



# Determinants of Financial Instability in Selected *East and Southern African* Countries

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**Abstract:** These studies intend to identify the major determinants of financial instability in the East and Southern African Countries from 2010 to 2019. The issue of financial instability has, for long, been the major concern of policy makers, but still, there have been on-going debates and extensive discussions on measuring the financial instability. Several studies show that limits on LTV and DTI ratios can curb the feedback loop between mortgage credit availability and house price appreciation. Nevertheless, there is to date only every limited analysis of any macroeconomic effects and the use of macroprudential tools and no macro prudential instruments in East and Southern African Countries in general. Study used Credit growth and PCA analysis of financial stability index and system GMM model to identify financial instability in contemporary inclusive financial economy. FII constructed based on PCA of different variables like bank Z-Score and net interest margin in the first scenarios and using composite index of Credit growth, banking Score and net interest margin in the second scenarios. Result of the study reveals FII affected by Money supply, debt growth, inflation rate and economic growth etc. In spite of the credible theoretical arguments, using the system GMM method study found that FII negatively affected by Money supplies, debt growth, inflation rate, volatility of economic growth in 14 East and Southern African Countries included in the study between 2010 and 2019. Therefore, building integrated, coordinated and potentially consistent macro prudential policies was required to avoid negative spillovers that could counteract the financial instability. Furthermore, to constrain funding or liquidity risks, liquidity-related instruments like limits on net open currency positions, currency mismatches and reserve requirements are an asset.

**Keywords:** Financial Instability, System GMM, Credit to GDP Gap, Net Interest Margin, Z-score, Principal Component Analysis

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## 1. Introduction

The great depression in 1932, the Russian housing bubble in 1998, the dot.com bubble at 2000 and the recent credit crunch are the outcomes of financial instability. Due to financial instability, financial crisis is inevitable to occur. Examples of major financial crisis due to financial instability are; Credit Crisis of 1772 which originated in London and quickly spread to the rest of Europe. In the mid-1760s the British Empire had accumulated an enormous amount of

wealth through its colonial possessions and trade created an aura of over optimism and a period of rapid credit expansion by many British banks.

The hard sell came to rushed end on June 8, 1772, when Alexander Fordyce—one of the partners of the British banking house fled to France to escape his debt repayments.

The news quickly spread and triggered a banking panic in England, as creditors began to form long lines in front of British banks to demand instant cash withdrawals. Another crisis due low investments and banking low interest rate in Great Depression of 1929–39 and OPEC Oil Price Shock of 1973:

OPEC countries declared an oil embargo, abruptly halting oil exports to the United States and its allies led to an economic crisis in the U.S. and many other developed countries. As a result, economists named the era a period of “stagflation” (stagnation plus inflation), and it took several years for output to recover and inflation to fall to its pre-crisis levels [26].

The fourth is Asian Crisis of 1997: Speculative capital flows from developed countries to the East Asian economies of Thailand, Indonesia, Malaysia, Singapore, Hong Kong, and South Korea (known then as the “Asian tigers”) had triggered an era of optimism that resulted in an overextension of credit and too much debt accumulation in those economies. The Financial Crisis of 2007–08: Triggered by the collapse of the housing bubble in the U.S., the crisis resulted in the collapse of Lehman Brothers, brought many key financial institutions and businesses to the brink of collapse, and required government bailouts of unprecedented proportions [19].

Financial systems in Sub-Saharan Africa have remained highly exclusive. However, this exclusiveness is a primarily result of market failures that make the provision of financial services to lower-income groups. [7] Study underlines that financial sector in the inter-governmental authority on development, IGAD region is greatly dominated by the banking activities. The East Africa within Sub-Saharan African region has significant problems on the one hand and great potential for sustained economic growth on the other hand.

There are number challenges to further development which includes persistent poverty, low level of human development, non-inclusive finance and economic growth, lack of infrastructures and weaknesses in governance are among others. Furthermore, the East African FSD is very infant one because there are almost no financial markets in the region [24].

Furthermore, the East African Financial Development is very infant one because there are almost no financial markets in the region. In the literature, there are several potential determinants of macroeconomic instability which are also serving as a proxy of financial instability, for instance, inflation rate, budget deficit, trade deficit, unemployment, exchange rate, external debt and interest rate since there is an asymmetric relationship between macroeconomic instability and financial crisis which is composed of two components: an stock market development (SMD) index and the banking sector development. There are three main financial instability variables like: Z-score/NPL, Gross Domestic product, CRGDP or M2GDP are main indicator variables for financial and economic growth relationship [32].

## 2. Literature Review

The issue of financial instability has, for long, been the major concern of policymakers, but still, there have been ongoing debates and extensive discussions on measuring the financial instability. The factors of financial stability work to reduce the power of the financial crises that can occur in the countries by giving early warning system for financial crises and vice versa that financial instability may adversely affect

the economy and financial markets in the long run.

Interest system is the number one determinant of the financial crisis with 43.66% share in inducing inflation and 24.85% share in curbing economic growth, followed by administered price (Governance) with 14.41% share in inducing inflation and 5.33% share in curbing economic growth, fiat money with 5.54% share in inducing inflation and 13.49% share in curbing economic growth, and volatile food (Fiscal) with 5.79% share in inducing inflation and 9.11% share in curbing economic growth [11].

Furthermore, in East Africa, there have been very infant and high exclusive of FSD, underdeveloped capital markets and weak market shares, lack of capacity and regulatory framework and poor supervision. The financial activities are characterized by monopolistic behavior of a few commercial banks, owned by governments that cause less competent and compete among themselves. More importantly, the financial systems have remained highly exclusive and this exclusiveness is the result of market failures [30].

Limits on loan-to-value (LTV) and debt-to-income (DTI) ratios are increasingly being viewed as useful to contain potentially damaging boom-bust cycles in residential housing markets. An LTV ratio imposes a cap on the size of the loan relative to the value of the property, thereby imposing a minimum down payment. In principle, even a static, but conservatively calibrated LTV ratio can strongly affect house price dynamics. Its effect can be enhanced when the calibration is varied with cyclical conditions in the housing market (as in Korea and Hong Kong SAR), or when it is complemented with a DTI ratio and Macro prudential instruments may reduce the correlation between credit growth and GDP growth.

Several studies show that limits on LTV and DTI ratios can curb the feedback loop between mortgage credit availability and house price appreciation. Never the less, there is to date only a very limited analysis of any macroeconomic effects and the use of macro prudential tools and no macro prudential instruments in *East and Southern African* Countries in general [31]. Therefore the study on the determinants of financial instability in selected *East and Southern African* countries will substantiate to fulfil study gap.

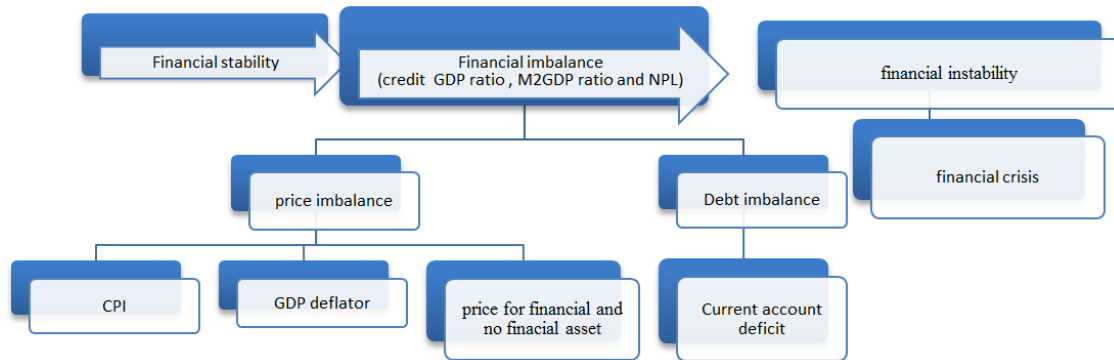
The definition of financial stability is controversial. It generally means the joint stability of key financial institutions operating within financial markets and the stability of those markets. *Financial stability depends critically upon the degree to promote: output by minimizing fluctuations in real activity to promote financial system. Sound public finances are essential: include public deficit and debt levels should be sustainable and moderate* [4].

There is no full consensus in the literature on the definition of crisis occurrence. For example, while currency crises are commonly defined as episodes of massive exchange rate depreciation, the term ‘massive’ covers losses of currency value ranging from 15% to more than 30% across different studies. The data exhibit the exact timing of crises, and end of crises, is a subject of generous discrepancy among surveyed. The mean duration is 15.2 quarters for banking crises, 4.1 quarters for debt crises and 4.6 quarters for currency crises [18].

### 3. Conceptual Framework of Determinants Financial Instability

The emergence and spreading of certain manifestations of financial imbalances lead to the loss of flexibility an economic system's major elements; instability in domestic markets reduces incentives and opportunities for economic growth; permanent uncertainty destroys social capital and

generates depressive mood in society. Consequently, the study of financial imbalances as causes of the instability of national economies, the identification of their immanent features, the development of their identification and evaluation techniques, and regulatory mechanisms will contribute to ensuring financial stability and prevent spreading of negative local fluctuations in the functioning of the global economy.



Adapted from: Developed by the authors

Figure 1. Conceptual framework for Determinants of financial instability.

### 4. Research Methodology

Study Produce a database of financial crises since 1800 [3]. They characterize four types of financial crisis: 1. Inflation, 2. Currency, 3. Sovereign debt 4 banking crisis. (Reinhart and Rogoff 2009) find three characteristics of a banking crisis: There is a large decline in asset prices (house prices down an average 35% over 6 years and equity prices down 55% over three or four years). A fall in GDP (real per-capita GDP falls 9% peak to trough on average) and a rise in unemployment (7 percentage points); an increase in government debt (a rise of an average 86 percentage points).

To achieve the objectives of the thesis secondary data spanning for the period 1995 to 2019 from East and South African countries has been used. The data were sourced from the World Development Indicators from 2010 to 2019 year database. The sample countries included in this study are 14; namely; Ethiopia, Eritrea, Kenya, Rwanda, Uganda, Tanzania, Burundi, Comoros, Djibouti, Zambia, and Zimbabwe based on availability of data. Different methods of data have been analyzed to achieve the specific objectives of the study. This study has employed System GMM model to identify determinants of financial instability.

The panel model has used to examine the determinants of financial instability variables on the economic growth of East and South African countries by using system:

$$g_{yi} = f(V, Z_i) \quad (1)$$

where  $g_{yi}$  refers annual growth rate of GDP,  $V$  is another controlled variable that determine economic growth and  $Z_i$  denotes financial variables explained with M2GDP ratio and

Credit to GDP gap ratio. System GMM has three advantages, which Dynamic GMM estimator does not have.

First, it's suited to estimate long run relationships between growth and financial instability while still controlling heterogeneity characteristics of countries. Second, it highly minimizes measurement error. Third, the explanatory variables are instrumented by their respective lags, eliminating the endogeneity problem between growth and explanatory variable.

A variant of the production function in:

$$Y = A(hL)^\alpha K^\beta \mu^{1-\alpha-\beta} \text{ and } \lambda = M^Z \quad (2)$$

In recardian equivalence hypothesis theory, source of financing can be from government/private borrowing which crowd out private investment hence decreases economic growth, foreign borrowing will create debt burden while printing money leads inflation. Thus monetary base include currency plus deposit (required reserve and excess reserve).

Dependent variables: We have used Principal components analysis to formulate index (NET and CRGDPgap) of dependent variables and to show robustness of finding, both System GMM and GMM model has been used.

Explanatory Variables:

Economic growth: - It is dependent variable measured in terms of GDP growth rate or GDP Per capita income growth rate within fiscal year. It is continuous variable measured based on international standard unit of measurement called US dollar. It is hypothesized to decrease financial instability and increase financial stability index [27].

Money market Growth rate (M2GDPgap ratio): It is continuous variables and money supply measured in terms of M2GDP ratio which is currency plus deposit. Excessive growth in Money supply create massive asset liquidation due

to the race of debt repayment of borrowers is the cause of a collapse of asset prices and hypothesized to have increase financial instability and decrease financial stability index [1].

Lag FSI rate: it has been hypothesized to affect financial instability positively.

External debt (lnExtdeb): It is continuous variable measured as ratio of total external debt to GDP of that country in a year. Fiscal uncertainty also has direct effects on the asset prices consistent with the effect of the debt-to-GDP ratio. Furthermore, scale uncertainty increases debt valuation through the discount rate channel whereas higher debt conversely raises uncertainty because of future scale consolidations. Hence, debt ratio in East and South African countries hypothesized to increase financial instability [2].

Banking Z-score: -It's expected to affect banking instability negatively in financially developed countries and a low-risk bank will have a high value of z- score. However, excess expansion of credit, shares and equity result in higher Z-score which is positively affect banking instability and financial stress as [17].

Non-performing loan (NPL): As NPL increase by one percent, financial Instability index decrease by 0.0218 based on system GMM model others remain constant at their mean while insignificant based on GMM model. The result was in contrast with economic literature that NPL affects banking stability and create bank crisis in many countries consequently increase financial instability. This may be due to the fact that infant stage of banking industry in East and Southern African countries and high non-performing loans of credit growth not at stage of bank instability rather it stimulates credit expansion.

Return on Equity (REO): Banks are incentivized to focus on managing capital to maximize shareholder value versus growing earnings expect to increase financial instability at lower level of REO but decrease at a higher level.

Current account deficit (CA): A country running a large current account surplus typically sees upward pressure on its real exchange rate hence, expected to decrease financial stability index [13].

Remittances (rem): It is measured by ratio remittance as percentage of GDP in a year. The other major cause of the African financial crisis is the decline in the capital inflow and remittances. Hence, FDI in East and South African countries hypothesized to be affect financial stability positively and negatively [29].

Inflation: is used as an indicator of macroeconomic instability and Inflation is has negative or positive effect on financial stability index. State fragility is usually accompanied by inflation, exchange rate instability and problems of managing finance and payment systems [19].

Foreign direct investment (FDI): FDI increase has two effects it can stabilize financial stability through improving exchange rate for Developing countries in the short run but if there is capital flight it can increase instability. The other major cause of the African financial crisis is the decline in the capital inflow and remittances. Hence, FDI in East and South African countries hypothesized to be affect financial stability

positively and negatively. Kotlikof, Laurence J, et al, (2016).

Population growth rate (POPg); population growth rate was continuous variable measured in terms percentage of population increase in each fiscal year. Population growth hypothesized to be affect economic growth positively or negatively hence financial stability.

Political stability index: The exigencies of a war and the centralization of the exercise of power generally lead to the deterioration of fiscal discipline and related monetary, budgetary and financial management. It also raises risk and hence the cost of finance” [9]. Thus, the linkages between the financial sector and conflict are very strong though they appear to be tenuous.

**Table 1.** Definitions of variables and hypothesis.

Variables	Measurement	Expectedsign.
FII	Index	Dependent
GDPg	In Percentage	Positive
NPL	Non performing loan	-ve
CA	Current Account balance ratio	+ve
Extrdeb	External debt to GDP	-ve
FDI	Foreign direct investment	Positive
M2GDPgap	Broad money to GDP	+ve/-ve
INF	Inflation rate	-ve/+ve
ROE	Return on equity	+ve/-ve
LgaoffII <sub>t-1</sub>	Lagged finacial Instability index	Positive
Zscore	Banking Zscore	+ve/-ve
Nonperformingloan	Shows banking inefficiency	-ve
Remittance	Remittance to GDP	+ve/-ve

System GMM Model: Here INDEX of financial instability was dependent variable while others are explanatory variables. Original model in level form with First Difference as instruments

$$I2it = \theta I2i_{t-1} + \beta \sum Xit + r \sum Zit + (\delta it + \epsilon it) \quad (3)$$

Second equation in First Difference form with level as instruments

$$\Delta I2it = \Delta \theta I2i_{t-1} + \Delta \sum Xit + \Delta r \sum Zit + + (\Delta \epsilon it) \quad (4)$$

One equation is expressed in Level form with first difference as instruments while second equation expressed in difference form with level as instruments.<sup>1</sup>

$$I2it = B0 + B1I2it - 1 + B2lnExDit + B3iZscoreit + B4CAit + B5Infit + B6POPit + B7FDIit + B8Polistit + B9Consit + B10Remit + B11CFit + B12GDPit + \phi \Delta \sum_{i=1}^{p-1} (I2it - 1) + \Delta \sum_{j=0}^{q-1} CAit_1 + \partial it \quad (5)$$

Adapted from: [15]

Lagged of FS growth per capita (GDPT-1) - it measures the

<sup>1</sup>If the difference GMM estimate close or below fixed effect estimates, this suggests that GMM Estimate is down ward biased because of weak instruments and system GMM is preferred. It is also advisable to use system GMM if variable exhibits Random walk. Hansen (1982)J test and Sargan (1985) test of over identifying restriction will used to identify instrumental validity. Failure to reject null hypothesis assume instrument is valid not over identified (if P-Value greater than 0.5). Test for Serial Autocorrelation test (AR2); Failure to reject null hypothesis implies the model has no serial correlation.

convergence of economies to stationary equilibrium in the long run. According to Solow's absolute convergence theory, poor countries tend to grow faster than rich countries. Fewer developing countries tend to slowly return to equilibrium [21].

Banking stability measured by (capital adequacy ratio, reserve liquidity ratio, and NPL) also decrease instability [16].

## 5. Result and Discussion

A descriptive presentation of the results heavily relies on the principal component analysis. Finding a strong correlation between variables and each component is the basis for the interpretation of the principal components, that is, which of these numbers are large in magnitude the farthest that one moves from zero in either a positive or negative direction. One needs to determine at what level the correlation value will be of importance. Here a correlation value above 0.5 is considered to be important. Only those numbers that exceed 0.5 in absolute value are retained and those that are below it are dropped.

Table 2 see principal component Analysis on appendix.

Since lag value of Financial instability index parameter was lower, using difference GMM gives biased and inconsistent estimator Blunden and Bond (1998) attributes poor estimator of difference GMM in this case mainly in short period data. In addition to this since first lag of dependent variables for fixed effect and pooled OLS lower System GMM was better than difference GMM.

*Table 2. Regression models result for dynamic panel data.*

Variables	System GMM	Diff. GMM
Lag of Financial instability index	.521***	
Growth of GDPPC	.050***	.0533***
Money Supply to GDP	.0058***	.0533***
Banking Z-SCORE	-.0911***	-.158***
Logarithmic of Debt to GDP ratio	-.195**	-.168***
Non-performing loan ratio	.0452***	.039***
Return on Equity	-.005	-.011***
Inflation rate	-.005	.008**
Remittance ratio	-.0538**	-.085***
Current account ratio	-.0114***	-.0089***
Logarithmic of FDI to GDP	.0316	.0467*
Log of Population to GDP	-.0193	-.093***
Political stability	.166	.0772**
Constant	1.926***	3.32***
Sargen test	1.00	
Hansen test	0.000	

The variables with varying signs which are statistically insignificant can be explained analogously. Therefore, the higher the p-value of the Hansen J test statistic the better it is. With respect to the serial correlation test, one should reject the null of the absence of the first-order serial correlation (AR1) and should not reject the absence of the second-order serial correlation (AR2). However, the interpretations should be taken as the models pass the first-order autoregressive test, AR (1) of the error term. The second System GMM2 best since it rejects null hypotheses of first-order autoregressive test, AR (1) of the error term and verify that instrumental validity of the model, since  $AR(1)=0.006$ , and  $AR(2)=0.331$

while Hansen test (0.000) and Sargen test (1.00) hence accept (null hypothesis of the test implies all instruments are valid) and respectively. The models reject the null hypothesis of 'no autocorrelation' of the first-order which implies model specification is good but fails to reject over identification of instrument in the first case.

First, the p-value must be greater than 5%. Second, the p-value must not be less than 0.1. Third, the p-value must be greater than 0.25. In the extant case, p-values of 0.52 and 0.66 is a serious call for concern. Sargen test of over identifying restrictions

So, for me the above results with p-values of 0.52 and 0.66 indicate the groups of instruments used in the analysis are validly exogenous.

The model's diagnostic tests show that the system GMM model given in column 4.1 is well specified and satisfies all the tests. When the index of (14) increases, financial Instability also increases. Using comparative of system GMM and Difference GMM; the results became similar except FDI, population growth, Remittance ratio and inflation rate insignificant under system GMM. Based on the result of system GMM and GMM model all variables are have the same and anticipated sign that reveals the robustness of the findings. Consequently, all variables like, Banking-Zscore, External debt ratio, remittance ratio and current account deficit decrease financial instability index while lag of financial instability Index, GDPgap ratio, M2GDPgap ratio, and nonperforming loan ratio increase financial instability Index based on system GMM model [14].

Lag financial stability index ( $I2_{t-1}$ ): The dynamic financial stability index model confirm the positive relationship between past values of financial Instability index with current financial instability index suggesting that the past financial instability worsen the current value. Lag of financial instability index also confirms the existence correlation between short run and long run effect of current financial instability index on next year's financial instability. If current financial instability index increase by one percent next year's financial instability index increase 52 percent within one year others remain constant [25].

GDP gap growth rate: as volatility of GDP growth increase by one percent, financial instability index increase by 5percent others remain constant at their mean. The result was in line with economic literature that volatility of GDP was driving force for financial volatility/crises.

Money to GDP gap ratio: it has positive effect on financial instability which implies increase in money supply ratio increase financial instabilities index. If Money to GDP gap ratio increase by one percent, financial instability index increase by 0.5 percent others remain constant at their mean. Hence, macro prudential policies better to be focus at ensuring the stability of the financial system as a whole to prevent substantial disruptions in credit and contractionary monetary policy necessary for financial stability.

External debt (Extedeb): External debt to GDP ratio has negative impact on financial instability index that indicates one percentage increase in external debt ratio, financial

instability index also decrease by 19.5 percent. The result similar with other findings of developing countries debt will be a source of foreign exchange earning in short run but it will increase financial turmoil or instability during debt repayment.

**Banking Z-score:** Z-score compares the buffer of a country's banking system with the volatility of those returns. The main consequence of this measure is that a low-risk bank will have a high value of z- score, indicating that a large number of standard deviations of a bank's asset return. In line with In line with Długoszek,(2018) as Z-score increase by one percent financial instability decrease by 9.1 percent based on System GMM models. This indicates that higher Z-score indicate a large number of standard deviations of a bank's asset return and banking sector development.

**Non-performing loan (NPL):** As NPL increase by one percent, financial Instability index increase by 4.5 percent other things remain constant. The result was similar with economic literature that NPL affects banking stability and create bank crisis in many countries consequently increase financial instability.

**Current account deficit (CA):** current account balance has negative impact on financial instability index. Consistent with theory of a country running a large current account surplus typically sees upward pressure on its real exchange rate and will have stable financial system. As current account ratio increase by one percent, financial instability decrease by 1.1 percent. The result also similar with Empirical findings that suggest major cause of the financial crisis in Africa was the reduction in the prices and amount of the export commodities because of the global financial crisis.

**Remittances (rem):** As remittance increase by one percent, financial instability index decrease by 5.3 percent. The result consistent with findings of [13] that major cause of the African financial crisis is the decline in the capital inflow and remittances.

Some of our results are same with [12] findings that there is a positive effect of trade openness and remittances on financial instability even though his model does not pass the instrument over-identifying tests and the first-order autocorrelation test as indicated by a very high p-value (0.374). There is a near consensus in the literature that poor economic of East and South African countries are often associated with lack of poor performance of institutions which promote rent seeking and corruption thus impeding the process of economic growth.

## 6. Summary, Conclusion and Recommendation

It was found that higher level of GDPgap ratio, M2GDPgap ratio, and nonperforming loan ratio, increase financial volatility, while financial volatility itself reduces growth. The data unambiguously affirm that GDP gap ratio exhibits greater financial instability developing countries than in the developed world. The IMF believes that monetary

policy has little power to prevent financial imbalances. An additional difficulty for using monetary policy to ensure financial stability is that it can damage a central bank's credibility. In any case, financial instability and its links to macroeconomic stability are once again centre stage in economic policy. The System GMM estimator indicates that countries those have higher level of banking-Z score; access for External debt to GDP ratio, higher level of remittance to GDP ratio and surplus current account have lower level of financial instability.

Financial instability mainly affects banking sector leads to crisis in finance sector and international exchange rates, adverse effects on capital inflows. The ultimate effects of the financial instability were the deviation in credit to GDP ratio from its trend, and greater net interest margin. These problems will improve through increase in external debt, lower level of current account deficit, decrease nonperforming loan, stimulates the level of remittance ratio, and by contractionary macro prudential policy concomitant with monetary policy in East and South African countries. Generally, the models are generally correct from the econometric point of view. The most of explanatory variables often are statistically significant (but some exceptions are present). The System GMM model was best since it rejects null hypotheses of first-order autoregressive test, AR (1) of the error term and verify that instrumental validity of the model, hence AR (1)=0.006, and AR (2)=0.331 while Hansen test and Sargen test (0.000) and (1.00) respectively. As regards economic fit, the signs of the estimated parameters for the other control variables are generally in line with the economic theory. Financial crisis leads to high leverage and systemic banking crises.

For the appropriate setting of countercyclical macro prudential policy instruments, it is therefore important to identify periods of excessive credit developments at an early stage. This finding also confirms that the many factors can amplify financial instability varies across countries due to many factors such as the heterogeneous nature of economic structures, banking Z-score, amount of nonperforming loan ratio, money supply, current account, ratio of remittance and credit booms.

In a first-best world, monetary policy can take care of price stability, while macro prudential policy achieves financial stability. In the pursuit of price stability, monetary policy may nevertheless have undesirable side-effects on financial stability.

Since a primary focus of this study was determinants of financial instability as proxy of net interest margin and credit GDP gap ratio FED advised to:

Decrease net interest rate margin and credit volatility through *developing the capacity to monitor and analyze systemic risk, and activate macro prudential tools targeting to control excessive credit growth and net interest margin.*

Use macro prudential policy that reduces systemic risks and creates buffers, assists monetary policy in the face of adverse financial shocks thereby prevented credit booms by tightening Loan to Value ratio and capital control, since

monetary conditions may create credit booms and non-performing loan.

Develop new policy measures that afford recipients of remittances to have option of receiving the funds in foreign currency cash or into their ordinary domiciliary and to liberalize, simplify and improve the receipt and administration of the Diaspora remittances in East and Southern African countries.

Our results are of potential importance to policymakers in

terms of optimizing the financial stability that needs to be undertaken to ensure that the maximum possible gain for the economy can be achieved through the banking sector: thus, policymakers should seek to strengthen the a new global governance system, the establishment of stable exchange rates, mechanisms to prevent high current account imbalances in addition to using export promotion and import substitutions strategy.

## Appendix

### Appendix 1. Principal Component Analysis

```
Principal components/correlation      Number of obs      =      140
                                      Number of comp.    =       2
                                      Trace               =       2
Rotation: (unrotated = principal)    Rho                =     1.0000
```

Component	Eigenvalue	Difference	Proportion	Cumulative
Comp1	1.48898	.977967	0.7445	0.7445
Comp2	.511017	.	0.2555	1.0000

Principal components (eigenvectors)

Variable	Comp1	Comp2	Unexplained
Crgap	-0.7071	0.7071	0
NET	0.7071	0.7071	0

**Figure 2.** Principal Component Analysis.

### Appendix 1. Rotated Principal Component Analysis

Rotated components (blanks are abs (loading) < .5)

Variable	Comp1	Comp2	Comp3	Comp4	Comp5	Comp6	Comp7	Unexplained
GDPgap						0.9258		.0434
M2GAP								.1024
Crgap	0.6028							.07077
lnEXTDEB		0.6690						.1531
Trade								.1939
NET					0.8198			.05804
FD	0.5193							.1636
zscore							0.9007	.03897
rem			-0.5636					.1319
FDI								.2015
LNFIN			0.7402					.09823
CA				0.7354				.1047
NPL				0.6013				.1607

**Figure 3.** Rotated Principal Component Analysis.

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