the promotion of market liberalization which facilitated the Foreign Direct Investment and innovation and creativity (Van de Walle, 2001; Posner & Young, 2007). The Sub-Saharan African countries are mostly unable to finance their economic development through public investment in Agriculture and Infrastructure developments as did China over thirty decades. In this Chapter, the authors attempt to outline and emphasizes the impressive policy lessons that Rwanda can learn from China's success. However, it would not be a good practice for Rwanda to copy and paste any policy from China in order to eradicate poverty but it can be worthwhile to draw some lessons to support homegrown solutions in fighting against poverty.

The Economic Development and Poverty Strategy of Rwanda has to be inspired by the China's subsequential economic reform over last thirty decades but it is important to note that by liberalizing too much the economy would create inequality which is not a good example from China to follow. In addition to this,

there some important common characteristics between Rwanda and China namely high inequality, high dependence rates because of high fertility rate, and high population density; which enable the author to easily compare Rwanda' strategy for the fighting against poverty with one of China and then draw impressive domestic policy lessons on how China initiated and implemented its strategy for poverty reduction and why it made a successive progress against poverty.

In fact, China's success in lessening poverty is factual indeed from 1981 to 2013, whereby China lifted 850 million people out of poverty, and including particular achievement of lifting a great percentage of people from extreme poverty from 88% to 1.85% in that period. Throughout this era, China fascinated the attention of many economic practitioners and social scholars and other worldwide organizations to lay out important lessons, especially for the underdeveloping countries particularly the Sub-Saharan Africa. In this perspective, Dollar, (2008) presents a number of policies that China implemented to drop down poverty and those policies can give valuable inspiration and foundation for Sub-Saharan Africa. Heilig *et al.*, (2005) indicated that the economic reforms must be a major pillar in fight against poverty in their first stage for the under-developing countries, and in next stage, they have to focus on social scheme and regional integration and market reforms.

The reason why the World can learn from China' s success in escaping from poverty is that in the eras before 1980 China was even poorer than some of the African countries and among the poorest in the worldwide. However, over the period of 35 years, China has been constantly experiencing ambitious and sounding socio-economic transformations that allowed to achieve pragmatic achievement in the economic and human development and consequently dramatic reduction in poverty. China's economy has steadily been rising at an average rate of 9.8% every year from the time when the economic reforms was introduced in 1978, the per capita income has been gradually increasing in fifty-fold over 35 years. The Human Development Index (HDI) was improved gradually from 0.423 to 0.719 respectiverly in 1980 to 2013 and this has placed China on the table of honors with high human

development classification at 91 out of 187 states around the World (UNDP, 2013). In addition to this, by 2013 China had already attained almost all Millennium Development Goals (MDGs) ahead of Sustainable Development Goals by 2050. This extraordinary socio-economic development has made China the second heaviest economy in the worldwide in 2010 after the USA, and hence increasing China's global power and influence. However, stable and sustainable economic growth and extraordinary transformational achievements of China was not smooth at all because they created rough domestic disparities, especially socio-economic development imbalances in terms of admittance to social facilities economic prospects, between regions whereby the eastern region and seaboard were heavy than the interior and far west regions, and severe disparities are observed between urban and rural populations. Within the initiation of new economic reforms in late 1978, the Chinese economy outstretched at a stable growth rate beyond 8% per capita, foremost to a histrionic upgrading in living conditions. This progress has powered historically unheard of poverty lessening: the split of populace below the poverty live in worldwide based "*cost of basic needs*" decreased from 60% at starting of economic reform in 1978 to 7 percent in 2007 (Sardana & Zhu, 2017).

The remaining underdeveloping countries fighting to develop and decrease poverty are indeed attracted by impressive progress in poverty reduction of China, their wandering about the sources of progress and if possible lessons which can be drawn from that success. There are numerous ingredients that have guided to China's achievement. Some of these ingredients are deep-rooted on a characteristic of Chinese culture which put much focus on education and as well as saving practice. Others factors involved in the success change the system ("*Gai Ge Kai Feng*") which was about altering economy from nearly full state-owned to private management, promotion of direct foreign investment, development of infrastructure, and as well agriculture promotion and rural development (Qin, 2015). All those initiates and reforms had been positively contributed to a sharp reduction in poverty in China and some other developing countries may draw very important lessons from such practices.

However, poverty in Rwanda has changed, throughout the previous three eras. The Rwandan economic situation replicates a chronic failure to achieve production increases in the framework of a large and in the proportion of population growth. This problem of failure dated a long time as evidence from the 1980s and early 1990, topping to severe physical hitches. Additional, 1994 Tutsi genocide left a terrible legacy, further depriving the country and leaving in a horrific situation of poverty. Different poverty programs were implemented in Rwanda. The poverty evaluation in Rwanda indicate gradual achievement from 44.9 to 39.1% respectively in 2010/1 to 2013/4 (NISR, 2016), but the MDGs objectives were also achieved except the ones poverty reduction whereby the achieved was 39.1% compared to 30.2% as a target to reach. With this situation, the study raised relevant questions which are about: why has Rwanda stayed behind schedule? What might be the lesson which Rwanda could learn from China's success in poverty reduction? For sure China is a typical better case to learn from their achievements.

Nevertheless, there are motives for wisdom in printing lessons for Rwanda from greatest achievement in poverty reduction of China. The idea behind this is not to copy and paste china's particular program for achieving the same success as China. For instance from the period of 1978 was characterized by the series of economic reforms in China and has successful achieve impressive results. Also, Rwanda should not only learn from successes, likewise to the development pathway of China. In this learning process, it must be recognized that the challenges faced by Rwanda in this journey of poverty reduction, are not definitely the same as those faced China. From this perspective, since the beginning of economic reform period, the differences between China and Rwanda are quite apparent; Rwanda tends to have upper inequality, a higher rate of poverty, high dependency level, landlocked geographic location and higher populace density. Therefore, nothing of this justifies that Rwanda cannot learn from the extraord achievement of China in reducing poverty. The present study aim at understanding the extraordinary success of China averse to poverty, specifically the mechanism throughout the reforms preside over poverty lessening, to offer a historical

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general situation of poverty reduction strategies in Rwanda and as well to pull out some policies lessons from the achievement of China in poverty reduction.

The remaining of the Chapter is structured as follows, section two present briefly sympathetic china's progress averse to poverty, the third section reviews policies and Strategies for poverty reduction in Rwanda while section four describes some policy lessons learn for Rwanda from China and final section stretches conclusion and Polcicy recommendations.

Sympathetic China's progress averse to poverty

Overview of China's poverty alleviation programmes

The Chinese successful poverty reduction is a key learning experience in this Chapter where all attention will be paid to learning how China has succeeded in reducing poverty for its entire population from the 1980s. Although making a comparison between countries in the ways they implement policies and strategies for poverty reduction purpose, it is not easy due to many differences in terms of geopolitical, economic and environmental conditions, cultural settings; one country can provide very useful inputs in designing and implementing poverty reduction policies and strategies. In this section, the author looks into the path for the fighting against poverty that China embarked on in the late 1970s up to 2010 era. China has made spectacular progressive poverty reduction over the three decades and its today rapid economic growth is logically attributed to its successful poverty reduction programs.

China's poverty reduction strategies were successful thanks to large-scale and quick economic progress in the previous three decades. This success story was a reality through the continuous reform and structural changes that were facilitated by the shifting from the centralization of economic planning to the decentralization of markets and economic diversification activities increased from agriculture to manufacturing and services industries with effective technological development and know-how transfer, and opening up to the international trade. The famous china's 8-7 socio-economic development Plan aimed at lifting poor households from poverty by improving agriculture,

creating and exploiting employment opportunities; providing and developing basic development infrastructures including modern housing, roads and electricity, and improving access to potable water; and along this ensuring primary education for all and improved health care services accessibility (Sangui *et al.*, 2004).

China's poverty reduction strategy program was facilitated by the continuous macroeconomic and political stability of the country. China also reformed its political and administrative system for effective and enhanced policies and decision-making processes and this administrative flexibility attracted many public-private partnerships bringing together administrative institutions, private enterprises and companies, and non-government organizations joint efforts in combating poverty in China.

In addition to this, China privileged and financed numerical and innovative startups embarking on projects and ideas towards job creation benefiting young engineers and promoting rural initiatives involving many poor households in rural areas of China. In 2001, the Chinese government started a new poverty alleviation plan particularly on developing rural areas in terms of infrastructures and education in order to limit the massive exodus from rural areas to urban areas (Hongbing, 2001). It worthwhile to note that cornerstone of successful Chinese government lies on the efforts deployed in developing the rural areas where in the 1970s the household's income in China's rural areas was extremely very low and a majority of the Chinese population was living without access to basic assets.

Evolution of China's poverty reduction strategies and policies

China's successful poverty reduction strategies program dated from 1978 and is classified into four phases (Sangui *et al.*, 2004):

(i) *The rural reform of 1978-1985*: In the year 1978, China's economy performance was deteriorating and poverty was severely ravaging the whole country. This program was characterized by the land reform and household responsibility system (HRS) in which the Chinese government performed economic lifting to Chinese population through the equitable provision of land to millions of individual farmers with remuneration for high

agriculture production with many rural industries and enterprises being created during that period. This program created a landscaped rural economic growth through rural and institutional reforms all over the country which in turn helped to boost the production of goods and services for local markets and enhancing distribution systems.

This program benefited the entire rural population by raising their income and reducing poverty. The rural reform in China since the 1980s helped to achieve good economic performance characterized by high sustainable economic growth, low inflation, and unemployment rates. Thus such new macroeconomic favorable conditions allowed for effective poverty lessening throughout that period of time.

The result from rural reform on poverty reduction was quite remarkable. The agricultural production steadily increased by an average rate of 6.5% from 1978 to 1985, while the per capita income of rural household subsequently increases at an average percentage of 15.2% for the same period. Further, an yearly sustainable progress rate of 5.7% in grain production and in rural industries' output was recorded, and subsequently a strong price increase in agricultural and farming products contributed to the increase in rural incomes at 15.2 % per year, which in turn resolved the extreme long-standing food shortage in rural areas of China. This increase in agricultural productivity and rural revenues was also justified by the significant poverty reduction from 49% to 24%, and in real terms the figure of poor people in rural settings decreased from 250 to 125 million respectively in 1978 to 1985 measured at the approved poverty line (Guan, 1995; World Bank, 2005).

(ii) *The National Poverty Reduction and Development Programs 1986-1993*: After learning from the rural reform program where poverty reduction pace was very slower and the households living standards was lagging and the inequality was rising; the Chinese government launched a large-scale development program called The National Poverty Reduction and Development Programs with a wide range of stakeholders of government agencies with a variety of funding channels in order to coordinate a large number of poverty reduction initiatives where the government created the

special funds in order to support national poverty reduction programmes including subsidized loan program, food for work (FFW) program, and budgetary poor area development funds and grants (Sangui *et al.*, 2004).

This program aimed at sustaining the agricultural growth through public investments in education and research, hard infrastructures such as roads and irrigation which later encouraged agricultural productivity and generated many job opportunities for millions of rural population in China. During the 1980s the Chinese government introduced a 9-year compulsory schooling program and the government heavily invested in agricultural research and engineering targeting poorer rural marginalized areas and groups of people, providing millions of rural farmers and laborers with jobs in irrigation projects. The national poverty reduction and development programme produced a tremendous result in poverty reduction whereby the rural poor population dropped from 125 to 80 million respectively in 1985 to 1993 (Sangui, 1994).

(iii) *The 8-7 Poverty Reduction Plan 1994-2000*: After the success of the National Poverty Reduction and Development Programs of 1986-1993 where there is a remarkable impact on poverty reduction, there were some other increasing difficulties and the diminishing pace was being noticed and required more government commitment and efforts folded to tackle the food scarcity and clothing problems for the remaining households which were still living in poverty. It is in this context that another national anti-poverty strategy known as the 8-7 Plan was launched targeting already identified and listed counties, and it aimed to assist poor rural households by improving agriculture, improving employment opportunities, providing and developing basic development infrastructures including modern housing, roads and electricity, and improving access to potable water; and along this ensuring primary education for all and improved health care services.

This poverty reduction plan showed great achievements in poverty lessening. The figure of rural poor population was reduced from 80 to 32 million respectively in 1993 to 2000 (Meng, 2013). The annual poverty reduction rate was 12.3% during that

period of time, with 3.6% bigger than the average rate of poverty lessening for the whole reform period of post-1978. The literacy rate rose to 85%, while the enrollment proportions rose to 99% and 89% respectively in primary and secondary education during the same period. The tremendous progress was also achieved in the health sector, whereby the life expectancy at birth increased to 70 years, infant mortality rate dropped to 3.1%, and under-5 mortality cut down to 3.9%, the diseases immunization from birth stretched 98%, with 85% of the total populace could have admittance to essential medicine (World Bank, 2001).

(iv) *The New Century Rural Poverty Alleviation Plan for 2001-2010*: Based on the pragmatic lessons drawn from the previous 8-7 Plan, the government of China engaged in the new Century Rural Poverty reduction Plan covering the period from 2001 up to 2010. In the early 1990s, it was obvious that a large scale poverty alleviation program was most needed as it had been revealed that the poor rural populace in China was largely still there and particularly concentrated in western regions where poor families were relatively dispersed in poor villages instead of in poor counties. This is why the new plan came in targeting poor villages rather than poor counties.

This plan emphasized mainly on science and technology, but also on culture, and health improvement. The New Century Rural Poverty Alleviation Plan sought to sort out the disparities observed between the urban and rural areas all over China with the intention to limit the mass rural-urban migration. This new century plan was facilitated by the regional integration and globalization which has created global networks, and which allow China to boost the foreign direct investments (FDI) and fuel into heavy industrialization revolution and new technologies and management skills. This program has been characterized by a huge amount of exports, building big cities, stimulated high tech innovations so as to conquer world markets (Yansui *et al.*, 2017).

The strong overall result of this programme was mainly the decrease from 32 million in 2000 of the rural poor population to 15 million in 2007. This tremendous achievement in the rural poverty reduction and development programs during this period was largely enabled by the capacity development of local communities

Ch.4. Lessons learnt for Rwanda from China's poverty reduction strategies especially in terms of agricultural technology training, and a wide range of investments in infrastructure including roads and irrigation projects, construction of schools and health clinics (LGPRD, 2001).

(v) *Precision Poverty Reduction Strategy (2011–2020)*: The Chinese authorities have introduced the new Poverty Reduction Plan covering the period from 2011 to 2020. The main objectives of this new poverty reduction programme were, first of all, to eradicate poverty by 2020. Another mission was to narrow the existing regional disparities. Within this development strategic framework, the government of China surveyed 14 poor regions with special difficulties, 832 poor counties, and 128,000 poor villages to receive government grants and assistance. To effectively implement this programme, the Chinese government formulated another five-year poverty reduction plan in 2016 with the main focus on the main thematic areas including the assistance to the poor households through agricultural and industrial development opportunities inclusiveness, providing better housing conditions by relocating people living in rural remote or naturally bad climate conditions areas. The government of China budgeted an envelope of 600 billion Yuan to finance the relocation programme. The subsidies were extended to households with low income, to poor households to ensure their education (Liu, 2017). The education strengthening measures include developing preschool education in poor villages, providing free lunch for all primary and middle school students in poor counties, and providing free high school and technical and vocational school education and living allowances for students from designated poor families. The poor households were provided with assistance in terms of social security in order to help them have access to basic health services.

For effective implementation of this poverty reduction programme, the partnerships between local governments and development partners and other stakeholders including financial institutions, rural enterprises, and cooperatives to participate in that poverty reduction programme. This programme has also recorded tremendous results for the sake of fully eliminating poverty by 2020. In this perspective, the results showed that the rural poor population has been reduced from 166 million in 2010 to

43 million in 2016 with an annual poverty reduction rate of 20% (UNDP, 2016).

In concluding this section, it is important to say that nowadays, all developing countries can learn from the Chinese experience and China is becoming a development model for many developing countries. The key in the Chinese successful poverty reduction resides in the full political commitment where the Chinese government has been proceeding for building strong state institutions accompanied by the decentralization of its administrative system and economic powers to the local governments and hence enabling its citizen got empowered and able to participate in the decision processes and empowerment. China succeeded in poverty reduction because it opted for the transition from an agricultural to an industrial and service-oriented economy. China consistently reduced poverty to millions of its population by promoting and accompanying entrepreneurial initiatives and adjusting its market mechanisms.

Recently, after evaluation in 2015 found that around 55 million population still live below the poverty line and most of them live in rural and detach areas in the country. Addressing this challenge, in the 13th five Year Plan 2016- 2020 poverty reduction program was taken among the priority with the purpose of raising all population remain in poverty by 2020 (UNDP, 2016).

China's spectacular development and advance during the past three decades reflect the openness of its economy and society to the international trade which has made one of the greatest export powers of the world. China's exports are fuelled by the vast inflows of foreign direct investments from all over the world, which have made China be the great hub of modern industries and factories with advanced technology. Now China is a global power of science and technology, and many Chinese workers who are proficient in all categories of skills are scattered across the world to conquer every single market through their highly competitive enterprises.

Sympathetic China's poverty reduction policies and strategies

According to Wu & Cheng, (2010), the policies and strategies for poverty lessening can be viewed in three main constituents such as pro-poor economic progress strategies, a rural social security, and development- targeted on poverty lessening policies and programmes. This section is going to analyze the main poverty lessening strategies, policies, and programmes in rural areas of China so as to draw key lessons for Rwanda.

Rural reforms and poverty reduction

In the late 1970s, China initiated its economic reforms which led to the decentralization of its economy to make it market-oriented and controlled based on the openness to the international trade and cooperation. In the rural areas of China, there are still some remarkable signs of extreme poverty and high inequality. Despite its pragmatic economic development, China remains one of the developing countries because the living standards are still low as it is still the case for Rwanda. Despite strong rural reforms in the late 1970s, the disparities between China's urban and rural settings are worrying today. Largely, China's success touching poverty is based on development of urban areas, industrial development and exports promotion which hugely fuelled by Foreign Direct Investments (FDI) but the fight against poverty is ongoing in rural settings. The rural reforms reside in economic reforms which are materialized by the fact that rural poverty was spectacularly reduced to 30.46 million people by the end of 2017 with the poverty incidence decreased to 3.1% (Montalvo & Ravallion, 2009; David, 2007). In the years of 1980s and 1990s, China introduced the land privatization policy which in turn resulted in dramatic poverty reduction.

China's rural development has activated the booming creation of small and medium enterprises since the 1980s. This rural industrialization created real non-farm employment opportunities for the rural Chinese population (Zhang *et al.*, 2015). In the early 2000s, it was estimated that about a half of employment opportunities apart from farming jobs were found in rural enterprises. The rural enterprises contributed to the improvement

Ch.4. Lessons learnt for Rwanda from China's poverty reduction strategies of lives of people living in rural settings and hence to the rapid and sustainable development (Zhang, 2003). The gross production of rural enterprises which was about a 10% share of China's GDP in 1985, increased gradually to be more than 30% in the 2010s. This is the undoubtfully the proof that the development of rural enterprises has contributed effectively to reducing income inequalities and hence poverty.

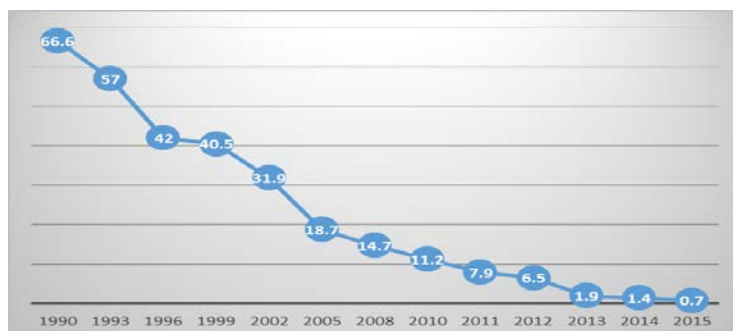


Figure 1. Poverty reduction in China between 1990-2015 based on international poverty line(1.90\$ US per day)(% of population)

Source: Computed from World Bank, (2018)

Industrial development and poverty reduction

Economic development is a strong pillar for rural development whereby enabling productivity and employment. In this economic transformational process, there is a notable transition from farm jobs to non-farm jobs such as industry and services jobs and furthermore, this process enables the towns and cities on the national wide level. The industrial development process in China started from about two centuries and has been a continuous process through which firms gradually developed more manufacturing techniques and capabilities thanks to the cross-national technology transfer from Russia and many European countries which allowed the accumulation of knowledge and factory level production techniques. In the 1970s, the manufacturing industry in China rose gradually to cover the entire range of industrial activity through the wide range of product mix, including highly sophisticated operations involving petroleum refining, ships building, car manufacturing, military equipment, nuclear weapons, and earth satellites.

A sophisticated and successful industrial reform in China which began in late 1978 demonstrated great achievements impacting all economic spheres starting from rural industry including mining and construction as well as manufacturing whereby about 20 million jobs were created within three decades on in ([Thirty Years, 2008](#)). The development of industry in China recorded great performance since 1952 whereby industrial production was averaging an yearly growth percentage of more than 11% per annum between 1952 and 1978, while employment rate was increasing at an increasing rate of nearly tenfold, just to say specifically from 5.3 million jobs in 1952 to 53.3 million jobs in 1978. However, within such period of time, the industrial revolution and structural change accelerated the pace of shift in the structure of the industry, from traditional and dominant consumer manufacturing products toward intermediate and producer products. Hence the new and modern industries especially for the manufacturing of heavy machines, telecommunications, and power generating emerged accounting from only 6.2 % of industrial output in 1952 to 25.7 % in 1978 ([Brandt et al., 2016](#)).

The openness of China to the international trade and the liberalization of the domestic market enabled such industrialization to be effective. In industry, the industrial reforms which systematically began in the early 1980s whereby within the framework of the programme called Township and Village Enterprises (TVEs) allowed the expansion of collective rural industrial firms. This industrial development programme produced remarkable results in developing the whole manufacturing sector in China with the labor-intensive production of consumer goods, development of sophisticated factories for textiles, garments and food processing ([Xiaolan & Balasubramanyam, 2003](#)). The industrial development and expansion of industrial firms in rural areas of China have been the major pillar of the successful economic reform process and this was facilitated by the macroeconomic decisions made by the Chinese government to make state-owned enterprises (SOEs) more autonomous.

The industrial reform in China usually was done in three development phases whereby the first phase was about the move

from agricultural communes to household farms. Around 1980, the mandatory target framework of output planning and administrative allocation of inputs and products were designed for the purpose of improving the performance of enterprises within the domestic markets. Within this framework, state-owned enterprises obtained the upright to keep a modest portion of total profits and unparalleled inspection over any output above the required plan goals. In this regard, a number of efforts were undertaken such as decentralized and semi-market transactions, long tolerated grey market, was also encouraged as a means of encouraging firms to preside over their doings more actively and effectively. However, concerning the external markets, a new "open door policy" dismantling long-standing barricades to global trade and investment endorsed by special motivations to increase overseas economic contacts, especially in the Southern region. The seconds' phase constituted the expansion of Township and Village Enterprises (TVEs), whereby in early of 1984, the new reform policy focused on two novelties such as dual pricing and the enterprise contract responsibility system. Dual pricing segregated supplies of industries production into plan and market components.

In this system, the state-owned enterprises (SOEs) performed marginal auctions and acquisitions on marketplaces where prices replied gradually to the powers of supply and demand in order to ensure long-term economic stability. And at the similar time, bank credits in substitute budgetary assumptions became the reliable source of outward funding for industrial enterprises, hence stimulating the emergence of start-ups. and the third phase constituted the restructuring and privatization of individual state-owned enterprises (SOEs) whereby the contract accountability system was introduced and then the enterprises were allowed to set performance targets with their employees for total profit and economic surpluses. With the reorganization and restructuring of State-Owned Enterprises (SOEs), the new management system allowed the flexibility in different performance management domains including research and development, product innovation, investment planning, marketing, supply chain management, wage

Ch.4. Lessons learnt for Rwanda from China's poverty reduction strategies and employment structures (Brandt & Thun, 2016; Hu & Jefferson, 2008; Naughton, 2015).

Consequently to these industrial development policies and strategies, a big amount of domestic private firms were created and due to the open door policy of the Chinese government, many foreign private firms were also attracted by the establishment of special economic zones (SEZs) which helped very much in making easy foreign direct investment, and hence introducing duty free policy for materials destined to the manufacturing of goods exclusively for exports. Therefore, following that robust industrial development and reform processes which reshuffled the free trade and factory expansion, it was a starting point for the development of commodity and many other important sectors to the Chinese economy, especially the craft sectors. In this perspective, the Chinese acquired numerous intermediate technology and engineering and chemical skills from Japanese particularly in expanding small-scale textiles factories in producing cotton goods foodstuffs in northern China (Rawski, 1980, 1989; Grove, 2006; Ma, 2008). However, the emerging of private firms in China in the early 1980s was the overall results of creation of technical schools specializing in textile engineering, and engineering profession overhaul, and importantly the creation of local chambers of commerce whose role was to facilitate the dissemination and sharing of technologies and knowhow start-ups (Morgan, 2003; Haggard, & Huang, 2008; Schott, 2008; Mandel, 2013).

However, the most vital effect of these reforms was a change from planning economy to the market economy. Researches conducted by several scholars between the period from 1980 to 1989 indicated that the magnitude of market transactions done by the state-owned enterprises (SOEs) changed gradually; whereby the portion of material inputs bought via the marketplace increased from 32 to 59 % (Yingyi & Jinglian, 2000), or from 12 to 66 % (Jefferson & Rawski, 1994). The similar surveys indicate the portion of output sold on the marketplace increased from 49 to 60% (Furen, 1991), or from 13 to 66 % (Jefferson & Rawski, 1994). In addition to this, during the 1980s the enterprise funds and bank loans became the main source of external sources of finance for enterprises in replacement of state budgetary grants. This

industrial reform enhanced the enterprises' autonomy, created fair market competition among enterprises, and finally, the allowed the entrepreneurial incentive mechanism system within enterprises (Yingyi & Jinglian, 2000; Fan & Woo, 1993).

Economic Growth and Poverty Reduction

Economic growth is more important tool for lessening poverty and upgrading the human conditions of living in all developing countries and maintaining a better standard of living in developed countries. Actually, economic growth brings prosperity and creates more employment opportunities, makes structural adjustments possible and effective and deepen other associated reforms. All emerging economies in this new and modern world are relying on high, stable and maintainable economic progress which truly facilitates the development of minor and middle enterprises which in turn contribute in increasing government revenue, preventing financial risks and maintaining financial stability. Economic growth needs to be supported by political stability, favorable business environment, strong leadership, and good governance. Economic progress, thus, contributes to human development, which in turn stimulates economic progress as well. In the late 1970s, the progress rate of GDP averaged about 9 % per year during the past three spans (Montalvo & Ravallion, 2009).

Many scholars especially Shaohua & Ravallion, (2004) and Zhang & Long, (2005) indicated that there is a positive correlation between economic progress and poverty lessening.

Therefore, any successful strategy for poverty reduction must start with promoting rapid, stable and sustained economic growth. The policies and strategies for poverty reduction must be fully pro-poor that permit the poor people to involve in the opportunities generated by that growth. This may be achieved by thinking and drafting policies which can improve labor markets functionalities, ensuring women empowerment and fully eradicating gender inequalities in the decision-making process and furthermore increase financial inclusion for lightening entrepreneurship; but however, the major determinants of economic progress in any country consist of improved leadership and governance (Lin, 2003).

Rodrik, (2013), ascertained that economic growth is the best tool for poverty eradication because it contributes too much to uproot transformation of any society and help to provide the better life. Development researchers around the world and especially around a wide range of developing countries over the past five decades constantly indicated that rapid and sustainable economic growth has been the most effective economic instrument to make many people escape from poverty; and in this way China is a typical example as it has lifted over 500 million people from poverty to wealth creation since 1979 due to its extraordinary and rapid, stable and sustainable economic growth between 1985 and 2001. To achieve stable and sustainable economic growth is not an easy task. China implemented the market-oriented economic reform; in early 1978, China started the economic transformation beginning with the rural reforms (Riskin, 1987; Cheremukhin *et al.*, 2015).

Subsequently to the inceptive rural reforms, the country economy gained abundant food supply escaping many people from hunger. This rural reform served as the motivating factor for others reforms that were subsequently designed and implemented such as opening up the economy to the domestic private companies (Li, 1991; Jabbour & Dantas, 2017), in the next stage, reforms also took place in the banking and financial sector whereby the introduction of a new system which incorporated a national bank, commercial banks, financial companies and as well capital stock market (World Bank, 1995).

Fiscal, social, and environmental policies are the pillar of China's Sustainability of progress and development. Fiscal sustainability refers to the government expenditures which affect income distribution and hence reducing inequalities; Social sustainability refers to the social relationships, interactions, and cohesion for providing the public goods to the human societies. This creates a supporting cycle leveraging economic progress and hence improving human capabilities and social welfare, Environmental sustainability consists of managing natural resources resulting in the reduction of ecosystem degradation, pollution, the risks of climate (Saavedra-chanduvi *et al.*, 2013). Growth policies like investment in human capital and job creation that only foster greater labor utilization could reduce poverty

while the one that seeks to boost technological development, tends to favor highly skilled workers and can harm the poor people and lower skilled workers. Growth policies have to increase the flexibility of the labor market's needs.

The features of China's economic reform have been qualified as pragmatic, with reference to the famous statement of Deng Xiaoping: *"crossing the river by feeling the stone"* (Zhu, Ying, & Warner, 2002). Therefore, the progress of economic reform was divided into the following five phases (Zhu & Warner, 2017).

The first phase of economic reform in 1978-1984 which involved the control of the planning system throughout the strong market regulations, complementary to the scheduled economy (Dorn, 2016). The conceptual quarrel for this policy was focused on Deng Xiaoping's well-known novel philosophies which state that *"socialism could have market economic elements and capitalism could have planning elements"* and *"a good cat is the one which can catch a mouse regardless its color."*

The second phase was implemented in 1984-1992 and involved the novel thought of a scheduled market economy to accurately match the standard philosophy of the social economy. In this perspective of achieving rapid and sustainable economic reform, the socialist economy is attached to the rule of value that makes economic operators independent in terms of decision making on the production, marketing, and pricing system.

The third phase which started from 1992-2001 was characterized with the new political struggle of shifting from planned economy to a market economy with the purpose of "establishing a socialistic market economic system". In this system, the same of major policies were the support of the private sectors such as local private enterprises and overseas-owned enterprises.

The fourth phase was implemented in 2002-2013 which was characterized by an important phase in the development of an upgraded socialistic market economic system, gifted of the substantial upheaval taking place over time, comprising world financial crisis in 2008.

The fifth phase started from 2013 up today has been designated as re-concentrating on political regulation whereas more developing market economy which is more regulated and

Ch.4. Lessons learnt for Rwanda from China's poverty reduction strategies institutionalized, within the "rule of law", and the global economic cooperation under the governance of CCP (Sardana & Zhu, 2017). This form of the economy makes more prominence of sustainable economic growth and social integration and creation of enlarged global economic ties. The objectives of more reform in economics is to achieve the so-called "China Dream." Kuhn, (2011), indicated that Chinese Dream focused on strong China (in the economy, politics, diplomacy, technology, and military), Civilized China (equity and fairness, strong culture), Harmonious China and Beautiful China (Health friendly environment and low pollution).

Therefore, with this economic reform and other development innovations over 35 years have been contributed to the economic progress whereby number of the population in china get out below the poverty line, good economic, developed infrastructure and friendly environments of Investments, well-educated and fresher generation of labor force, upgraded technology and FDI, new investment for Chinese companies abroad

(Zhu *et al.*, 2010; Zhu & Warner, 2017). Economic growth has allowed creating many jobs in China especially since the 1990s, enabled the transformation of Chinese society by ensuring the right income distribution, and the rapid economic growth driven by successful economic reforms in China has resulted in a miraculous reduction of poverty.

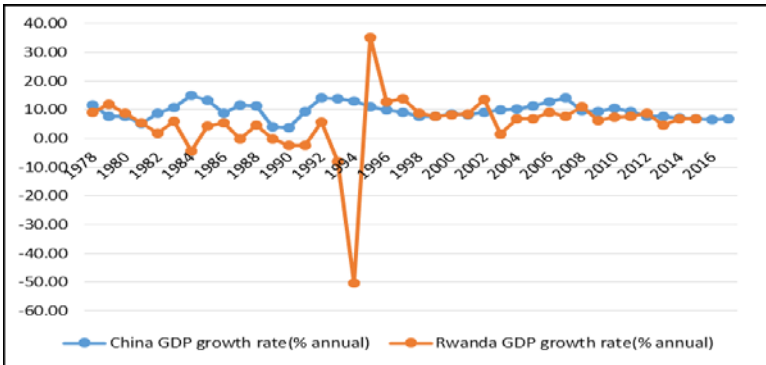


Figure 2. GDP Growth Rate since the reform of 1978 of China and Rwandan situation

Source: Computed from World Bank, (2018)

Agricultural growth and poverty reduction

The increase in agricultural production has been China's major accomplishments over four decades in the fight against poverty. The achievement of the rural reforms obviously constituted a solid basis for the entire national economic reform and thus the dramatic decrease of poverty. In late 1978, the "household responsibility system" was introduced which subsequently made the agricultural output increase rapidly and thus making the rural farmers become richer and wealthier. The agricultural reform was successful and served as the catalyzer of many interesting reforms in other related economic sectors not only by ensuring the food security for rural Chinese population but also by upgrading the ideological and thinking culture towards a market-oriented economy (Rozelle *et al.*, 1998).

The shift from the common agricultural production to the household responsibility system (HRS) or individual farming allowing the liberalization of China's agricultural economy was the starting point for economic diversification in China. As a result, amid 1978 and 1984, agricultural GDP augmented by 7.1% per year, an era when rural poverty populace cut down the fastest. In fact, the agricultural progress also performed a major role in enabling and strengthening the adjusting transformation of the entire economic system. The agricultural progress is arguably the most successful and the right instrument for rural development for developing countries and for a better transition from farming activities to non-farming activities including manufacturing and service activities when it is supplemented by other more quick growth of the non-agricultural sectors.

This is a reality as the acceleration of agricultural development has been facilitating the increase of per capita income and hence the purchasing power and supporting the industrial development through the provision of cheap food and creating so many employment opportunities and enabling the massive consumption of industrial goods as well as. Therefore, the agricultural growth when accompanied by other right structural adjustment and economic drivers and institution reform can constitute a key driver in the overall growth process (Mellor, 2017).

In the early 2000s, China deepened and reinforced its poverty reduction strategies to make them more decentralized at the community level in order to lift a mass of Chinese population from poverty. In this perspective, by the end of 2001, around 21% of entirely rural villages, which had been formally selected as very poor, were pick out in such pro-poor growth policies by providing quality and market-oriented education, technical and vocational training, agricultural subsidized loans, and agricultural tax exemptions, market-based incentives, all of these in the framework of Grain for Green Program; Food for Work Program; Pro-farmers policies and Welfare programmes such as social security expanded to rural poor people (Montalvo & Ravallion, 2010).

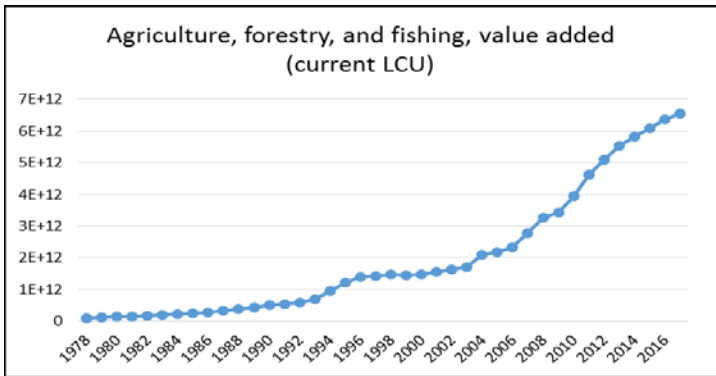


Figure 3. China' Agriculture, forestry, and fishing, value added (current LCU)
Source: Computed from World Bank, (2018)

Openness to international trade and investment careers

Major world economies had grown stable and sustainable based on successfully integrating into global markets, notable integration into global financial capital and multilateralism which are pillars of globalization. The openness to the international markets allows to accelerate growth, facilitates technology transfer, increases competition and benefits both producers and end consumers (Tarr & Volchkova, 2010). Over 35 years, China benefited from the opening of its economy to the global markets in terms of smoothing the population living conditions, lowering financial and market risks, and attracting many worldwide enterprises and companies and technology transfer from the

developed world was a major target, especially from western countries. In the late of 1978, the share of the total trade balance in China's national income amounted to only 7 %.

The open-door policy to international trade stimulated the opening of China to overseas trade and hence increase the foreign imports and the boosts exports as well and hence the foreign direct investments in the country by create many special economic zones whereby foreign investors can easily start factories and get advantages of the cheap and skillful Chinese labor. In 1987, the capacity of foreign trade augmented by 25 % and in 1998 it increased to 37 % of China's gross domestic product (GDP). A numeral of administrative reforms were hosted in foreign trade institutions in the wake of developing world-class seaports. In this perspective, the regions were given more specific autonomy to administer their economy and promote their exports independently. Within this framework, the decentralization of trading activities was deepened for the purpose of facilitating and increasing exports, and trading enterprises were created in connection with industrial and manufacturing companies.

China has tremendously benefited a lot from the opening its economy to the global markets in late 1978, both China's exports exploded by more than 7800% and imports increased by more than 5600% in over the last 35 years increasing. The progress in China's trade balance has faraway overtaken the development in global trade balance in the recent era. As the outcome of this China's growth, the Chinese economy is nowadays the second biggest in terms of international trading and industrial production after the United States of America (USA). In order to be effective, the open door policy was eventually supported by the stable macroeconomic system because normally all investors expect to get the positive return with minimum risk from their investments. However, the higher the risk is usually associated with the higher return and economic value added of investments. In this perspective, a stable macroeconomic environment with low inflation and financial stability is vital to decrease the risks linked with investments and it is a precondition for reducing poverty and inequality. For this, strong fiscal and monetary policy instruments perform an significant role in financing and enhancing public

Ch.4. Lessons learnt for Rwanda from China’s poverty reduction strategies investments (Heilig *et al.*, 2005). In fact, trade liberalization made China one of the more open economies in the global whereby the fraction of overall exports and imports in GDP augmented from 11 to 64 % (NSBC, 2006). Since China opened the door to the international trade, the trade share has been snowballing from under 10 % before the reform period to 22.9 % in 1985, and from 38.7 % in 1995 to 63.9% in 2005. Further, China become a major world markets player since it joined the World Trade Organization (WTO) in 2001 attracting so many foreign direct investment (FDIs), and its annual inflows were averaging \$70 billion between 2004 and 2006, while boosting outflows of its direct abroad investments at around \$16.1 billion in 2006 (Chen *et al.*, 2011; WTO, 2008; UNCTAD, 2007).

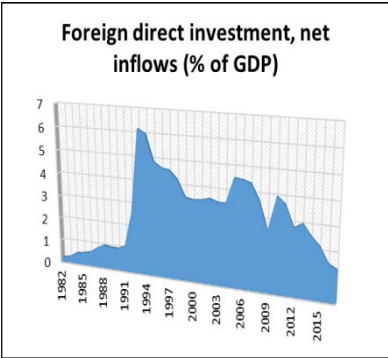


Figure 4. China’s FDI, net inflows

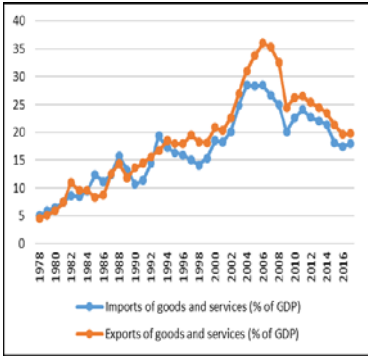


Figure 5. China ’s Situation of Export and Import

Source: Computed from World Bank, (2018)

Social welfare system

The social welfare system includes health care system and social security scheme. In the early 1980s, the Chinese government dissolved the commune health care system, and now the health care system is financed by the local governments for local population, while for the urban population, the healthcare services are provided into different insurance schemes such as Government Insurance Scheme (GIS) and Labor Insurance Scheme (LIS). The GIS is supported by the country budget and covers government workers, pensioners, disabled veterans, university educators, and students. The social security was eventually reformed following

the reform of state-owned enterprises, in which the new system was initiated and hence an unemployment compensation and retirement support were provided whereby employees and firms including private enterprises were encouraged to jointly contribute to a fund that was established for the purpose of healthcare expenditures financing (Mark & Laiyin, 1997).

In fact, the Chinese social welfare policies were not much of success as was economic reforms. In Chinese rural areas, the basic health and elementary education were the most two fields which were lagging behind other development fields, while in urban areas the population was provided with many social benefits and human services including elementary schooling, health care, accommodation, and recreation facilities (Hong & Kongshøj, 2014). Since the 2000s, the Chinese government embarked on the lifting of the living standard of the Chinese population.

The social development in China was supported by the emergence market-oriented economy and liberalization of labor markets which in turn helped to increase the freedom of choices for individuals among different socio-economic spheres such types of employment, workplace, consumption, business creation, etc. (Guan, 2000; Mai & Mingliang, 2008; World Bank, 2008).

In fact, in order to speed up the improvement in social and welfare system, The Chinese government opted for three major aspects of social policies. The first category of policies undertaken was the ones that were designed to influence and redistribute the factor income which subsequently makes growth more effective and intensive to gain rapid and sustainable growth. In this regard, the Chinese government invested more capital in making labor markets more flexible and dynamic by focusing more on human capital assets aspect than it was previously focused on physical assets. This idea of making social change a new strong priority helped to overturn the unemployment and underemployment status in China over the last 25 years. This policy of public investment in infrastructure that intended to boost productivity particularly in very low income and poor regions produced empirical results including improved nutrition, better sanitation, assuring basic education for all, and provision of basic health

Ch.4. Lessons learnt for Rwanda from China's poverty reduction strategies services for all population living in rural and impoverished regions (Jalan & Ravallion, 2002; Lin, 2004; Shenggen *et al.*,2002).

In post momentum of factor income redistribution policy, the chines government introduced another programme regarding the income transfers and mandatory insurance scheme and such programme was financed by social contributions collected or funded by the government. Under this programme, the major outcomes were the smoothing income and social insurance, providing assistance to most vulnerable and deprived individuals, and hence reducing chronic poverty. The insurance system in China comprising mandatory pension, employment, and health insurances were covering about 80% of the Chinese population in the 2000s (Song *et al.*, 2015; Yaohui & Jianguo, 2014).

Another major pillar of this social development was the provision of human services to the Chinese citizens by the government or Non-Government Organizations (NGOs), and to the employees by both public and private enterprises. For this perspective, the government committed a extensive range of financial transfers to poor local government administrative entities; the typical example of this government commitment is demonstrated by the decision taken at the 11th Congress of the ruling Communist Party in early 2006 whereby the Chinese government committed itself to increase the efforts to boost the provision of human services particularly in rural areas (Lindbeck, 2006; Luo *et al.*, 2007).

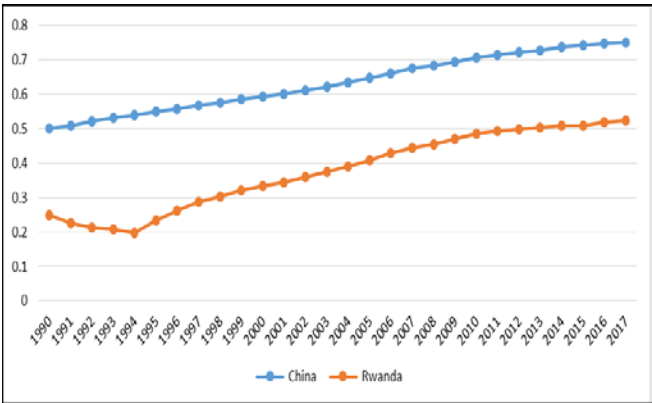


Figure 6. Human Development Index Trends, 1990- 2017

Source: Computed from United Nations Development Programme (UNDP), (2018)

Pricing system

For the sake of market liberalization, the Chinese government opted for perfectly competitive markets whereby consumers can afford cheap goods than under controlled markets. The Chinese government then created independent and competent utilities regulatory body for markets regulation in order to ensure equity and transparency. It is the pricing system which smoothened such regulation in order to ensure low prices are determined by market prices. The Chinese government was aware that the prices of basic consumer goods must be quite low for the improved welfare of consumers who were, in turn, subsidized in order to maintain such equilibrium. In order to allow the shift from the planning system to a market system, the government of China opted to introduce a dual price system in the early 1980s (Lin, 2004) whereby the prices determination for the same set of goods was articulated by the planning system on one hand and by the market forces on the other hand. Within this pricing framework, the owned state enterprises (SOEs) were allowed to purchase the given quantities of inputs and sell given quantities of outputs at the prior set prices. Additionally to this, every enterprise can acquisition extra quantities of inputs and sell additional quantities of productivities at prices that were specified by the market forces.

Furthermore, the dual pricing system was also transacted in the construction of urban apartments which were supplied at extremely lower prices. The dual price system was so far more reinforced and extended to the transactions of both public, private and even external companies which were permitted to build houses and apartments and sell them at relatively affordable market prices. During that period of time, in urban areas companies and enterprises were obliged to provide their workers with apartments at relatively low market prices with the possibility to increase depending on the increase in salaries and wages. The dual price system was an economically efficient instrument in providing incentives and subsidies for enterprises which consequently increase their profit by economizing on costs of inputs and by the way increasing return on the outputs (Bennett *et al.*, 2008).

Development of transportation infrastructures

Over the last 35 years, the government of China has heavily devoted and modernized public infrastructures especially the transportation infrastructure which consisted of many highways and railways; and this has contributed to the Chinese economic growth from late 1978 up to date with the facilitation of admittance to markets, allowing domestic market connections, lowering costs of production and transportation, and upgrading China's profile and increasing its competitive advantage. Besides contributing to economic growth, the investment in transportation infrastructures was a key to poverty reduction by providing access to services and economic opportunities. The Chinese government investment in transportation infrastructure was mainly funded by the government thanks to the Food for Work Programme which facilitated the construction of a larger number of transportation infrastructure in poor areas and hence creating many job opportunity for poor populations, particularly in rural areas. Usually, the food for work programme allowed to provide free food, cotton, and industrial products for highways workers, and such investment was part of vast and ambitious national poverty reduction programs constantly undertaken since the years of the 1990s particularly in what was called the Roads Improvement for Poverty Alleviation (RIPA) program, which is the development of rural highways (Zhou & Szyliowicz, 2006; Brandta *et al.*, 2016).

The development of transportation infrastructure in China was facilitated by various poverty reduction policies and economic reforms that occurred since 1978 and the institutional reforms including the fiscal decentralization that took place in the 1990s, during that period of time, Chinese economy was opened to the global market and was thus required to have a wide range of modern and sophisticated transportation infrastructure in order to attract many foreign direct investments (FDIs). As a response to this, the Chinese government invested more money in the building of new and improving existing transportation infrastructure whereby the total investment was accounting 609.11 billion of Yuan in 2008 which in fact was 76 times the size of the same investment in the year of 1978 (Fan & Chan-kang, 2005).

In this development agenda, almost all areas in China can account highways, which claimed to be most accessible means of transport than any other transport means and thus contributed a lot in economic progress and poverty lessening in rural settings. During the period of 1994 to 2000, the Chinese government accelerated the construction of infrastructure for further highway networks in order to respond to the huge booming economy and large growing necessity of mobility thus 42,000 kilometers of new highways were constructed every year in rural areas. In the late 2002s, the extent of highways coverage was 1.065 million kilometers which means they were 244,000 kilometers more than in 1995 (Xueliang, 2008; Bayane & Yanjun, 2017).

Improved economic and social infrastructure

The Chinese industrial development accelerated the pace and requirement of technological innovation and changes in economic and social structures. Technological innovations are not only for hard structures but also for a Soft structure which comprise of for instance the legal framework, financial institutions, good governance and the schooling systems (Chow, 2004; Lin, 2011, 2013).

In China, the technological innovation has been the basis for rapid and sustainable growth for many years ago (Lin, 1995; Landes, 1998). Investment in education and skills is most imperative than even investment in physical assets such as machinery and plants because quality education usually produces strong and sustainable human capital which actually consists of people with required capabilities to absorb technological skills and innovations, necessary factors in delivering rapid, stable and sustainable economic growth. Investment in human capital directly leads to the improvement of human development index as well as driving progress. As an outcome of the investment in improving the education system, the illiteracy percentage decreased from 22.9 to 6.7 % respectively in 1982 to 2000. The percentage of the Chinese populace who had secondary education or higher education upsurge from 0.6 to 2.9 % respectively in 1982 to 2000; and the proportion of secondary students at schools augmented from 8.9 to 46.0 % respectively in 1978 to 2000 (NBSC,

2003). In order to stimulate economic growth, diversified labor skills are required, including engineering, technical and vocational, machine intelligence, for the Creation of non-farming opportunities and this programme can be achieved through the training for youth (Lin, 2012).

Since 1978, China has created a favorable business environment which in turn has been usually a key to attracting foreign investors who want to safeguard that the returns of their investment will be positive. In this perspective, strong and good governance was the ultimate guarantee of political stability, a corrupt free system, and a low level which are also the key drivers to the prosperous investment. However, over 35 years China has constantly reformed its leadership and administration system by softening legal enforcement of contracts, enterprises creation and compliance with regulations in order to ensure high business profitability. The protection of human rights has been at the heart of China's legal reform and the introduction of the rule of law; in this regard China signed many international related human rights conventions, and in early 1992 when the economic reform was being deepened with very good functioning, it was argued that many important laws were needed in order to go by the that deepening of economic reforms, and for that perspective, many private, public and social laws were drafted or revised and passed. More than 300 laws related decisions based on the Chinese constitution were voted, 700 administrative regulations were adopted by the state council, and 6,000 local regulations were also adopted by local legislative bodies (Yu *et al.*, 2013).

In addition to this, enhanced institutional capacity for protecting property rights contributed a lot to the increase of productivity and ultimately growth. The Chinese government needed to collaborate and deal with the global business community, particularly foreign investors through its open door policy, and in this perspective, a large number of laws were drafted and legislated for the functioning of the market economy. China had subsequently made an impressive effort to modernize the Chinese legal System and made it independent of all kinds of political influence.

Development of private sector and economic transformation

The creation of enabling business environment has fostered the development of enterprises and hence facilitating the economic transformation of China in the last three decades. In order to strengthen its private sector, China set up the improved leadership and vision to become a middle-income country, and this has been supported by the continuous learning from western world experiments and innovation in order to build a stable and sustainable economic growth.

China's pragmatic reforms since the 1980s have been providing strong incentives and motivation for enterprise creation and retaining and attracting back the talented Chinese people. The private sector development strategy in China resulted in creating a lot of employment opportunities pulling million of Chinese people from poverty for over three decades. In China, the progress of the private sector which is at the heart of economic transformation went hand in hand with the change from a centrally controlled economy to the liberal economy, and agricultural reform. In this perspective of the private sector and enterprise developments, China set up policies targeting towns and village enterprise creation (TVEs), special economic zones, widespread privatization of state-owned enterprises. The progress of the private sector is a long process which involves the creation of human and institutional capital needed for managing enterprises for industrialization purpose.

However, the private sector development expanded and penetrated the industries for which during the prior reform, they were characterized by the state dominance and ownership including finance and banking, telecommunications, steel, petroleum, tobacco, etc, to the extent that in 2003 such penetration was accounting around 59.2 % of China's gross domestic product (GDP) (OECD, 2005). In fact, the development of private sector triggered the overhaul of the whole economic system turning from poverty to growth and prosperity, from villages to cities, from planning or controlled to market liberalization, from state ownership and dominance toward private ownership and decentralization, and from isolation to global integration. The emergence of the private sector and such economic transformation

allowed for an increase in output per capita and thus lifting more than 500 million from poverty; the data show that absolute poor villages level declined from 40.65% in 1980 to 10.55% in 1990 and 4.75% in 2001 (Chen & Ravallion, 2004).

2.3.11. Changes in income inequality

A serious consequence of economic progress is the deepening gap between the rich and the poor. The increase in inequality 7% per decade since the 2000s made China one of the uppermost inequality country in the global with a Gini index of 50 %. Another serious difficult is that the success against poverty has stayed geographically uneven over the decades, where the coastal settings persisted better than inland settings, hence leading to regional inequality (Sachs, 2005). The causes of income inequality in China from came gaps from disparities between rural and urban areas, a wide and complex informal sector, disparities in admittance to education and discrimination for employment opportunities specifically for rural migrants (Herd, 2010). Changing inequalities among the population is new agenda for eradicating poverty in China by 2030 through the revising a inclusive social security system elementary medical insurance, joblessness insurance, and sustenance security for urban residents (Xie & Zhou, 2014).

According to Sicular *et al.*, (2017), China made remarkable progress in lessening income inequality since 2008. However, Since the late 1970s, China has experienced impressive changes transforming its economic structures, institutions and social settings, and employment status. Therefore, over the past 35 years, China recorded the most rapid and sustainable economic growth rate in the world, but however, China's economic growth was unevenly performed which made China the country with the uppermost income inequality in the global. This can show by the fact that while the annual GDP growth rate was near to an average of 10 % amid 1985 and 2014, the Gini coefficient of income delivery augmented from 0.38 to 0.471 for the same period.

However, in recent few years, the Chinese government has been much more concerned to tackle this uneven income and wealth distribution issue, and thanks to the efforts being invested deep transforming Chinese economy, there was a significant declining trend in income inequality since 2008, whereby Between

Ch.4. Lessons learnt for Rwanda from China's poverty reduction strategies the period of 2008 and 2014, the Gini coefficient decreased by 2.3 % Sicular *et al.*, (2017). Further, the statistics from the two CHIP surveys of 2007 and 2013 also confirmed that income and wealth inequality declined by 3 % in the same period of time mainly owing to the decrease income gap amid urban and rural families (Li & Sicular, 2014).

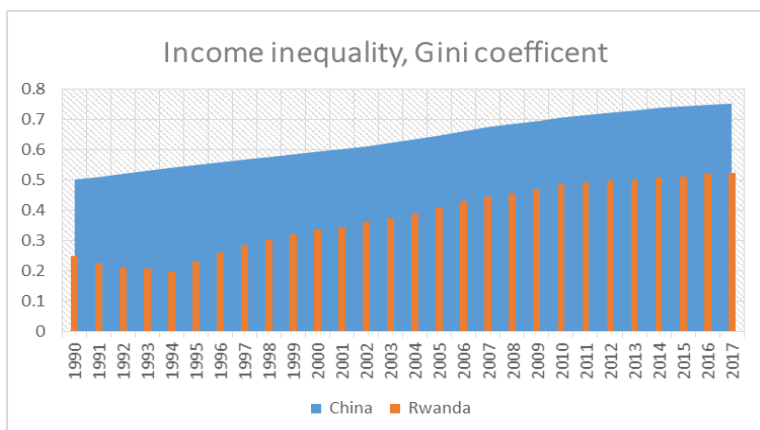


Figure 7. Income inequality, Gini coefficient for China and Rwanda, 1990-2017

Source: Computed from World Bank, (2018)

Policies and strategies for poverty reduction in Rwanda

Over the last two decades, Rwanda has undergone a various economic transformation with private led development and building a knowledge-based economy. Since 2008, Rwanda's economy has been growing at an average rate of 7%. Apart from such growth and economic transformation, a number of constraints including inadequate financial services, poor quality of infrastructure and education, weak private sector, unemployment and deficit trade balance weighted against the successful economic growth. These constraints were the roots of poverty in Rwanda and any policy to fight poverty should target those highlighted areas.

Historical context of poverty in Rwanda

Poverty in Rwanda dates several decades and is caused by a number of interrelated factors such land, demography,

environmental deterioration, geographic location, bad governance as well as little and restricted sources of progress. The socio-economic problems that Rwanda faces today are mainly structural and inherent in the 1994 genocide against Tutsi. It is therefore significant to investigate the case of Rwanda as special which needs special agenda for keep on short-term involvements to deal with emergency wants and long-term viewpoint regarding the sustainable development goals (SDGs).

The poverty incidence in Rwanda is depth with very low agricultural yield, starvation and cyclical droughts, low human resource development; very restricted occupation opportunities; high populace density and demographic pressure; poor health indicators; high transport expenses and environmental deterioration. These microeconomic hitches give increase to the shocking macroeconomic troubles such as operational trade discrepancy; high exposure to terms of trade tremors owing to thick reliance on only export of coffee and tea; structural unevenness between government incomes and expenses; negative savings; and very little level of private investment. These shocking problems and limitations have led to persistent degradation of social welfare over time, making poverty a extensive issue. In the early 1990s, the significance of the scope of poverty was rising, and the headcount index was gradually increasing from 65%. The slow economic growth and increasing income inequality have been the roots of poverty in Rwanda from 1992 to 2007. This period was characterized by the liberation war and internal conflicts (1990-1994), genocide against Tutsi (1994), the refugee crisis (1994-1998). Since then, the socio-economic conditions deteriorated very much and poverty was a very serious issue and which called upon various government interventions.

Over past two decades, the government of Rwanda have introduced a range of policies and strategies, which contributed significantly to the economic performance of Rwanda, such as the performance contracts at district levels, performance-based financing (PBF) of health services, an upsurge in the allocation of government expenses for the health subdivision and the initiation of compulsory mutual health insurance scheme for all Rwandan people (Saksena *et al.*, 2011); the transformation of the Rwandan

coffee sector allowing the increase in Rwandan exports (Guariso *et al.*, 2011); land tenure regularization on investments, management of soil of biodiversity conservation measures have contributed very much to economic growth of Rwanda (Ali *et al.*, 2011); the introduction of free 12 years basic education program (Nkurunziza *et al.*, 2012); an intensive family planning (Kabano *et al.*, 2013), and recently a performance base evaluation was introduced in all public institutions in Rwanda. All of those measures have produced satisfactory results in terms of improved health care, education for all and reduction of illiteracy for old people where Educational attainment improved over time.

However, since 2010 Rwanda has been recording the strong economic growth and improvements in household living standards. According to the BNR's statistics, between 2001 and 2011, Rwanda averaged an yearly progress rate of high than 8 %, and GDP raised by 60 % in real terms (BNR, 2010). Over the past two periods, the government of Rwanda has substantially developed the service sector, for the purpose of economic diversification, which made the share of agriculture in the GDP to decrease significantly even though it remains the main pillar of the Rwandan economy and poverty reduction as well in the fact the substantial increase in agricultural productivity contributes to the reduction of poverty. For example in 2011 as the effect of economic diversification, the households earning income from non-agricultural activity increased to 70% compared to 30% in 2001. The diversification of Rwandan economy required a huge amount of public investments in rural areas in irrigation projects particularly in the Eastern province and in the factories designed for the transformation of agricultural products so that the booming agricultural productivity. Moreover, the fertility rate has decreased over the past two decades in decreasing the family size which in turn makes the poverty fall consistently (NISR, 2012).

Furthermore, the government of Rwanda has been introducing and implementing several socio-economic reforms for the aim of reducing poverty in Rwandan society since 1994. Rwanda in recent years has consistently developed and implemented its policies and strategies for poverty reduction encompassed in the framework called the Economic Development and Poverty Reduction

Strategies (EDPRS) with sounding sharp measures including micro-insurance programs, public works programs, preventing and responding to macro shocks, financial distress and environmental degradation, tackling health problems, building strong administrative institutions for ensuring equal citizen rights, peaceful cohabitation and conflict resolution.

The first EDPRS was launched in 2008 for the period of five years and its implementation ended in 2012 and thereafter in 2013 after evaluating the implementation performance and results, the government of Rwanda launched EDPRS II in 2013 for again the period of five years which will end in 2018. Regardless of the big lessening in poverty over the past two decades, poverty is still high 39.1% of the Rwandan population still lives under the poverty line and 24 % cannot encounter for their most rudimentary food wants, which means that Rwanda has a lot to do in the perspective of poverty reduction (NISR and MINECOFIN, 2012). Therefore, they are various reasons why Rwanda can learn from China in terms of poverty reduction policies and strategies. China started by reforming rural areas through land redistribution and investing in agricultural infrastructure, developing agricultural technology, promoting science and technology, decentralization of powers and authorities to local government, developing global networks and opening its economy to international trade, etc.; those practices are very similar to the ones that Rwanda has been designing and implementing over past two decades.

Rwanda's vision 2020

Rwanda's Vision 2020 programme aims at making the country a middle-income knowledge-based economy and more prosperous, with high life expectancy, healthy people, educated people, and GDP per capita income of \$ 900 by 2020. To achieve this objective, it is important to put more focus on a active and innovatory private sector, quick knowledge and technical and vocational training, good governance, smart public finance management and a receptive and powerful public sector as a crucial devices for economic conversion (GOR, 2000).

The Poverty Reduction Plan is prepared based on Rwanda's longstanding vision, interlocked in the Vision 2020 which includes

Ch.4. Lessons learnt for Rwanda from China’s poverty reduction strategies

the thematic areas including good governance, macroeconomic stability, human resource development, increasing productivity and employment opportunities, promoting regional integration and open market economy (Mann & Berry, 2016). Some of the Vision 2020 achievements indicate that the previous target of GDP per capita of \$ 900 which was set in 2008 was then revised in 2012 to be \$1,240, due to favorable conditions and positive perspective. In the similar epoch the average GDP growth rate of 8% per year, life expectancy reached 55 years, infant mortality rate was declined from 107% to 50%, maternal mortality rate was reduced from 1,070 to 200, the population in extreme poverty was decreased from 64% to less than 10% , child malnutrition was reduced from 30% to 10 % of the population, basic education enrollment increased from 72 to 100%, and the enrollment in tertiary education was increased from 1% to 6 %, gender balanced in decision-making institutions increased from 10% to 40%, HIV/AIDS prevalence rate was decreased from 13% to 8 %, malaria-related mortality rate was decreased from 51% to 25%, the growth rate of the industrial and services sectors increased from 7% to 11 % and off farming jobs increased from 200,000 to 1,400,000 per year (GOR, 2000; MINECOFIN, 2007).

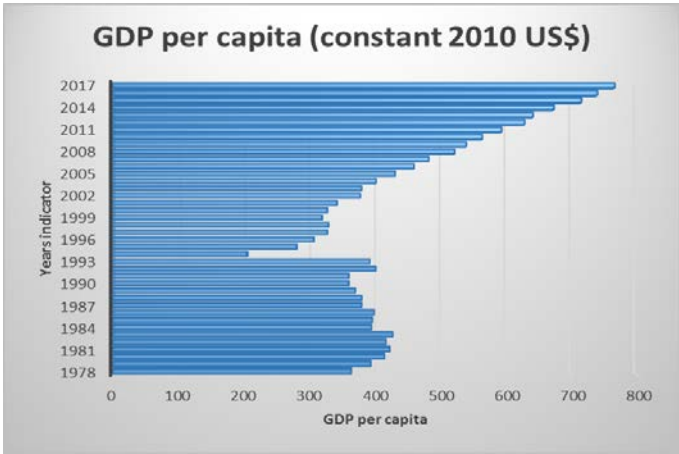


Figure 8. *Trend of Rwanda GDP per capita (Constant 2010 US \$)*
Source: *Computed from World Bank, (2018)*

Rwanda's economic development and poverty reduction strategies

EDPRS stalks from Rwanda's Vision 2020 and encompasses medium-term activities which have to drive to the accomplishment of the Vision's objectives. The major aims of the vision is to accelerate Rwanda's development to become a middle-income state and generate a good quality of life for entirely citizen via continued average GDP growth of 11.5% and enhanced poverty lessening to be lower than 30% of the populace by the year 2020 (MINECOFIN, 2013).

The EDPRS is an important instrument for poverty reduction. The first EDPRS was covering the period of 2008-2012 defining the country's developmental objectives, high preferences, and strategies to accelerating the private sector development which will accompany the government and remains the major player and catalyzer for the economic growth. The EDPRS I was fully supported by Rwanda's development partners and it was designed to extend the PRSSP-III in order to enhance the three priorities areas such as growth for Jobs and exports; improved governance and leadership, Vision 2020 *Umurenge* designed to impact rural development and hence poverty reduction; all for the end aims of reducing shocking poverty and inequality (MINECOFIN, 2013).

The continuous progress for Jobs creation and Exports leading aims at boosting economic progress by improving competitiveness, private investment and novelty, agrarian production, exports, and technology competencies. These need quit ambitious procedures to lesser the expenses for conducting business counting improvement of technical abilities and upgrade the schooling in science and technology to lessen the scarcity of trained labor and to increase private sector competitiveness capacity. Other urgencies comprise upgrading economic infrastructure, upgrade of the use of updated technologies, machine intelligence and expanding the financial division.

The Vision 2020 *Umurenge* is a major pillar for poor rural development and aims at addressing the extreme poverty and vulnerability. And that vision has three constituents: (i) public works which intend to make non agricultural work opportunities and the constructing of community properties and rural basic

infrastructures; (ii) development of cooperative, and small and medium-sized enterprises (SMEs) to promote private enterprise; and (iii) providing social services and support to the landless households that are incapable to involve in public works agendas (RLDSF, 2012).

The prize of Governance and leadership aims at maintenance of peace and security; building strong and capable institutions; upgraded corabollation with entirely countries; advertising of equity and social justice, human rights and the rule of law; and delegation and service conveyance. It, however, accompaniments other continuing plans intended at making well-defined property rights, business enabling environment, well-organized public management, and the fighting against corruption (MINECOFIN, 2007). The EDPRS II of Rwanda is divided into five main clusters along with each cluster outlining its priority areas: Economic transformation, rural development, production and younger generation employment, responsible governance, foundational and cross-cutting matters (MINECOFIN, 2013).

The objectives of EDPRS I was, therefore to speed up growth and economic diversification with private sector led development, and decentralization of governmental administration in order make people participate in the decision-making process, accompanied by enhanced accountability. Since the launch of EDPRS, I in 2008, living conditions for Rwandan have been improving dramatically follow-on important reduction in poverty and income inequality. The household consumption increased by 2.5% per year and income inequality decreased by 44.9% in 2011 (NISR, 2012).

Under EDPRS I, tremendous socio-economic achievements have been made. The economy raised sharply, accompanied by important poverty lessening. Economic progress was motivated by an upsurge in agricultural production, exports, and robust domestic demand. For a period from 2008 to 2012, the real GDP growing with an average of 8.2% per annum, with the per capita growth of 5.1% per annum. The increase of service sector output has been the core driver of economic progress in Rwanda under EDPRSI. The main areas of services expansion include telecommunications, wholesale and retail trade, and

transportation. The service sector raised by an average rate of 10.0% per annum and contributed nearly 52% of national production throughout the EDPRS 1 period. The development of the service sector in Rwanda under EDPRS I considered for over half of total GDP progress of 53%. The industrial development was a key driver of Rwanda's economic growth whereby the industrial sector which has been growing at a rate of 9.8%, and contributed to the extent of 15.4% of national output and 20% of total growth for EDPRS I period. The agriculture industry grew at 5.4% through the scaled-up public investments for instance the crop-intensification programme (CIP), and the farming sector yielded 32.7% in GDP and 28% of total progress for the EDPRS I period. During such period, income inequality reduced significantly from 0.52 to 0.49 Gini coefficient (NISR, 2016).

Thanks to impressive success and the experience gained from EDPRS I, the government of Rwanda launched the second phase of EDPRS in 2013. The EDPRS II (2013-2018) focuses on four priorities including economic transformation which is designed to stimulate rapid economic growth with targeted 11.5% of growth rate and hence change Rwanda's economic structure; rural development which aims at upgrading the livings of rural populace across land consolidation and rural settlements, agriculture, rural finance, youth employment through jobs creation by increasing the shift from agriculture to services or non-farm jobs and shaping the competitive skilled labour, and good governance which focuses on public accountability, transparency, and effective service delivery. The emblematic goal of EDPRS II is all about accelerating progress towards making Rwanda a middle-income country and a good living condition for the whole Rwandan population and accelerate poverty decrease trend to be low than 30% of the populace of Rwanda. This goal will undoubtedly achieve thanks to the fact that the government is fully committed and determined to that goal as it demonstrated by the gradual increase in national budget from \$260 million in 1998 and \$1,768.3 billion in 2015- 16 fiscal year whereby 64% of the national budget was domestically financed, and recently the national budget for the 2017-18 fiscal year is 80% domestically financed (MINECOFIN, 2013).

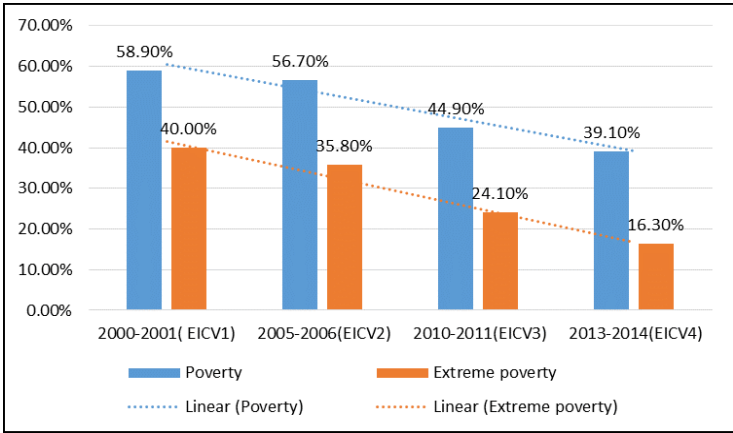


Figure 9. *Situation of Rwanda’s Poverty Reduction in Rwanda*

Source: Computed from National Institute of Statistics of Rwanda (NISR),(2015)

Understanding Rwanda’s economic growth patterns since the 2000s

Rwanda's economic growth is just explained by many factors including the strengthened private sector development, counting the progress of socio-economic infrastructure, liberalization of trade, and restructurings and capability improvement in PFM, restructurings focused on upgrading the business environment, promotion of the exports sector and privatization of state- owned enterprises. The Rwanda’s economic growth success was driven by sharp development of private sector, particularly the progress in the services sector where growth of 40% of growing in real Gross Domestic Product (GDP) went beyond the government’s expectations. Another driver of Rwanda’s economic growth is the increase in agricultural output since 2008 accounting for 20% of the total increase in consumption.

The large finance injection of Official Development Assistance (ODA) to Rwanda and the overhaul in agricultural activity, construction, and services sectors were the major key drivers to the Rwandan economic growth. The construction sector has been the more driver growth and employment, and itself accounted for 6 % of GDP and it raised at 10 % per year during the previous decade. Transport, communications, and tourism were also other major

engines of economic progress over the last decade. In addition to this, the joining of East African Community (EAC) created numerous growth opportunities especially in the agro-processing and manufacturing industries, and transborder commercial activities, this regional economic integration contributed to the level of 14 % of nominal GDP in 2007 and hence made Rwandan economy to be much competition (RoR, 2017). The rapid growth and expansion of the Rwandan economy also were due to the large increase of public investment over the last decade which contributed a significant share in GDP growth to 20 % of GDP in 2000 and to 26 % in 2007 (World Bank, 2016). The public investments were largely supported by snowballing domestic resource enlistment and an increase in outside support. The key priorities in public expenditures include infrastructure and human resource development, strengthening public administration, military and security system. Since the creation of the Rwandan Revenue Authority in 1997, considerable efforts were made in snowballing government incomes, from 11.4 to 13.7 % of GDP respectively in 2001 to 2007, and to 13.9 % in 2008, thus subsequently reducing the dependence on international aids (MINECOFIN, 2012).

The economic growth in Rwanda since the 2000s has led to an increase in employment opportunities, agricultural production. Agriculture output increased from 18% in 2006 to 25% in 2011. This increase in agricultural productivity continues to contribute so much in elevating the standards of living for many Rwandan population over the last decade, and thus this social improvement was accompanied by a significant fall in poverty and inequality with the Gini coefficient decrease throughout Rwanda, from 0.52 in 2006 to 0.49 in 2011 (NISR, 2012; World Bank, 2016; World Bank, 2013)

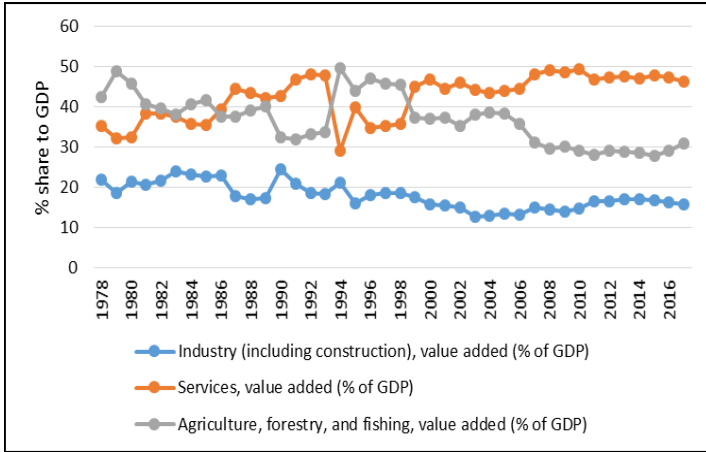


Figure 10. Contributions of Rwanda's economic sector to GDP

Source: Computed from World Bank, (2018)

Governance and leadership

The Government of Rwanda adopt a strategy of zero tolerance concerning corruption and Rwanda ranks better in the world but however, it is still needed to reinforce governance leadership, however much more necessities to be done in the domaine institutional capacity development. A key area of governance improvements in Rwanda has been Public Financial Management (PFM) whereby improvements focus on skilss development for accounting, auditing and supply chain management, and administration of public investment at different levels of government. The Government has taken serious measures to reform its key public institutions in order to improve the service conveyance to the private sector including (i) merging in 2008 several government institution in one entity called "Rwanda Development Board"; (ii) creation of Commercial Registration Services Agency (CRSA), (iii) streamlining land registration transactions through a newly created Office of the Registrar of Land Titles; and (iv) establishment of agencies incharge of promoting investment and exportation activities (Richard *et al.*, 2013).

The decentralization Policy of the government of Rwanda is a paramount factor of good and sustainable governance. To build a flexible governing system allowed very much the monitoring and

Ch.4. Lessons learnt for Rwanda from China’s poverty reduction strategies

accountability of public servants' action through service charters. The government efforts in promoting transparent and accountable governance system were sustained by a number of government policies which in turn produced great results in terms of the country's competitiveness, economic growth and the public sector’s effectiveness. These tremendous efforts allowed Rwanda to be ranked 7th most efficient government globally in 2015, and in the same year Rwanda was classified among the seven least corrupt countries in Africa (WEF, 2017). According to the assessment done by the Rwandan Governance Bord on leadership efficiency, corruption level, transparency and accountability in the public sector, Rwanda gained 79.04 % of positive view and progress (RGB, 2014).

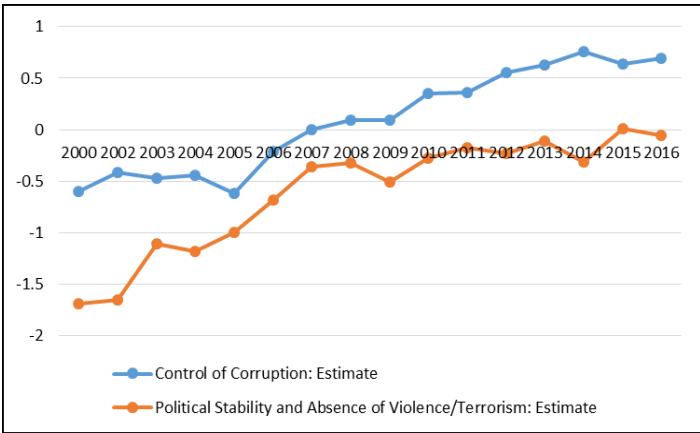


Figure 11. *Rwanda’s Controle of corruption, Political stability and absence of violence*

Source: Computed from World Bank, (2018b)

Social and human development

Whereas Rwanda’s social indicators remain weak and a lot of improvements still to be made, remarkable improvement has been achieved since the late 2000s in various domains counting gender equality, adult literacy, admissions in primary and secondary schooling, basic health services, and the deterrence of the spread of HIV/AIDS. The involvement of women in decision-making institutions and in other positions of influence is now about 60 %, and education for all in primary and secondary education with the

initiation of free and compulsory twelve years basic schooling has increased to above 90%, with equality amid boys and girls ([United Nations, 2015](#)). Free and compulsory vaccination rates for children and other trends of are trends under the Millennium Development Goals (MDG) have been among the highest in sub-Saharan Africa. In general poverty incidence and extreme poverty decreased from 60.4 per cent in 2000/2001 to 56.9 per cent in 2005/2006, a decrease of 3.5 % points and 41.3 % to 36.9 % in 2005/2006, the inequality as measured by Gini coefficient was slightly increased from 0.47 to 0.51 respectively in 2000/1 to 2005/6 ([NISR, 2007](#)). The current speeding up of economic progress, predominantly in the agrarian sector, and the adoption of social protection plans in EDPRS, are predictable, with donor funding.

The home grown solutions such as *“one cow per family programme”* which was initiated and launched by H.E Paul Kagame the president of Rwanda in 2006, is aimed at enhancing social protection and thus fighting against the severe malnutrition especially among the children and as a mechanism to reduce poverty in rural areas and boost agricultural output, and thus contributing to improve the livelihood and nutrition among rural poor population. The majority of Rwandan population is still living in rural areas whereby 85% of the people live in rural areas with around 80% solely live on modest agriculture for their livelihood ([NISR, 2012](#); [Bizimana et al., 2012](#)). Around 350, 000 cows have been distributed by 2017 ([RAB, 2017](#)).

However, In 2003, the government of Rwanda introduced the famous countrywide Community-Based Health Insurance Scheme which significantly contributed to the upsurge in admittance to health care and make poor Rwandan people afford health care. Adhesion to this scheme is family based, where compulsorily all family members have to be enrolled. The ministry of health of Rwanda reported that in 2010, the coverage of Mutual Health Insurance attained the level of 91 % ([Makaka et al., 2012](#)). In 2009, Rwanda introduced the free and compulsory 9 Year Basic Education (9YBE) for all young children between the age of 7 and 15, and as result, the primary school enrollment rose to 91.7% ([Action Aid, 2012](#)).

Rwanda has continuously made dramatic improvement in terms of welfare, schooling, and healthcare. In 2015, Rwanda performed well in health improvement, scoring 85.1 and ranking 7th in Africa. Rwanda has the highest primary and secondary schools enrolment rate in Africa and is one of the best-performing countries in fighting against corruption in Africa. Rwanda has been making numerous social changes by investing in people as its important resources, and in 2015 Rwanda's education scored 84.75% points (RGB, 2014; WEF, 2015).

Public investments management

Through the EDPRS, public investments to, amid other goals, upgrade infrastructure development and decrease the expense of conducting business, the administration of public investments has arisen with a high significance action in the restructuring agenda of the government of Rwanda. In early 2009, a new public investment policy that was put in place with the aims of selecting and implementing rational public investment projects. As a result of this policy, public investments have grown quickly, funded by snowballing domestic resource mobilization and outside funds (IMF, 2011).

The report from the World Bank show that the stock of external private capital augmented from \$ 1,404.1 in 2013 to \$1,752.0 million in 2014. FDIs has become progressively significant as a most important source of investment funds accounting for 22.1% of Gross Fixed Capital Formation (GFCF) in 2014 from 16.7 in 2013. The FDIs contributed to the Rwandan economic growth to the extent of 14.1%. In 2014, Foreign Private investment was driven by ICT, Mining and Finance and Insurance activities, with 70.2 % for the total inflows in GDP (World Bank, 2015).

According to the WEF report (2015) on doing business and global competitiveness, Rwanda was among the leading economies in Africa in policy and structural reforms. Open Knowledge International's Global Open Data Index (2015) ranked Rwanda as a country with the most available open government in Africa. In 2016, it was noticed that Rwanda has created the most favorable business environment with simplified modalities for registering and starting new businesses, reduced time for issuance

Ch.4. Lessons learnt for Rwanda from China's poverty reduction strategies of various permits. Access to credit and financing were also eased by permitting banks the right to scrutinize credit situation of all borrowers and the loans granted be reported to the BNR. Further, Rwanda decline the number of required trade papers and improved its joint border movement procedures through ICT (WEF, 2016).

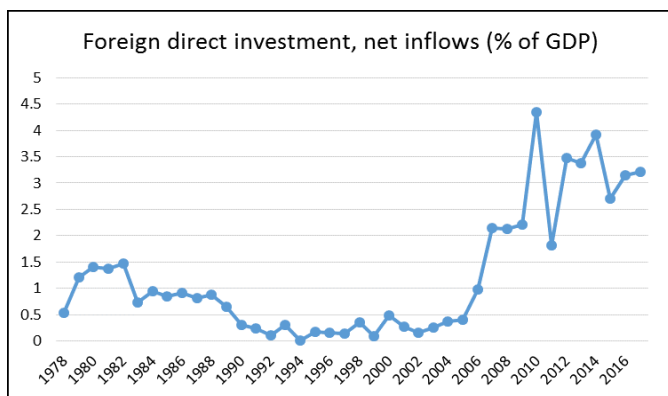


Figure 12. Rwanda's FDI, net inflows (% of GDP)

Source: Computed from World Bank, (2018)

Policy lessons from China for Rwanda

After having understood China's successful reforms and fight against poverty, we need to draw some lessons from China's poverty alleviation strategies for Rwanda, it is noteworthy to know that China is dissimilar from Rwanda especially in the size, many natural resources, better geographical location, the high rate of economic progress realized in the previous 35years, and a substantial industrial development, high innovations and creativity with a robust leadership managerial system, the capability to organize resources for poverty lessening programmes. However, Rwanda has made considerable progress in fighting against poverty it is on the right track in terms of development since 1994s, it is lagging behind China and other many other emerging Asian economies.

Lessons for Rwanda: Economic development strategy and enabling environment

In general China's economic development approach and additional connected policy measures such as reforms in strategic markets and institutions served as the cornerstone for poverty lessening fight in China. In overall, the China's poverty decrease strategies and schemes have focused in every single very poor rural area of the state and made China's economic progress more pro-poor. Therefore, China's stable and sustainable economic growth can serve as an economic role model for Rwanda in many different ways for the poverty alleviation purposes.

China's advance strategy over 35 years encompassing growth of agriculture set as a precedence at little levels of incomes and a opportune move to labor-intensive production industries. In the early 1980s, China started to promote township and key village projects, and in the same period it then create special economic zones in Shangai and Shenzhen and a number of other sites to stimulate foreign direct investments (FDI) to develop labor-intensive production industries and technology transfers. Rwanda can follow the Chinese economic development model putting more efforts into attracting FDI which in turn provide unlimited labor supply and are very important in boosting economic growth and exports (Chen *et al.*, 2015). It is in this perspective that Rwanda has improved private sector progress, counting the enlargement of socio-economic infrastructure, liberalization of trade, and reforms and capacity development in PFM, upgrading in the business environment, promotion of the exports area, privatization of state-owned enterprises, and intensifying reforms in different domain in line with poverty reduction.

Rwanda needs to learn from China whereby the development strategy is based on political stability, economic and conducive socio-economic environment. However, the agricultural reforms for poverty reduction have been the most successful and catalyzer in the economic growth of China. Ravallion & Chen, (2007) indicated that the Chinese agricultural growth is appraised to have donated four times more to poverty lessening likened with the increase in both manufacturing and in services; and similarly Rwandan agricultural growth supply more to poverty reduction

Ch.4. Lessons learnt for Rwanda from China's poverty reduction strategies than growth driven by other economic sectors such as services and manufacturing (Diao *et al.*, 2010).

The quick agrarian growth in China since late 1970s has been determined by a number of sharp measures such as redistribution of resources from heavy weight industries into farming subdivision and following with upsurge in farmhouse prices, distribution of agricultural land to individual households, and boosting in the volume of agrarian inputs such as fertilizers, chemicals, plastic films, electricity and complemented by strong irrigation system. Agricultural development in China has also been powered by a huge and enabling internal market for agricultural produce and effective pricing system. Given the upsurge in agricultural production and incomes, the rural areas population in china were stimulated to differentiate their actions into non-agricultural activities for the purpose of increasing their income (Ling *et al.*, 2013).

In line with agricultural development and transformation of rural household revenues, a various valuable lessons from the quick development of agriculture which contributed to poverty alleviation in China can be pinched for Rwanda. China's poverty lessening programs have a robust emphasis on rural settings and agrarian development has been led by the government. An increase in the reallocation of resources to agriculture industry for instance investment in irrigation and rural roads, and upsurges in farmhouse prices for agricultural products and hence incomes. Moreover, enabling and supporting internal market is also essential to safeguard farmhouse prices through government backing, for example the subsidies on farmhouse input, government investments in rural infrastructures, homebased price assistance and trade safeguard which are important ingredients for agricultural growth and poverty decrease.

Following the contribution of farming to poverty lessening, at low-income levels the poverty alleviation programs should focus first of all on agrarian development, especially agrarian growth in the poor and remote areas. Therefore, given the upsurge in revenues, more focus should be attributed to the improvement of manufacturing industries and service sector so as to expand

farmhouse incomes and offer a feasible market for sustained agrarian development.

China's open door policy constitutes a major lesson to draw for Rwanda, whereby it is important to create local foreign trade corporations and then decentralize the decision making process about exports and imports to local administrations or such external trade corporations. It is also necessary to create many special economic zones and border open cities for the intention of attracting exports and FDIs. It is also necessary for Rwanda to introduce tariffs, quotas, and licensing and lessening or removing all restrictions on exports and imports. Further, it is also worthwhile to smooth and liberalize foreign exchange.

China's growth is on a gradual track than any other country in the world. China is heavily investing in research and development, placing creativity and innovation at the center of its development. The Chinese public expenditure on research and development accounts for 15% of the world's total, and Rwanda needs to learn from this impressive Chinese development practice.

Rwanda must learn from China on how to address the constraints of productivity through fiscal and financial dressing in order to have rapid and sustainable growth. China has gained a high increase in productivity through the development of the agricultural area, accompanied by the development of township and village enterprises and restructuring of state-owned enterprises. Rwanda can strengthen its manufacturing and service sectors, develop its agro-food processing industry, expanding exports of vegetables and beverages and diversifying through exports can support Rwanda to upsurge productivity and scale up into worldwide markets.

The productivity and economic growth in China have been tremendously pro-poor and sustained by sharp market reforms, and the improvements in agriculture and service sectors can help Rwanda reduce poverty. In order to have rapid and sustainable growth and eradicate poverty, Rwanda needs to learn from China, by engaging in the development of human capital with intensive and continuous investment in education and improving quality of education so as to produce the required skilled labour force, especially in core fields such as science, technology, engineering, and

mathematics (STEM). Another important focus for Rwandan human capital development is technical and vocational education and training (TVET), field in Rwanda needs to continue supporting and develop. China's achievement in increasing the skilled labor force required to adopt various types of technology, and thus create the conditions for investments in manufacturing, especially in this domain, Rwanda has a lot to absorb from China's experience in order to implement new technologies and thus create jobs and hence diversify its economy. In order to sustain growth and human capital, it is important to have a viable health system. In this regard, Rwanda needs also to learn from China experience of having high-quality healthcare and broadening health care accessibility, especially in rural areas.

Lessons for Rwanda: Particular poverty policies and projects

The Chinese government played a key and distinguished role in poverty alleviation and economic development. The successful poverty lessening strategies and programs in China have been distinguished by the government's solid commitment and will power in fighting against poverty and the government's ability in call up a big amount of resources for poverty lessening programs. In addition to this, the government-led poverty reduction has been fuelled by the establishment and performance of solid poverty reduction institutions and a snowballing amount of supports earmarked by the government for poverty reduction through well managed of poverty reduction funds. The market liberalization pointed out the best interests of poor people China's success against. In support of this policy, the farmers were given market incentives included in the institutional reforms. However, Rwandan farmers can dramatically appreciate this good policy (Qu, 2017).

China's poverty lessening strategies and programs are singularly distinct with government-led and development-oriented, pick out the very poor countryside settings and poor families, focusing on countryside infrastructure projects. China has performed a foremost role in poverty lessening by deploying resources for poverty decrease and instituting particular national

poverty institutions, and the government is competent of pledge large-scale poverty alleviation projects as a result for reducing poverty occurrence significantly in a comparatively to small period. Rwanda can study from the Chinese performance by creating particular institutions for poverty reduction and by distributing more funds for countryside development and poverty decrease programs. The government of Rwanda can reinforce its public administration system for improved project management dimensions by establishing specially designed poverty reduction institutions with specialized skills and continuous training in poverty reduction strategies rather than be contingent mostly on outside consultants.

An effective lesson that Rwanda can learn from experience of China is that for poverty reduction programs directly pick out poor families is more operative than indirectly pick out poor households via rural enterprises which offer occupation occasions for poor families, as they will be additional expenses for monitoring the poverty effects of the enterprises.

Additional lesson connected to enterprise development in China is that the government poverty programs can emphasis originally on small-scale agro-processing enterprises used by domestic farmers equipped with the basic manufacturing technology and administration competence in the poor settings. The delivery of financial assistance for instance subsidized credits should be accompanied by technical teaching and administration support. As countryside infrastructures are important for income-generating doings handled by poor families, the major part of Chinese poverty supports has been utilized for countryside infrastructure projects, mostly on countryside roads, upgrade of land, potable water, and irrigation, that has donated a considerable deal to an upgrading in agricultural production and family incomes.

The poverty reduction institutions in China have also operated with poor families on biogas and sun stoves by offering funds and technical provision, in this perspective, Rwanda has also created the Business Development Agency (BDF). Rwanda has to consider that a greater amount of poverty lessening supports are necessary to be distributed to countryside infrastructure plans, particularly

on countryside roads, upgrading of land and irrigation, so as regards to offer marketplace admittance and essential environments for farming productivity for poor how valuable lessons for Rwanda.

The government of Rwanda should always make need assessment for development and poverty projects. The Chinese performance in poverty reduction also indicates that even at little levels of revenue, with very limited government economic means and shocking large-scale poverty, development-focused programs pointing poor settings can be successful. It is significant to note that in order to allocate effectively and efficiently the scarce resources, it is a must to improve the production conditions. However, with the decline in poverty incidence and increases in income, poverty programs would be constantly targeting more poor societies and poor persons, straight revenue transfer can also be initiated and more determinations should be formed to shape the capacity for the poor groups and poor persons.

The lesson for Rwanda: Learning for innovation and capacity building

The central significance of human capital and capacity building for poverty reduction and sustainable development and for the sake of building a harmonious society, China has implemented development-oriented poverty reduction projects which are consistent with the scientific and technological advancement. Research in science and technology played a key role in poverty reduction in China. In the early 1980s, the publicly funded autonomous think-tank group and much other influential research in the reform process were created, studying the local experiment and merits with the Household Responsibility System (HRS) that in provided recommendations that convinced national policymakers on the motive of scaling up. China's pro-poor policies depend on the level of empowerment and participation of poor people in the reform process. Since the late 1970s, China has built and maintained a strong public administrative system to make a global capable state. Indeed, the administration and leadership of townships and rural villages have been more

Ch.4. Lessons learnt for Rwanda from China's poverty reduction strategies accountable for their economic development ([Herbst, 2000](#); [Clapham et al., 2001](#); [Van de Walle, 2001](#)).

The lesson for Rwanda: Asset creation

The development necessitates investment in physical capital for instance the plants, machinery, raw materials, etc. these are fundamental to industrial production. Investment in significant technology and machine intelligence is also significant due to the fact that technology is frequently personified in capital goods for example plants and machinery. Growth is ultimately linked with the investment in capital and labor and upgrading the output from these factors of production via the procedures of innovation and technological assimilation. However, possessing the assets such as land, machinery, property, plant & equipment perform a key role in increasing the opportunities for development and access to finances which in turn can allow more households the opportunity to invest.

The land settlement should be regarded as most important in reducing rural poverty, and China proceeded for the distribution and consolidation of land which consequently brought a qualitative change in incomes of the countryside populace because rural poverty is usually mostly observed among the landless and small farmers. Rwanda largely possesses poor physical infrastructure, while are very crucial to growth. In this regard, impressive lessons are to be drawn from China's advancement in physical infrastructure through dramatic investment in physical capital for instance roads and highways, railways, and telecommunication assets ([Rosen & Hanemann, 2009](#)).

Rwanda and China poverty cooperation focus areas

Poverty collaboration between China and Rwanda is a reciprocal studying process even it uneven and imbalanced. There is now a extensive range for Rwanda-China collaboration in poverty decrease. The Chinese Government has started providing development and technical and financial assistance to Rwanda by supporting agricultural projects and by offering loans and grants, scholarships for long-standing and short-course training for expertise sharing. China is increasing its support, trade and

investment plans which as well have poverty impact in Rwanda. As China is strengthening its global influence, there is, yet, a hope for upgrading on the current collaboration, and more significantly, there will be boundless prospective for increasing poverty collaboration between China and Rwanda.

A more systematic knowledge sharing and technology transfer should be more essential and the starting point for poverty cooperation between Rwanda and China. It vital to expand the effectiveness of the short-courses and long-standing training for Rwandan youth whereby the development professionals and experts from China, who generally have skills on China's poverty lessening and development involvement or on sure practical field, may have inadequate information of poverty in Rwanda, Alternatively, the professionals from Rwanda can discover it hard to comprehend the definite Chinese strategies and programs for poverty reduction. This is why a mutual cooperation and learning from each other between Rwanda and China is necessary. The hands-on training focus on the function of farming expansion services, progress, and administration of small-scale countryside enterprises, medical and agrarian insurance for the countryside poor, building and maintenance of minor countryside infrastructure plans, construction of township and key village projects, intrinsically technical familiarity can be used more straightforwardly in Rwanda. The cooperation between Rwanda and China will definitely focus on providing support to the knowledge platforms and centers of excellence between the two countries as a means of speeding up the exchange of technology especially in the agricultural sector.

As we have discussed before, China needs to cooperate with and learn from Rwanda in particular and Africa in general. Rwanda has marked higher growth performance in the last decade towards improved economic governance. The new cooperation prospects between Rwanda and China is being dictated by the increasing demand for natural resources from emerging economies including China. As Rwanda has a major deficit in infrastructure, the top priority must be given to the development of rural and urban infrastructure as the calyser of regional and African integration needed by the African Union, it is important to stress

Ch.4. Lessons learnt for Rwanda from China's poverty reduction strategies that thanks to that urgent growth of development infrastructure, China will be the top service provider and development partner. The collaboration between China and Rwanda should be reinforced in terms of direct investment and trade, the Chinese Government should offer further technical and financial assistance for poverty lessening in Rwanda throughout augmented training and capacity building exercises, collaborative research and discussion and throughout improved support effort in poverty alleviation for Rwanda.

Recent Forum on China-Africa Cooperation (FOCAC) highlighted the major areas for Africa-china cooperation including trade and investment, China-proposed belt and road initiative, youth employment and development, poverty alleviation, exchanges in culture and art, education, sports, strengthening the media, women and young people, sharing of knowledge, develop and strengthen institutions and governance, promoting peace and stability in Africa, environmental management (H.E Xi Jiping opening speech, 3rd September 2018).

Conclusion and policy recommendation

Conclusion

China's poverty reduction strategies and programs for poverty reduction over the last 35 years have been miraculous. This dramatic progress against poverty in China was induced by a high speed of economic development, pro-poor growth strategies and the government's strong commitment against poverty. The Chinese government-led poverty programmes have had a substantial influence on the increase of incomes and capabilities of the poor communities and poor persons in rural areas. Throughout a procedure of studying and capacity building and via the collaboration with global development partners, China's poverty reduction policies and programs have become more sharing and demand-oriented, with an snowballing prominence on capacity building for the poor societies and poor persons, and for poverty lessening agencies.

As long as the eradication of poverty is a serious concern for Rwanda, learning from China has got important implications for Rwanda fighting against poverty. The government-led and

development-targeted poverty programs have donated to poverty lessening in China by upgrading countryside infrastructure and hence enlightening the production situations in poor rural settings. The government poverty programs have also delivered small-credits and workshops to the poor, which stretch to increase their revenues and enhance their capacities. It would naïve to say that Rwanda can copy and paste all China's growth and poverty reduction experience because they have a different history, culture, and geographical settings, but however it has to create its own conditions or continue homegrown solutions to define its own growth path.

Recommendations

Rwanda and China have to deepen economic reforms by restructuring their economies and facilitating the broad pro-poor growth. The effective attraction of foreign direct investments (FDI) is a major weapon to galvanize economic growth and encourage affordability, which is essential to promote integration into the worldwide economy. In addition to this, FDIs are usually fostered by novel technologies and strong management skills that strengthen economic transformation. It is also important to explore and take advantage of lucrative foreign markets by increasing participation in the global economy. Rwanda must diversify its economy in order to deepen economic transformation important to inclusive growth and poverty lessening catalyzed by industrialization. The development of social and physical infrastructure is important to sustaining economic progress and poverty reduction and should be set among top priorities.

Rwanda itself should learn from the Chinese approach to setting short-term priorities for poverty reduction and sustainable progress. It is therefore important to stress that implementing policies that aim at increasing households income, creating more employment opportunities, agricultural productivity, rural recapitalization would extend services and support, countryside credit and financial services to micro and small-scale enterprises which are key to rural poverty eradication.

Rwanda should continue strengthening schedules to upgrade the standard of life of the poor and stabilize lives of the populaces

Ch.4. Lessons learnt for Rwanda from China's poverty reduction strategies in the rural settlements by safeguarding admittance to elementary health services, primary schooling, water and sanitation facilities, energy and housing facilities. Another Chinese example which can serve as an important recommendation for Rwanda is the establishment of training and occupation opportunities for unqualified younger generation and enablement of the trained youth to involve in income-generating doings. Beyond the middle to longer term, it is indispensable to expand the economy and to increase the proportion of productive investment in Rwanda in order to attain sustainable progress and poverty lessening. The rate of savings must be increased in order to boost domestic investment, Attracting foreign investors must be strengthened. More specifically, efforts must be concentrated on high influence productive ventures which can lead to the real transformation in a comparatively short period.

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5 Fiscal policy and the Ricardian equivalence: Empirical evidence from Morocco

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Youssef Oukhallou^{b†}

Introduction

In the aftermath of the 2008 financial crisis, fiscal deficits have drastically increased in a large number of countries, as their public income and expenditures have ceased to evolve in the same pace. This budgetary crisis was first observed in several advanced economies, e.g. Greece, Portugal, Spain, France and the United States. Nonetheless, a second-round effect was driven on many developing countries, such as Morocco. The latter was bound to fiscally support the domestic demand in order to compensate the significant drop in exports, as the foreign demand regressed because of the recession from which many European countries suffered. This phenomenon was followed by a

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substantial rise in the public debt, in advanced economies as well as developing ones.

Despite the gradual improvement that characterised budget deficits in both advanced and developing countries mostly as a consequence of draconian austerity measures, the problem of public debt is likely to persist in the medium term given the significant financial needs and the scarcity of additional public revenue. This trend is confirmed in the Moroccan framework, where the government's debt went from a level of 45.4% of GDP in 2008 to 64% in 2016. As a consequence, it is merely logical to think of what would be the economic behaviour of households when coming up against such rise in public debt. In this framework, the notion of Ricardian equivalence is important when examining the potential mechanisms that link fiscal policy to household consumption and savings. Basically, this theorem states that households, being aware that higher levels of government debt in the current period will result in higher taxes in the future, tend to save accordingly. The present value of future savings (based on a given discount rate) would completely compensate for the deficit, so that the substitution of the debt for taxation does not affect the wealth of the private sector (Descamps, & Page, 1994). Consumption would remain unchanged, which contradicts the Keynesian theory which argues that an increase in the public deficit would drive an upward influence on aggregate demand. In a nutshell, fiscal policy's macroeconomic effectiveness is, to a significant extent, tributary to whether it is the rule-of-thumb households that are dominant in the economy or the Ricardian ones.

It is worth bearing in mind that, for the principle of equivalence to be valid, the intergenerational transfer mechanisms must be *operative*, in the sense that individuals must actually plan to leave a positive legacy to their descendants. Also, in order for households to be Ricardian, they need to decide their consumption based on their permanent income, which depends on the present value of wages, after tax deduction. Thus, the discounted value of expected future taxes by said households would be exactly equal to the present drop in taxes or the present increase in public spending. In

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other terms, households must be forward-looking and abide by the hypothesis of rational expectations.

The macroeconomic repercussions of public debt have been subject to theoretical and empirical controversies. Before the seminal work of Barro (1974), Bowen *et al.*, (1960) argued that despite the fact that consumption tends to regress when public borrowing increases, economists should not evaluate the sacrifices of a generation based on their refusal to consume at a specific time. On the contrary, the debt burden borne by a generation can also be interpreted as a deprivation of total private consumption by that generation during its lifetime (Bowen, Davis, & Kopf, 1960).

On the empirical level, several studies indirectly refute the validity of the Ricardian equivalence hypothesis. The studies made by Feldstein (1982) and Modigliani & Sterling (1990) suggest that aggregate consumption reacts to both public debt and tax levels. Furthermore, Wilcox (1989) discovered that due to changes in taxation and transfers, households do not appear to be perfectly smoothed over time. Haug (2017) rejected the Ricardian equivalence for the case of New Zealand, using a different methodology, i.e. a narrative measure of discretionary fiscal policy measures and tax shocks from 1945 to 2008. In the same logic, Adji & Alm (2016) use a battery of time series tests on the effects of government debt finance in Indonesia from 1972 to 2003. Their estimation results *consistently* and *strongly* reject the predictions of the Ricardian paradigm.

On the other hand, other studies provided empirical evidence in favour of the equivalence hypothesis. The results of Afzal (2012) suggest the validity of said hypothesis in the case of Pakistan for the period from 1960 to 2009. In this frame, Afzal (*ibid.*) uses cointegration, VAR and the Granger causality test; a particular attention was given to examining the time series properties in order to avoid the criticism made against several previous studies such as Kormendi (1983) and Aschauer (1985), namely model-specification, simultaneity bias and data stationarity. Ghassan (2007) estimates a structural vector auto-regressive approach (SVAR) to test the Ricardian equivalence hypothesis in Morocco using data from 1970 to 2001. He separates the co-movements of saving rate and budget deficit rate into two shocks, and avoids

Ch.5. Fiscal policy and the Ricardian equivalence: Empirical evidence from Morocco imposing formal short and long run constraints, as they could lead to an overestimation of the compensation rate, thereby biasing the estimation of structural multipliers. His results suggest that the equivalence hypothesis is applicable to the Moroccan economy, since private saving compensates around 90% of budget deficit shocks.

In the present research paper, we provide empirical evidence regarding the Ricardian equivalence hypothesis in Morocco, based on recent data (1980-2016) that encompasses interesting episodes of expansionary fiscal policy during the second half of the 2000s, followed by significant restrictive fiscal measures. We use the SVAR methodology, which enables us to make the difference between the dynamics of savings and the budget deficit by separating them into two types of shocks; each type is related to the structural multiplier associated with each of the two variables. In order to avoid model over-specification and to increase the credibility of the estimates and tests, we do not assume short or long term constraints.

Insights on the Moroccan framework

Before proceeding to an empirical examination of the Ricardian equivalence hypothesis in Morocco, it is important to provide some elements of context regarding the evolution and current state of the two variables of interest.

The budget deficit: History and current state

From the country's independence in 1956 until mid-1970s, the public deficit had been evolving in a relatively stable pattern, as the overall public finance followed the evolution of the economy. The massive investment spending that marked the 1973-1977 five-year plan drastically changed this evolution. Said plan focused on infrastructure projects such as dams and national roads, besides from attempting to support the national industry and its exports through import substitution industrialisation policies.

This plan required tremendous funds and the government made a massive use of foreign debt, which pushed the deficit to an unprecedented level in the early 1980s, despite the government's efforts to stabilise its budgetary situation during the period from

Ch.5. Fiscal policy and the Ricardian equivalence: Empirical evidence from Morocco 1978 to 1982. As the country was threatened with a cease-of-payment, rescheduling foreign debt was unavoidable. And in order to consolidate the public finance and stem budget deficits, the government initiated a restrictive budgetary cycle from 1983 to 1992, i.e. the Structural Adjustment Plan -SAP- (*Plan d'ajustement structurel*). The budget deficit, which represented 9.2% of GDP in 1983, gradually regressed to 2.2% of GDP in 1992 ([Haut-Commissariat au Plan -HCP-, 2008](#)).

In the adjustment process, the structure of fiscal deficits financing has also changed considerably. Instead of foreign borrowing, domestic sources of financing have gradually taken a relatively large share since the implementation of the SAP, covering on average 45.5% of budget deficits between 1983-1992 ([Ministère de l'Economie et des Finances du Maroc, 2006](#)). The period 1993-2004 was characterised by relatively well-controlled deficits, but this control remained fragile. Starting from 1993, the government relied on privatisation revenues to reduce its budget deficits down to sustainable levels. As a result of this exceptional source of public revenues, the budget deficit declined to an average of 3.1% of GDP over the period 1996-2003, compared to 3.3% between 1990 and 1995 ([Haut-Commissariat au Plan -HCP-, 2008](#)). By way of example, the deficit was reduced in 2001 to 2.6% of GDP, thanks to the proceeds from the sale of 35% of the Maroc Telecom's capital.

From 2003 to 2010, the Moroccan government managed to maintain budget deficits at an average of 2.3%. However, in the wake of the social and political tensions that marked the MENA region in 2011, the government launched large demand-oriented government spending sprees. This led to substantial fiscal deficit rates in both 2011 and 2012, reaching respectively 6.2% and 7.1% of current GDP. Afterwards, the restrictive fiscal policy led by the government brought down the deficit to 5.4% in 2013 and 4.9% in 2014. The deficit rate continued to decrease in 2015 and 2016, respectively at 4.4% and 4%, with an expected 3.5% rate in 2017. Evidently, the reduction of fiscal deficits has been at the expense of government spending this time, particularly investment expenditures, hence the most likely downward influence on the

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purchase power of economic agents and on the aggregate demand
in general.

The evolution of the gross national saving

Two main features have characterised the evolution of national savings in Morocco since the implementation of the financial liberation in Morocco: on the one hand, instability in the growth of this aggregate and, on the other hand, a partial coverage of investment.

Regarding the first feature, after having registered a low level at 19.62% of GDP due in particular to the financial crisis that affected Morocco in the early 1980s, the national saving rate has recovered starting from 1984, the date of the beginning of a cycle of relatively continuous growth.

This gradual increase has been tributary to the financial liberalisation measures taken by the Moroccan authorities under the SAP. The aim of these measures was to encourage the formation and mobilisation of national savings, regulate the demand, diversify savings instruments and above all, to maintain encouraging remuneration conditions in order to motivate private savings.

It is worth mentioning that at the first half of the 1990s, this evolution has considerably lost momentum and the gross national saving rate has steadily declined from one year to the next, reaching only 20.70% of GDP in 1995. The only exception was in 1992 when it reached 24.82% as a result of an increase in net incomes received from abroad, which amounted to 11.9 billion MAD. The fluctuations in the agricultural sector, which are highly tributary to the arbitrary yearly levels of rainfall, have also driven a significant influence on national savings. From 1995 to 1996, the latter fell from 68 billion MAD to 65 billion as a consequence of the fall in agricultural output during that year. Since then, gross national saving has been evolving at an upward trend, reaching 26.6% of GDP in 2013 and 28.3% in 2016.

A significant part of the evolution in national savings coincided, on the one hand, with the strict austerity policy measures launched by the Moroccan government in order to reduce capital expenditure and, on the other hand, with the

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implementation of a structural liberalisation reform aimed at increasing national savings by stimulating its public and private components (Bank Al-Maghrib, 1998).

In light of these observations, it could be inferred that the most effective way of increasing national savings in Morocco is through the simultaneous implementation of: 1) a policy of public finance consolidation, which would lead to public savings, and 2) a policy of financial liberalisation that would encourage saving in the private sector.

In fact, the examination of the evolution of national savings in Morocco throughout the financial liberalisation carried out since the beginning of the 1980s, revealed that this aggregate has indeed substantially improved, going from 18 billion MAD in 1980 to 278 billion in 2015. Nevertheless, this growth has been unstable over time, reflecting an irregular effort of saving.

Empirical examination of the Ricardian equivalence

In this paper, we use annual data covering the period from 1980 to 2016. The main variables are GDP, the gross national saving (S) and the budget deficit (D). All are expressed in real terms. GDP and savings statistics are derived from the High Commission for Plan database (*Haut-Commissariat au Plan*, i.e. the Moroccan national statistics institution), while the budget deficit statistics are taken from the Ministry of Finance.

The stationarity of the data

In this study, we use the augmented Dickey-Fuller unit root test, confirmed by Phillips-Perron's. According to the tests, the two variables S and D are not stationary and contain a unit root. The values of the Dickey-Fuller and Phillips-Perron statistics on level variables are higher than the critical values at both the 1% and 5% thresholds.

Table 1. *The Augmented Dickey-Fuller test results*

| | With trend and intercept | Critical value | With intercept | Critical value | None | Critical value |
|-------------|-----------------------------|-------------------|-------------------|-------------------|-----------|-------------------|
| TD | -2.817642 | -3.574244 | -2.028280 | -2.967767 | -2.973364 | -1.953381 |
| Δ TD | -8.943871 | -3.580623 | -8.728459 | -2.971853 | -8.313898 | -1.953381 |
| TS | -2.588477 | -3.574244 | -1.117048 | -2.967767 | -0.629970 | -1.952910 |
| Δ TS | -7.073405 | -3.580623 | -7.268847 | -2.971853 | -6.979995 | -1.953381 |

Source: Authors' calculations.

Table 2. *The Phillips-Perron test results*

| | With trend and intercept | Critical value | With intercept | Critical value | None | Critical value |
|-------------|-----------------------------|-------------------|-------------------|-------------------|-----------|-------------------|
| TD | -2.817642 | -3.574244 | -1.765336 | -2.967767 | -1.929977 | -1.952910 |
| Δ TD | -8.943871 | -3.580623 | -8.728459 | -2.971853 | -8.313898 | -1.953381 |
| TS | -2.622271 | -3.574244 | -1.117048 | -2.967767 | -0.842776 | -1.952910 |
| Δ TS | -7.073405 | -3.580623 | -7.268847 | -2.971853 | -6.979995 | -1.953381 |

Source: Authors' calculations.

According to both tests, the unit root hypothesis cannot be rejected. The variables are stationary in first difference, however, and the statistics values become lower than the critical values at the 5% threshold. This means that the two series are integrated in first order I (1).

Applying the Johansen test to the series shows that the two series are not co-integrated at the 5% threshold, based on both the trace statistic and the max-eigenvalue statistic.

Table 3. *The Results of the Johansen tests for cointegration*

| Unrestricted Cointegration Rank Test (Trace) | | | | |
|--|------------|------------------------|------------------------|---------|
| Hypothesized No. of CE(s) | Eigenvalue | Trace Statistic | 0.05 Critical Value | Prob.** |
| None | 0.262272 | 9.093769 | 15.49471 | 0.3568 |
| At most 1 | 0.020386 | 0.576719 | 3.841466 | 0.4476 |
| Trace test indicates no cointegration at the 0.05 level | | | | |
| * denotes rejection of the hypothesis at the 0.05 level | | | | |
| **MacKinnon-Haug-Michelis (1999) p-values | | | | |
| Unrestricted Cointegration Rank Test (Maximum Eigenvalue) | | | | |
| Hypothesized No. of CE(s) | Eigenvalue | Max-Eigen Statistic | 0.05 Critical Value | Prob.** |
| None | 0.262272 | 8.517050 | 14.26460 | 0.3286 |
| At most 1 | 0.020386 | 0.020386 | 3.841466 | 0.4476 |
| Max-eigenvalue test indicates no cointegration at the 0.05 level | | | | |
| * denotes rejection of the hypothesis at the 0.05 level | | | | |
| **MacKinnon-Haug-Michelis (1999) p-values | | | | |

Based on these results, it is possible to conclude that there is no long-term equilibrium relationship between the gross national

Ch.5. Fiscal policy and the Ricardian equivalence: Empirical evidence from Morocco saving and the public deficit. But this does not necessarily mean that in the short term there is no causal relationship between the two variables.

The instantaneous Granger causality test

The coefficients are not significantly different from zero². However, the elements discussed so far suggest that VAR modelling is appropriate and that innovations do not have permanent effects on both variables. This model summarizes the different correlations between the two series and could be considered as a reduced form of the structural model that remains to be determined.

Table 4. *The results of the instantaneous causality test*

| | Constant | ΔTS | ΔTD | $\Delta TD(-1)$ | $\Delta TS(-1)$ |
|-------------|-----------------|--------------|--------------|-----------------|-----------------|
| ΔTD | 0.003502355764 | 0.1884049337 | - | 0.4226568518 | 0.1926777033 |
| ΔTS | -0.004886229704 | - | 0.2379927836 | -0.2783101872 | 0.2234585392 |

The SVAR model

The general VAR form in first difference is as follows:

$$\begin{aligned}\Delta d_t &= f_1(\Delta d_{t-1}, \Delta s_t, \Delta s_{t-1}) + v_{dt} \\ \Delta s_t &= f_2(\Delta d_{t-1}, \Delta s_t, \Delta s_{t-1}) + v_{st}\end{aligned}\quad (1)$$

With: Δd_t being the public deficit rate, Δs_t the saving rate and v the vector of structural innovations.

The reduced form of the structural VAR can be written in the following way:

$$\begin{cases} \Delta d_t = c_1 + \alpha_{11}\Delta d_{t-1} + \alpha_{12}\Delta s_{t-1} + \varepsilon_{dt} \\ \Delta s_t = c_2 + \alpha_{21}\Delta s_{t-1} + \alpha_{22}\Delta d_{t-1} + \varepsilon_{st} \end{cases}\quad (2)$$

The error variance is given by:

² The Granger causality test allows us to accept, at the tolerance threshold of 5%, the null hypothesis of the existence of a cause-and-effect relationship between the public deficit and the gross national saving. The sense of causality indicates that the deficit causes savings.

$$V(\varepsilon_t) = \begin{bmatrix} \sigma_d^2 & \sigma_d \sigma_s \\ \sigma_d \sigma_s & \sigma_s^2 \end{bmatrix}$$

Discussion of the results

Following the estimation of our model, we obtain the following system:

$$\begin{aligned} \Delta t d_t &= -0.004630576013 - 0.4973945455 * \Delta t d_{t-1} \\ &\quad - 0.1576456894 * \Delta t s_{t-1} \\ \Delta t s_t &= 0.005988273379 + 0.3966864996 * \Delta t d_{t-1} \\ &\quad - 0.1859400028 * \Delta t s_{t-1} \end{aligned}$$

The optimal lag of this VAR model is one (1) period, considering the four information criteria, i.e. Akaike, Schwarz, FPE and HQ. Moreover, the canonical VAR (1) is stationary, and the residuals seem to be actually auto-correlated, according to the Breusch-Godfrey LM test and the Portmanteau autocorrelation test. These elements suggest that the residual orthogonalization and SVAR modelling are the most appropriate for this very case.

The variance-covariance matrix of residuals is as follows:

$$C = \begin{pmatrix} 0,01599366 & -6,08779E - 05 \\ -6,08779E - 05 & 0,01797561 \end{pmatrix}$$

This matrix is not diagonal, and the correlation between the two calculated residuals is not equal to zero. The value of said correlation's coefficient, which measures the instantaneous causality between the budget deficit and the gross national saving, can be obtained through the covariance, which is equal to -0.2117 in the present case. As a consequence, considering the estimated VAR as a simulation model, when a shock occurs in one of the two disturbances, it is necessary to modify the other one.

The error terms ε_{dt} and ε_{st} in equation (2), represent reduced-form innovations that have no economic interpretation. Their signification is merely statistical. The main issue is to be able to switch from the effects of this type of shocks toward the effects of structural shocks, which could be interpreted economically. In order to do so, we will use economic theory by assuming that the

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reduced-form innovations are a linear combination of structural fiscal and savings shocks.

Short-term identification restrictions need to be considered when proceeding to residuals factorisation. In this case, $n = 2$; to identify the n^2 parameters of the equation, we must impose $n(n-1)/2$ constraints, i.e. 1 constraint. As a matter of fact, we consider one short-term restriction because the response to a savings innovation does not have a short-term effect on the budget deficit. Hence, the matrix M would be triangular in order to encompass this constraint, so that the system is just identifiable. We obtained the following factorisation:

$$M = \begin{pmatrix} 1 & 0 \\ -0.762 & 1 \end{pmatrix}$$

The forecast error variance decomposition

The variance decomposition is intended to calculate the contribution of each innovation to the variance of the error. It is possible to mathematically write the forecast error variance to a given horizon h as a function of the error variance attributed to each of the variables. Then, we would only need to relate each variance to the total variance in order to come up with its relative weight in percentage (Bourbonnais, 2004).

In the present case, the variance decomposition suggests that the error variance of the budget deficit is explained at 97% by its own innovations, while those related to gross national saving have an explanatory power of 3%. As regards to the error variance of gross national saving, 19% of its dynamics is explained by budget deficit shocks and 81% by the gross national saving's. This observation is confirmed by the dynamic multiplier of the matrix M since it is equal to -0.762007, which confirms the existence of the Ricardian equivalence in Morocco's public finance. This multiplier indicates that when a shock is driven on the budget deficit, 76% of its effect is offset by national savings.

After a fiscal shock (see Figure 1), represented by an increase in the public deficit, the SVAR model detects for the following year a policy that could be qualified as restrictive, since during this second year there is a deficit rate below the equilibrium level. However, fiscal authorities tend to adjust the budget balance, in a

Ch.5. Fiscal policy and the Ricardian equivalence: Empirical evidence from Morocco countercyclical and gradual pattern until it reaches its initial level by the fifth period of time. This is consistent with the fact that an expansionary fiscal policy is generally followed by restrictive measures so as to stem potential budgetary imbalances. The European contemporaneous fiscal history corroborates and illustrates this rule-of-thumb; the European governments, after having bailed out their financial and economic sectors after the 2008 financial crisis, switched to tightening their belts through austerity measures, just a year later.

As for national savings, it is positively correlated with the budget deficit in the sense that economic agents do react, if considered a one-period lag. This finding is based on the nature of expectations in the Moroccan economy, which is dominated by the backward-looking component compared to the rational one, as revealed by Oukhallou & Mrabti (2017). Furthermore, economic agents are less likely to perceive the notion of deficit as opposed to that of expected taxes, especially when considering that the latter are declared in the yearly finance bills. Finance bills are voted by the parliament within the three last months before the financial year in question, which means that non-financial agents would hypothetically start saving at the end of the first year and the beginning of the second year –which is concerned by the finance bill and its potential changes in taxation. The annual periodicity of our model obviously does not allow for assessing the existence of this particular intra-annual behavioural aspect. An additional argument, confirming all the more that the gross national saving reacts with a one-year lag, would be the fact that it joins the stationary state only a period (the 6th year) after the public deficit has returned to its equilibrium level (the 5th year).

Concluding remarks

This chapter empirically examines the Ricardian equivalence hypothesis in the Moroccan economic framework, by assessing the relationship between fiscal deficits and national savings.

The importance of this examination comes from the fact that the macroeconomic effectiveness of fiscal policy is significantly affected by the dominant behaviour among households. In the case of rule-of-thumb households, an increase in the public deficit is

Ch.5. Fiscal policy and the Ricardian equivalence: Empirical evidence from Morocco most likely to drive an upward influence on aggregate demand, thereby supporting economic growth. On the other hand, when Ricardian households are dominant, consumption supposedly remains unchanged, as economic agents tend to save for future tax increases or public budget cuts instead of purchasing goods and services.

In this process, we use a Structural Vector Autoregressive (SVAR) model; the latter has enabled us to make allowances between the dynamics of savings and the budget deficit by separating them into two types of shocks. And our results support the existence of the Ricardian equivalence in Morocco. The model suggests that the gross national saving offsets up to 76% of the increase in the fiscal deficit rate. This finding could be considered to some extent as a problem, since it insinuates that fiscal policy and government deficit spending measures are not likely to have a significant impact on GDP through the aggregate demand.

As regards to the question of fiscal policy effectiveness, particularly when it comes to public investment spending, it seems important to consider the Ricardian equivalence alongside the rules-of-thumb developed by Oukhallou (2016), which aim to guide policy makers in the shaping of an effective public spending policy.

Appendix

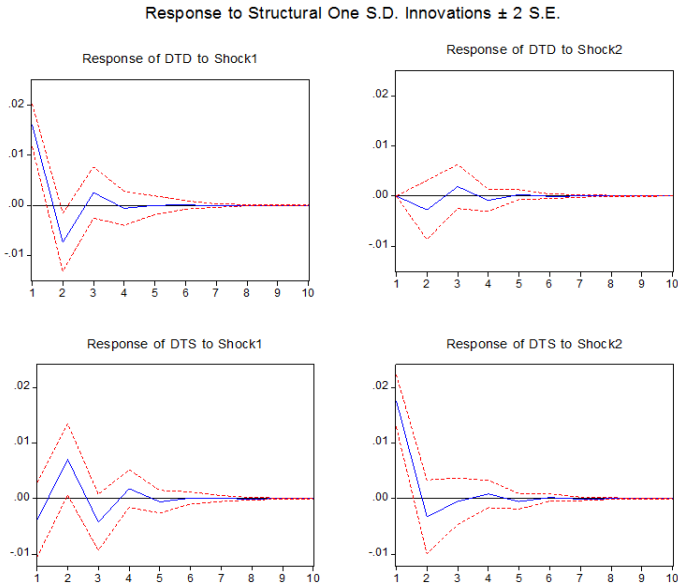


Figure 1. *The variables' impulse response to structural public deficit and savings shocks*

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6 Effects of corruption on the functioning of the public hospitals in Cameroun: An analysis by the theory of information costs

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Introduction

The study of forms of corruption in public hospitals in Douala, Cameroon, shows that corruption without theft and corruption with theft are the most common forms (Yamb & Bayemi, 2017a). In the first case, the patient gives bribes and then pays the official charge; in the second case, he gives only bribes (Shleifer & Vishny, 1993). This study is important because, firstly it shows that corruption without theft is the most dominant form in the nine public hospitals that make up the sample in this study, regardless of the hospital. Second, it shows that the general hospital is the least likely to practice either form of corruption compared to other hospitals. For example, estimates based on odds ratios indicate that for corruption without theft, there are

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Ch.6. Effects of corruption on the functioning of the public hospitals in Cameroun approximately 5.46 times more risk to have this form practised in this hospital compared to other hospitals, while the chances of this same form being practised at Deïdo Hospital compared to other hospitals are about 11.11 times higher. However, this study remains limited insofar as it emerges from a socio-economic vision according to which corruption is seen as a marginal phenomenon that affects only the patient-doctor relationship. Indeed, the impact of this phenomenon on the doctor-hospital relationship is rather ignored. More specifically, the bureaucratic nature of the management of hospitals is not taken into account as well as the fact that corruption creates an unequal sharing of information circulating between the hospital director and the doctor. The latter represents systematically the backbone of the skeleton for its operation, knowing that the hospital director is the one who delegates a service to the doctor.

The purpose of this work is to fill in this gap. More precisely, it is all about how corruption malpractices distort the information that the doctor in charge of a department puts at the disposal of the hospital director and thus increase the transaction costs in operating this hospital.

The debate over the unequal sharing of information between the principal and the agent often refers to the definition of corruption in the sense of Bandfield (1975). According to this author, "corruption is possible as long as there are three types of economic actors, namely an agent, a principal, and a third party whose gains and losses depend on the agent. He is likely to be corrupt since he has a capacity to conceal his corruption to the principal, and is corrupt when he sacrifices the interest of the principal to his and by that, he violates the law ". In this perspective, to better understand the impact of corruption on the flow of information between the patient (the third party), the doctor in charge of a department (the agent) and the director of the public hospital (the principal), we can rely on an explanatory paradigm – the theory of the costs of information, also called agency theory– with the analysis of the functioning of public hospitals, in particular, with the role of asymmetric information as a generator of anti-selection and moral hazard in the functioning of this system.

Assuming that the principal is benevolent, corruption behaviors, as we will see later, have profoundly affected the functioning of the hospital system and continue to play a determining role in the evolution of the public hospitals restructuring policy. In particular, these behaviors have caused doctors not to keep their commitments to the hospital and to betray their director. They have also resulted in a decrease in the performance of health personnel, thereby interfering with customer confidence and the credibility of the entire system. In fact, the perverse effects of these behaviors are as greater as the multiple forms of corruption, hence the need to use agency costs to combat these behaviors.

The study is organized as follows: we shall first present the contributions of the agency theory to the analysis of the hospital system and second, we shall briefly describe how public hospitals operate in Cameroon and the prevailing forms of corruption. Finally, we show how those forms of corruption reinforce information asymmetric between the hospital director and the physicians responsible for services, and thus increases transaction costs. It is therefore urgent to find appropriate measures to deal with corruption.

The theory of information cost: An explanatory paradigm of corruption in the functioning of public hospitals

The theory of information costs analyzes contracts by which an individual, the "principal", hires another person "the agent" to perform on his behalf any task that involves a delegation of decision-making power to the agent (Jensen & Meckling, 1976; Ross, 1973). The agent can be an individual (employee, tenant, doctor, insured, manager, seller, etc.) or group of individuals (employees, social groups, etc.) who perform a specific task generating costs on behalf of the principal (employer, shareholder, owner, buyer, insurer, patient etc.). This theory is generally formalized through the principal-agent model analyzing bilateral exchanges between an informed party (the agent) and an uninformed party (the principal). The notion of the agency

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relationship is therefore very broad; in fact, it covers any relationship between two individuals such that the situation of one depends on the other's action. The individual who performs the action is the agent, the affected party is the principal (Pratt & Zekhauser, 1985). To paraphrase Maya Beauvallet (2009), such a relationship implies that, in the context of an employment relationship, the principal's interests and those of the agent are contradictory; the agent seeks by hypothesis to minimize his motivation and his effort at work while the principal tries to mobilize the agent's competence to create added value. The levels of information held by stakeholders differ, creating a situation known as "asymmetric information".

Although its roots are economic, the agency theory has been used by scientific branches such as accounting, sociology, finance, political science, and health to explain the problems inherent in the principal-agent relationship, as well as organizational phenomena (compensation, ownership, inter-organizational relationships, health care provision and corruption ...) (Jensen & Meckling, 1976; Klitgaard, 1989; Fleisher, 1991; Sekwat, 2013).

Jones & Zanola (1995) present a typology of the main actors in the health sector between which agency relationships can be studied. Five groups of actors are selected: the representatives of the supervisory authority (politicians, decision-makers), the public in its dual role of citizen and patient, the obligatory or voluntary insurers, the buyers, for example, the district authorities and budget-managing doctors, and finally healthcare providers, including organizations such as the hospital, but also doctors and other health professionals such as the pharmaceutical industry. In the literature, many "agency" relationships have been defined from these five categories of actors. Moreover, even within the same group, other agency relationships can be defined (Rochaix, 1997). Fermon (1991) analyzes the relationship between guardianship and the hospital, and Domin (2015) examines among other things the agency relationship between the director of the institution (principal) and the doctors (agents). However, when considering a third person who demands to be served by the agent, through corruption, the principal-agent model is enriched by another actor: the bribe-giver. Under these conditions, the

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problem is how corruption distorts the information that flows between the principal and the agent and what the consequences of these disruptions on transaction costs are?

Corruption as an asymmetric information reinforcing factor between contract agents

As stated earlier, starting from the definition of corruption according to Bandfield (1975), it is the agent who conceals the act of corruption to the principal by diverting the discretionary power in his favor and to the advantage of the third person. From this point of view, the agent betrays the principal who has delegated him some power. Also, the first explanatory factor for asymmetric information is the profusion of delegations of power that exists when we have a hierarchical coordination and control of efficiency by the authority and rather than by the prices (Cartier-Bresson, 2008). By delegating power to the agent, the principal gives the agent the opportunity to hide or reveal the information. The agent's behavior will depend on the means of control and resilience put in place by the principal.

Monopoly power is the second factor in understanding how corruption practices hinder the flow of information. In fact, when the State agent is alone in serving the users, it is easier for him to conceal the act of corruption to the principal (for example, by demanding that the user pays a bribe) as compared to when there are several State agents who are doing it. Indeed, in the first case, the agent is unavoidable while in the second case, the user can be served here or there. In the latter case, it is possible that the user has to deal with an agent who either does not ask for a bribe or requires a bribe of a greater or lesser amount. The monopoly position in favor of the agent increases its ability to conceal information.

The third factor mentioned by Klitgaard (1989) is lack of sense of responsibility and lack of moral stigmatization of deeds by social norms. In the face of illegal practices in a public hospital, doctors may have two attitudes: to denounce acts of corruption or not. Caregivers are said to be irresponsible when they refuse to disclose information about such acts in the name of professional solidarity. In this case, all other things being equal, illegal practices

Ch.6. Effects of corruption on the functioning of the public hospitals in Cameroun multiply in favor of caregivers, thanks in part to the phenomenon of social identification propounded by Tajfel & Turner (1986). When agents are not accountable to anyone, they can more easily use their discretionary power to collect bribes from users and thus betray the principal. Lack of accountability is likely to increase the officer's ability to conceal information.

The fourth factor is the low probability of judicial sanction and its light weight, which makes it possible to expect greater gains than the probable costs of sanctions for both parts of the transaction (Cartier-Bresson, 2008). Clearly, the bribe-taker will tend not to keep the commitments he has made to the principal, including hiding information if he finds out that the probability that it is detected, arrested and sanctioned is low.

According to the interactions paradigm the circulation of information between the principal and the agent depends also on the bribe-giver's behavior. A relationship based on bribery can only arise if there is a third player, called bribe-giver, who is affected by the agent's use of the discretionary power entrusted to him and whose interests conflict with those of the principal. For this reason, the bribe-giver wishes to establish a parallel relationship, a "corruption pact", by which he hopes to obtain a favorable decision from the agent. The provisions of the corruption pact are thus intended to direct the agent's interests towards his own (Jacquemet, 2006). Finally, the bribe-giver and the bribe-taker agree to hide information from the principal. In Becker's perspective (1968), the individual commits a crime if the expected benefit is greater than the probable cost of the sanction. The agent and the third party commit a crime and must be persuaded of the interest of the collusion. There is an offer, a request for crime and a victim. Thus, supply and demand have their source in the possibility of keeping the exchange secret (Cartier-Bresson, 2008, Shleifer & Vishny, 1993). By contrast, in most cases, victims are not informed of the act of corruption.

The reinforcement of asymmetric information between the principal and the agent is likely to generate more risks of moral hazard and anti-selection and hence, more transaction costs.

Corruption as a transaction costs multiplying factor in the principal-agent relationship

In the traditional neo-classical model, transaction costs are zero because the information is perfect and the exchanges are at optimum. Here, corruption has no place. By contrast, in the principal – agent – bribe-giver model where information is imperfect, significant transaction costs exist and can be paid by the bribe-giver, agent, and principal. We shall focus on those which affect the agent - principal relationship.

Suppose that the agent has the choice between two attitudes: to be corrupt and not to be corrupt. If he is not, he receives a retribution which is his salary and a moral satisfaction he feels not to be corrupt. If he is corrupt, he gets a bribe. But this situation also entails costs for itself. In fact, he endures what might be called the "moral cost"³ of his corruption. Another thing can happen to the corrupt employee: to be caught and punished. The penalty may include a fine, a loss of salary and employment, a name blackened, a coercive sentence, etc. (Klitgaard, 1989). The cost of the penalty is an effect corresponding to the reduction of well-being suffered by the agent if he has to pay a fine. In the event that the sanction consists of a final dismissal, this penalty is interpreted as the opportunity cost of bribery, since the agent thus loses the salary connected with the contractual relationship (Jacquemet, 2006).

The fact that the agent is corrupt also causes costs – or "negative external effects" – for the principal. This is why the latter wants the agent to reach the optimal degree of productive activity and the optimal degree of corruption. If the principal is fully aware of the productive and corrupt activities of the agent, he can easily convince him to act as he wishes⁴ (Klitgaard, 1989). The problem of

³ This cost depends on its own ethical, cultural, religious criteria. It can also depend on what your peers and colleagues do. It can also depend on how much gratification the agent receives. For an unscrupulous person acting under a corrupt subculture, the moral cost of corruption may be close to zero.

⁴ In the case of a productive activity, he simply pays the agent the value of the marginal product of his work; and in the case of a corrupt activity, it charges this type of behavior exactly as it would charge for any other activity generating external effects or fallout.

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the principal becomes difficult when, as it is generally the case in the public sector, he is poorly informed about the productive and corruptive activities of the agent. In real life, the principal is unable to say what proportion of the results he finds is due to what the agent did in his own name. And it is expensive for the principal to try to find out more about the agent's activities. The agent knows what he is doing but the principal cannot believe what he is saying. After all, the agent has good reason to mislead his boss and make him believe that he works productively and never gets into corruption. The principal understands this fundamental asymmetric information. At the root of the principal - agent problem, there are divergent motives and asymmetric information, and this makes the principal's problem difficult. He must fix wages and sanctions without knowing exactly his marginal productivity and the consequences that his behavior may entail. He may try to set up systems for collecting information on the activities of his agents, but these systems are inherently expensive (Klitgaard, 1989).

According to Becker (1968), a person can engage in corruption only when the expected benefits of the act are greater than the projected costs. In this perspective, the bribe-giver and the bribe-taker can each take advantage of the act of corruption. However, this is not always the case for society as a whole often represented by the principal. Indeed, corruption is expensive for the community because it distorts the redistributive role of the State to the extent that some taxpayers or consumers of public services will receive a preferential treatment. Programs intended to fight against poverty are totally distorted (Banque Mondiale, 1997).

But before showing how corruption reinforces asymmetric information in the hospital-doctor relationship in Cameroon's public hospitals, it is necessary to first briefly describe the functioning of the public hospital system.

A descriptive analysis of the functioning and corruption practices in Cameroon's public hospitals

In Cameroon, the health sector is made up of three sub-sectors: a public sector, a private sector and a traditional one. However, the first is more important than the other two because, not only is it

Ch.6. Effects of corruption on the functioning of the public hospitals in Cameroun represented in all districts, departments and regions of the country, in terms of public hospitals, but in addition, it regulates all activities relating to health. To have a clear idea of the place that corruption occupies in the evolution of the public hospitals of this country, we will present the forms of corruption that are practiced there. But before, let's look at the functioning of public hospitals in Cameroon.

The organization of Cameroon's public hospital system

Cameroon is divided into ten regions. In each region there are essentially three categories of public health facilities that provide health care to patients: central hospitals, district hospitals and district health care centers. All these structures operate under the supervision of the Ministry of Health.

Part of the role of District Hospitals is to provide better quality care with motivated and disciplined staff to whom the patient is the only concern. Secondly, these hospitals must ensure better decentralized management of cost recovery on medical treatments, drugs and prepayments to be put in place for progressive empowerment. And, finally, they must take care of both emergency cases and hospitalized patients. Below district hospitals are district health care centers. They are less affluent than district hospitals in terms of health personnel and medical equipment. By contrast, central hospitals are located above district hospitals. These are the high-level technical structures that, in terms of specialized cares, provide reference and counter reference, and the reception of patients from district hospitals. To achieve this, they have specialized doctors and special medical equipment usually absent in district hospitals.

To ensure each health facility in the public hospital system functions properly, the Ministry delegates some of its responsibilities to a director at the head of each health facility and provides medical and paramedical staff and work tools. However, as each hospital is made up of several departments, the director

Ch.6. Effects of corruption on the functioning of the public hospitals in Cameroun delegates the management of each department to a doctor⁵ and places at his disposal a nursing staff and the working tools. Clearly, if a health facility consists of five department, this training has a director and five doctors each responsible for one of these departments. The performance of the health facility depends in particular on the sharing of health information between the different actors of each hospital and, in particular, between the director and the doctor in charge of a department. The tandem director of the hospital and doctor in charge of a department appears as the backbone of each hospital. Also, a poor circulation of information between these two actors worsens the bureaucratic dysfunction of the hospital, and annihilates its socio-economic performances. Since it is the Minister of Health who appoints a director at the head of each institution and it is the latter who delegates the management of each department to this or that other doctor. The hospital system is characterized by a double asymmetric logic in which the director of the institution occupies a central place because he is on the one hand the ministry's agent and on the other hand the principal of a doctor in charge of a department (Domin, 2015). The agency relationship between the hospital director (principal) and the doctor (agent) in charge of a department is marked by commitments that each takes towards the other.

The director of the hospital, the main beneficiary of the softening of public health property rights, from the discretion thus received, incurs expenditures for the maintenance and monitoring of the evolution of all the departments. These expenditures are included in his budget as operating expenses. He requires from every employee to abide by the operating rules of the hospital, especially since everyone is supposed to have signed an employment contract by which he commits himself to serving the state faithfully. Moreover, in recent years, the public authorities have decided to divide the revenues of each public hospital in three parts: one third is for the maintenance and purchase of equipment, one third goes back to the State Treasury and one third is used as bonuses to each hospital's employees. In this context, the

⁵ When the number of doctors is insufficient in a hospital, paramedical staff can be empowered.

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director of the hospital is required to pay bonuses to his employees depending on the hospital revenues. These bonuses are in addition to the monthly salary that the Ministry of Finance pays to each State agent.

The doctor in charge of a department has the mission to examine the patients and to supervise the treatment they receive. He must ensure that patients get access to medical services after paying official fees. Similarly, he must decide on the transfer of patients from one department to another according to their health condition and authorize, if he finds it possible or necessary, the exit of patients or their orientation towards a rehabilitation center. At the end of each month, the doctor in charge of a department has the obligation to inform the director how his department works: The number of patients examined, the amount of revenue collected, the number of patients hospitalized, the patients who have obtained the exit authorization, the number of times the medical devices made available for his department have been used, etc. The obligation the doctor (in charge of a department) has to inform the director of the hospital on the medical cares in his service raises the thorny issue of information sharing, the heart of any agency relationship. Indeed, the doctor in charge of a department is the only holder of information on the cares offered and the means used. The hospital management can only rely on the messages sent by this doctor to make a balance sheet of the activities carried out by this service and to determine the budget. In this perspective, the doctor will tend to maximize the size of his service to increase his budget. The two actors therefore have different or even antagonistic objectives (Domin, 2015). In fact, instead of the doctor waiting to benefit from the resulting revenue from the budget increase, he will turn to corruption practices to try to improve his living conditions (Yamb & Bayemi, 2017a) and ensure the balance of his ratio between contribution and retribution as developed in Adam's Equity theory.

Forms of corruption in public hospitals

As a result of ECAM3⁶, almost 85% of heads of households living in urban and semi-urban areas believe that the level of corruption in the health sector is high in this country. But the extent of the phenomenon varies from one region to another (69.8% in Douala and 61.1% in Yaoundé). For example, in consultation, corruption is mainly seen through the payment of informal fees and the assistance of some people to be served quickly, thus avoiding queueing up for long (INS, 2011, p.84). Users of public hospitals also complain about the unavailability of doctors. This unavailability can be explained by the fact that the private sector health facilities that accompany the government in the provision of health services to the population mostly have doctors practicing in the public as promoters. Many patients who consult public health facilities are referred by doctors to their private health care centers for medical follow-up in violation of the public property rights of the hospital. In a study published recently by Yamb & Bayemi (2017a), it appears that corruption without theft and corruption with theft are the two most prevalent forms of corruption in public hospitals in Cameroon. In the first case, the patient only pays the bribe to the doctor for consultation. This practice negatively affects the hospital in that it no longer records expected revenues from the payment of official fees. In the short term it can be beneficial to the patient in the sense that the amount of bribe is lower than the official price that would have been paid in the absence of corruption. In the second case, the patient pays the official price to which he adds the bribe. Here, the patient pays a higher cost than he could have paid in the absence of corruption. This study is limited in that it does not take into account the fact that a doctor to whom the director of the hospital has delegated the management of a department, also works in private health care centers which benefit from the position he occupies in the public hospital (Rose-Ackerman, 1998). It is in this perspective that Yamb & Bayemi (2017b) highlight corruption practices relating to private health care centers. These are two types of patient diversion: The transfer of public hospital patients to formal private health care

⁶ Cameroonian household surveys third edition.

Ch.6. Effects of corruption on the functioning of the public hospitals in Cameroun centers and the transfer of public hospital patients to informal private health care centers. In the first case, the doctor who diverts patients is paid as an employee; the health care center does not belong to him. In the second case, he is paid as owner since the health care center in question is his own property.

How do these different forms of corruption affect the information that the doctor in charge of a department conveys to the director of the hospital? How do they therefore increase transaction costs in operating this hospital?

The impact of forms of corruption on the functioning of the public hospital system

The incidence of corruption on the functioning of the Cameroonian hospital system, and therefore on the serious crisis that has been affecting this system since the 1980s, will be justified through the principal-agent relationship, considering corruption on the one hand as a reinforcing factor for asymmetric information and, secondly, as a multiplying factor for transaction costs.

Corruption as a “hidden information” aggravating factor

The forms of corruption outlined above help to understand the implications of corruption in the agency relationship that exists between the hospital, represented by its director (the principal) and the doctor (the agent) in charge of a department. In this relationship, the principal expects the agent to act in his best interests, especially since he has committed himself, as we have already said, to serve the State faithfully. Unfortunately, the acts of corruption that he (the agent) poses spur us to question this commitment; they compromise his effectiveness and alters the relationship he has with his director (the principal).

Indeed, the exchange between the bribe-taker (doctor) and the bribe-giver (patient) being characterized by secrecy (Shleifer & Vishny, 1993), asymmetric information tends to become a rule in the exchanges between the doctor (agent) and the director (principal), because the information that the agent gives the principal is distorted. The principal, despite the means of control,

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is not able to observe the agent's behavior perfectly in a real-life working situation. This inaccuracy can manifest itself in many ways.

In the first case, the patient pays the official medical expenses and adds a bribe to access the care. The officer informs the principal that he or she has treated a patient, and that the patient has paid the expected official fees. If the official fees is X Dollar, the total revenue collected is equal to NX Dollar; N being the number of patients treated. But the agent does not inform the principal that he has received a total sum of bribes of equal value to NY Dollar; Y being the value of a bribe.

In the second case, if the agent treats N patients for example, he hides at least four types of information to the principal. First, he does not tell him that he has examined N patients, secondly, he does not inform him that he has received a bribe per patient. Thirdly, he does not inform him that he used the hospital's equipment for his examinations. Finally, he does not inform the director of the hospital that some patients did not have access to the care because they could not pay the bribe.

The amount of information that the State agent hides is more important in the case of corruption with theft (four pieces of information) than in the case of corruption without theft (information). In the first case, the State agent enjoys a discretionary power which allows him to behave as if he were a principal in violation of the ownership right. Yet, he is only an agent. But the power he has over information as an agent is more important than that of the principal. He takes the opportunity to satisfy his own interests to the detriment of the principal, by violating his employment contract.

The imperfection of information may also be at the level of the types of institutions that can provide health care. In fact, the agent is illegally absent from the public hospital. During his absence, he works illegally either in a formal health care center or in his informal health care center. In this context, he hides at least three pieces of information from the principal. First, he does not tell him that he owns an informal private health care center. Secondly, he also does not tell him that he is often absent from the public hospital to work either in his informal private health care center or

Ch.6. Effects of corruption on the functioning of the public hospitals in Cameroun in a formal health care center. Third, the agent does not inform the principal that he illegally diverts some patients from the public hospital to private health care centers.

Beyond the collection of inaccurate or poor information, asymmetric information can be at the level of not taking into account the exact information available. For example, in case of emergency, some patients are taken care of by the hospital against of a deferred payment guarantee. Unfortunately, such information is often concealed by the agent, particularly in the event of litigation when, for example, the warranties must be taken into consideration or legal actions taken to force recovery.

We can therefore understand the seriousness and magnitude of the confidence crisis that has developed in Cameroon between public hospitals and patients, particularly because of doctors' behavior.

On the one hand, whether corruption is initiated by these doctors or by patients, it has favored the development of opportunistic behaviors such as the single payment of the official sum to get access to consultation, which is an aberration just as the idea with many pregnant women that a delivery can be carried out on the sole basis of the payment of the officially required amounts of money in this regard.

On the other hand, the failures of public hospitals have developed in some users an anti-public hospitals syndrome to the extent that it looks absurd to go for treatment in a public hospital if we have the resources to do so either in a formal private health care center, or in an informal private health care center.

Asymmetric information is also reinforced between patients as corruption creates a differentiation between users, some of whom are subject to the usual rules governing the provision of medical cares and others because of corruption do not comply with these rules. They receive a stowaway treatment that exempts them, either from waiting long hours to get access to some medical cares or from paying official fees for medical treatment, or paying only a part of it, the rest being left to the responsibility of the entire community. It is well known that a large part of the costs for restructuring public hospitals was borne by the community, since a

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greater part of the compromised debts was consolidated on the State and thus on the taxpayer.

In terms of comparison, we are here in a game where some players (agents), occupying a decisive position for the normal outcome of the game – because the other players entrusted to them the mandate to play the game according to the rules accepted by all, and they do believe it is so – modify these rules secretly and let the game continue, as if the rules were still the same. They then take advantage of the fact that they are the only ones to know that the rules have been changed (Bekolo *et al.*, 2002). This is similar to Aoki's approach to neo-institutionalist economy.

We can therefore measure the magnitude of the transaction costs that the various actors are required to bear.

The high level of hidden information, a multiplying factor for transaction costs

The high level of hidden information caused by corruption in the hospital-doctor relationship leading to a service is a source of many transaction costs⁷. The first costs are caused by the negative consequences of the doctor's⁸ corrupt behavior. The second are connected with the agency costs that both parties bear to reduce the risks of moral hazard. These transaction costs affect one or the other player in the corruption game as well as the whole economy, they must bear all or part of these costs at a given moment and ultimately.

The nature of the transaction costs depends on the position of each actor in the corruption game. Corruption generates transaction costs for the patient, because he has to take from his income to corrupt the doctor with the risk that this expense may be lost. For example, when there is a queue of patients to be scanned and the scanner is being repaired⁹, paying a bribe to the doctor for quick access does not affect the duration time of repairs. In some

⁷ These are "costs associated with the transfer, capture, and protection of property rights" (Barzel, 1989).

⁸ The fact that the agent is corrupt also causes costs - or "negative externalities" - for the principal.

⁹ The mechanic is not informed of the payment of the bribe.

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hospitals in Cameroon the successful repair of a scanner can take up to six months. Six months is the time needed to record the death of several patients in the queue, including those who gave bribes.

The level of transaction costs borne by patients sometimes depends on the type of corruption. In the case of corruption without theft, where the price of the medical act is equal to the official price plus the bribe, the patient bears not only the official price but also the bribe. The cost is higher than in the case of corruption with theft if the value of the bribe is lower than the official price. Indeed, in the latter case, the patient bears only the charge of the bribe. Here, the patient appears in the short term, as beneficiary of the corruption game. But the hospital suffers because it records losses whose value by medical act is equal to the official price of this act (Shleifer & Vishny, 1993).

If the doctor who diagnoses and treats patients does not bear transaction costs and even seems to be the primary beneficiary, the situation is quite different for the hospital which will have to bear transaction costs of many kinds.

As far as the hospital is concerned, the loss is drastic in the case of corruption with theft. In the context of corruption without theft, the hospital records its due in terms of the official price. But it loses in the sense that patients who cannot bear the price whose value is equal to the official price plus the bribe and who, however, could have borne the price whose value is only equal to the official price are removed from the market, the hospital thus moves away from the Millennium Development Goals and Poverty Reduction Strategy. As in all developing countries this goal requires improving universal health coverage through the sustained increase in access to quality health care and a real promotion of health.

In the case of corruption with theft, the transaction costs borne by the hospital are due to the fact that the hospital provides care on a basis that does not cover the minimum hospital expenditure. The collection of hospital income is compromised. But even more serious, the public authorities no longer pay wages in order to obtain a growing or at least constant production, but on the contrary to compromise it. In other words, they incur costs that

Ch.6. Effects of corruption on the functioning of the public hospitals in Cameroun generate other costs; this negatively affects the self-funding capacity of the hospital.

The second type of cost is in connection with the performance of expenditures incurred in collecting the information. In so far as this information is sterilized or biased, transaction costs are enormous here. The hospital undergoes unproductive and harmful expenses to its activity. It is all or a significant part of medical services supply that may be compromised because the services offered are not paid. In fact, normally the payment of the official fees for medical acts must be able to allow the hospital to have the resources necessary for the maintenance of its equipment, especially medical devices, and to pay temporary workers. By contrast, when the hospital does not record official prices revenues for medical services, it undergoes losses that compromise its survival. Thus, the supply of some services can be stopped as a result of lack of resources for maintenance (medical devices). In addition to the transaction costs relating to the loss of credibility that results in the reduction of demand, the hospital faces the problem of funding the compensation of the patients who paid for the various medical acts, but who were not served due to lack of functional services.

On the other hand, corruption has created numerous transaction costs in the hospital system at the level of the State and the economy as a whole.

The State has consolidated most of the debts that could not have been borne by these hospitals. Of course, all these debts are not just due to corruption. The fall of the prices of raw materials and the general depression of the economy can also be listed. It is also known that many debts have been compromised because the users did not pay the official prices of the medical services from which they had benefited. The State has had to socialize, through budget expenditures, transaction costs arising from decisions to take care of patients where corruption played a decisive role. To these direct transaction costs are added indirect transaction costs in terms of opportunity costs for all necessary medical device expenses, which had been postponed to cover the costs of the hospital restructuring.

The importance of transaction costs also called "negative external effects" is greater as the high level of "hidden information" is at the root of a loss of generalized credibility. This loss of credibility is accentuated by the fact that the various signals no longer play their role and the various incentives are ineffective. It is characterized in the doctor by the simple fact that in the users' view, doctors are all corrupt.

In order to protect themselves or to reduce the transaction costs known as "negative effects" following the opportunistic behavior of the other party, the two parties will bear additional costs known as "agency costs". The agency relationship involves property rights (Charreaux, 1999). The "hidden information" accentuates the moral hazard; which reinforces the risk and pre-contractual costs. The supposed opportunism of the agent only reinforces the problem related to the single limited rationality which implies that the principal anticipates the post-contractual risk. The State can refuse to contract, in anticipation of the moral hazard. The result is an opportunity cost, if in the future, the contract can be profitable and beneficial for the State. For example, the State may refuse to recruit the doctor if the State considers that the doctor, given his past legal and behavioral background, does not offer enough guarantees for future socialization and professional performance. The result is a residual loss if the unregistered doctor is not only a repentant motivated towards the public service, but also, has vocation, all things that would have made him an excellent doctor for the public hospital. Despite the State's investment in reducing the phenomenon of adverse selection, the incompleteness of contracts contributes to limit the rational nature of these measures. *To deal with the incompleteness of contracts that binds the State to its agents, the State of Cameroon has put in place a number of legal measures* against corruption and resort to fake, and has introduced penalties in case of fraud for a fake diploma. It has also strengthened the pre-contractual information mechanisms such as the file study to learn about the potential agent's competence¹⁰. All these different measures lead to higher ex ante agency costs.

¹⁰ Here she has a global perspective that refers to the technical and attitudinal performance (that is, all knowledge, know-how, know-how and knowledge).

To reduce the impact of doctors' moral hazard transaction costs that negatively impact the functioning of public hospitals in Cameroon the State will bear another form of additional agency costs called ex post. These ex post agency costs, which Charreaux (1999) assimilates to the ex-post transaction costs of Williamson (1985), fall into three categories.

The first category is called "contract and transaction mismatch costs related to the evolution of the contract curve". It includes the costs incurred in recycling doctors, the costs inherent in the career development of doctors and the costs incurred in the context of territorial redeployment of doctors. In particular, the costs of the doctor's family members when he is transferred to a distant work place. The second category concerns the bargaining costs that the State endures during negotiations with the medical order to correct the unsuitability of the contracts. These costs include the attendance fees, expenses for organizing various meetings, the expenses for drafting the various resolutions, the expenses for printing and revising the contracts. It is also the measures taken by the State to limit corruption with impact on working time. The Government of Cameroon has designed a program implemented in all major health facilities that has led to a single cash desk for the payment of medical fees. Information on rates and payment terms is clearly displayed, patients know who to report an offense to, health workers receive bonuses on fees that are waived in case rules are violated, and the names of those who receive a bonus and those who can no longer claim it are published. All the public health care centers have the obligation to put at the disposal of the minister in charge of public health, all the documents which can enlighten him on the management of these health care centers¹¹. In general, the State of Cameroon has set up a system of individualization of remuneration for public health personnel that includes a share on performance. Public sector doctors receive a salary plus an incentive paid by the institution. The mechanism is simple: a portion of the hospital's revenue generated by medical

¹¹ Order of 20 September 1999, amending and supplementing certain provisions of Decree No. 5 / MSP of 15 July 1994 laying down the procedures for the internal allocation of receipts for the expenditure of public health facilities.

Ch.6. Effects of corruption on the functioning of the public hospitals in Cameroun treatments is redistributed to hospital staff based on their performance. According to Article 2 of the Decree of 20 September 1999, the revenue thus calculated includes a portion allocated to staff motivation, in proportion to the yield, i.e. 30%. For more equity, taking structural contingencies into account, 10% are transferred to a public treasury account to be redistributed to hospitals with lower revenue.

This practice, which is similar to fee-for-service in the private sector, aims to reduce the financial inadequacy of contracts in the public health sector. The last category of agency costs borne by the State is in connection with the costs of setting up and running the governance structures for conflict resolution. These include, among others, branches of the National Commission against Corruption (NACOC) and consultation structures with doctors.

Mean while the doctor bears the costs of customs clearance and the costs associated with influential activities that aim at affecting the distribution of income earned through forms of corruption or not. As an example of the customs clearance costs, there are the costs borne by the doctor to have fake medical certificates established, to acquire fake funeral programs of close relatives, as well as the expenses relating to the signing of authorizations by the hospital director, or the sums paid to colleagues to cover the absence of the doctor in delicacy to convince the principal of his benevolence. As concerns the costs associated with influential activities, it often happens that doctors take ownership of most of the income generated by the care activities, minimize the performance of other health workers, or justify the reduction of their annuity by the necessity of an investment in the hospital's interest without proving it. This state of affairs is at the origin of the limits of the incentive system implemented as a competences mobilization factor; this raises the problem of the efficiency of the agency costs incurred by the hospital to reduce asymmetric information.

Conclusion and recommendations

Finally, the analysis of the flow of information between the director of the hospital and the doctors makes it possible to understand the negative impact that corruption can have on the

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functioning of public hospitals in Cameroon as a factor that generates moral hazard and anti-selection risks both from the point of view of individual economic agents and for the community as a whole. The extent of the crisis in hospital functioning in Cameroon can only be understood if corruption is not included in the analysis, not only as an essential causal factor of the crisis and its aggravation, but also as an explanatory factor for the persistence and difficulty of finalizing the process of hospital restructuring.

Beyond bureaucratic dysfunctions, corruption has generated and consolidated asymmetric information, disrupted the arrangement of care contracts for patients, and even significantly diverted the rules of the game between actors. The goal, as the analysis of Tollison (1982)¹² confirms, aims at maximizing income. However, this reorientation of the rules of the game contributes to the creation of parallel informal institutions, accentuates the loss of credibility of the hospital system and helps to divert some users from public hospitals. *The incentive policy has failed to reconcile the antagonistic and selfish interests of doctors and those of the hospital. The value of corruption exceeds that of honesty among most doctors:*

The public hospital in Cameroon is no longer able to offer agents a salary of efficiency¹³. The mixed result of financial incentives developed by the state proves that if the efficiency wage is indispensable, it is not enough. The corruption surveillance system to prevent its introduction is not optimal.

The measures taken by the State of Cameroon are based on the theory of information assumptions. The theory of information is based on two strong hypotheses; namely that every agent is a "slacker" and that the principal is benevolent. It does not take into account the irrational or even greedy character of some doctors who even after being paid up the so-called efficiency wage continue to collect bribes.

¹² For Tollison (1982), "bureaucrats manipulate rules, laws and regulations in order to reap the maximum rent".

¹³ It is equal to the expectation of gains associated with corruption, likely to prevent corruption.

The eradication of the phenomenon appears not only as an economic¹⁴ but also as a social¹⁵ requirement. However, does the attainment of such an objective need a thorough knowledge of the channels through which corruption practices transit to adversely affect the functioning of hospitals? Should we admit that the doctor in his public work place can receive private clients on his own account for a few hours in exchange for a tax to be paid to the hospital as it is the case in some countries? Alternatively, should we not recruit only "public service dealer" personnel?

Unfortunately, this study does not enable us to know more in the sense that the hospital is represented by its director the principal and the doctor in charge of a department the agent. The study ignores the dual nature of the agency relationship. However, considering that the director of the hospital is an agent and the Ministry of Health, the principal, the study of the impact of corruption on the functioning crisis of public hospitals in Cameroon enables to address another dimension likely to reveal other channels through which the phenomenon transits to affect the public hospital system. Future studies will enable us to know more.

¹⁴ As a condition for growth that cannot be sustainable without a hospital system

¹⁵ As an institution that must effectively improve the health and well-being of users, notwithstanding the supporters of the "public choice" for whom, the bribe would not represent a social loss

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