ANALYSIS OF THE EFFECTS OF FISCAL DECENTRALISATION ON ECONOMIC GROWTH IN SUB SAHARA AFRICA – REF TO UGANDA

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INTRODUCTION

1.1 Back ground to the Study

Fiscal decentralization refers to the process of devolving fiscal responsibility to lower levels of government in accordance with these local needs and preferences. It involves defining fiscal responsibilities of the different levels of government. It also consists of fiscal instruments and procedures that have the aim of helping in the delivery of public goods (Bird, Ebel, and C. I. Wallich, (Eds, 1995). In general, fiscal decentralization means that the authority of tax collection or expenditure is transferred from superior offices to subordinate offices (Choi · Jung, 2001) for the purpose of producing appropriate public-services for improving the public welfare of residents. Thiessen (2001) views fiscal decentralization as entailing “a transfer of responsibility associated with accountability to sub-national governments”.

Theory suggests that close match between revenue and expenditure assignment at sub-national levels benefits allocative efficiency, and hence economic growth. That is a convergence of revenue and expenditure assignments at sub-national levels of government should be according to the theory, and be positively associated with higher growth rates. This belief is further evidenced in various studies though there could be implications for resource redistribution (Martinez-Vazquez & McNab, 2001). Fiscal decentralization is often seen as part of a reform package to improve efficiency in the public sector, to increase competition among sub-national governments in delivering public services, and to stimulate economic growth (Bird & Wallich, 1993). The main issues of concern regarding fiscal decentralization and economic growth are tax jurisdictions, expenditure responsibilities and resource allocation.

The devolution of financial responsibility to sub-national government in Uganda is enshrined within the constitution of the republic of Uganda of 1995 (Article193 and the Seventh Schedule) and the Local Governments Act Cap 243 (Section 83), which specify three types of granting systems from central to local governments namely; Unconditional grant (UCG), Conditional grants (CG) and Equalization grant (EG) Systems for fiscal decentralization that have been
developed gradually since 1995/1996 financial year, when the first batch of districts received only unconditional grant, however no study has been undertaken to analyze its effects on economic growth in Uganda. The centre-local (intergovernmental) fiscal relations covers two interrelated dimensions in Uganda and that is the division of spending responsibilities and revenue sources between tiers of government\(^1\), and the amount of discretionary power given to sub-national governments to determine their expenditures and revenues, both in aggregate and details.

Whilst the total volume of resources transferred to Local Governments through all three mechanisms has dramatically increased since the mid-1990s, the number of conditional grants has proliferated and the volume of resources, relative to the resource transfers through other Grant mechanisms. An increasing share of fiscal transfers to Local Governments now occurs through the Poverty Action Fund (PAF) framework. This was incepted in 1998/1999 to provide confidence to donors that debt relief and donor support is channeled to investments in facilities and services to alleviate poverty.

The Paper will complement the unfinished research agenda on the varying patterns of effects of fiscal decentralization on economic growth in the region and contribute to the new institutional environment created by decentralization policies, for example the role performance measurement in the relation between central government, local government and its constituents.

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\(^1\) Commonly referred to as national, regional, and local governments (or simply national and sub-national governments);
METHODOLOGY

Research Design
The study uses both quantitative and qualitative research design. Quantitative data allows the research to meaningfully describe the distribution of variable using standard statistical procedures. This study uses cointegration technique which allows us to test for the presence of non – spurious long run relationship between variables under study. The cointegration test also involves error correction mechanism (ECM). The ECM is considered a dynamic process in that it involves lags of the dependent and independent variables. While it captures short run adjustments to changes, long run relationship is established in the level form. Prior to conducting the cointegration test, I will perform two unit roots tests (the Augmented Dickey – Fuller and the Phillips – Perron tests) to ensure that all variables under consideration are of the same order of integration in particular 1(1). In addition Granger Casuality test (in the case of the relationship not integrated is performed)

1.2 Empirical Model
The model used in this study was adapted from the growth model used by Carlino and Mills (1987) as shown below.

**Employment Growth**

\[ E_t = \alpha_0 Population \text{ Growth} + \alpha_1 Fiscal \text{ Decentralization} + \alpha_2 Local \text{ Government Characteristics} + \alpha_3 Economic \text{ Characteristics} + \alpha_4 Central \text{ Government Dummies} + Error \text{ Term} \]

**Population Growth**

\[ G_t = \beta_0 Employment \text{ Growth} + \beta_1 Fiscal \text{ Decentralization} + \beta_2 Local \text{ Government Characteristics} + \beta_3 Economic \text{ Characteristics} + \beta_4 Central \text{ Government Dummies} + Error \text{ Term} \]

The system of equations shown above will be estimated using a two stage least squares (2SLS) approach. The endogenous variables will be population growth and employment growth from
1995 to 2011. From the theoretical framework, the exogenous variables used will be a measure of fiscal decentralization, local government characteristics, economic characteristics, and Central Government dummies. In addition, the endogenous variables will be included as independent variables as shown in equations (1) and (2). The error term is assumed to be normally distributed.

### 1.3 Variable Selection

A look at the literature reveals that fiscal decentralization is measured in different ways. Some of the most common measures used are revenue decentralization, expenditure decentralization, or fiscal autonomy. For a particular sub-national government jurisdiction, expenditure decentralization is the ratio of sub-national government expenditure to total government expenditure and revenue decentralization is the ratio of sub-national government revenue to total government revenue. Fiscal autonomy is measured as the sub-national share of local government own revenue in total local government revenue.

Since this study evaluates the effects of decentralization of welfare on local government employment and population growth, an important independent variable that will be included in the empirical model is a measure of decentralization. The measures of decentralization described above do not seem to be the most appropriate measure of decentralization for this study. The Ministry of Finance Planning and Economic Development is usually the source of local government level revenue and expenditure data. This source of Local Governments level expenditure and revenue data has some limitations that make the data inappropriate for this study. It is not very clear how the revenue and expenditure data are generated since there is insufficient metadata. Due to difficulties that the secondary data that are typically used for this variable might have, an alternative measure of fiscal decentralization will be used in the study. A dummy variable for whether or not local governments administer welfare at the local government level will be used as the decentralization measure in the estimation.
In order to test the hypothesis that fiscal decentralization causes lower economic growth in rural compared to urban local governments, I will create an interaction variable and use a t-test to check whether the coefficient on the interaction variable is significant. The interaction variable is obtained by multiplying the decentralization variable with the rural-urban variable. This will allow for comparison of more rural versus more urban counties in the effects of fiscal decentralization on economic growth.

Other independent variables that will be used are the level of human capital (measured by the population with Uganda Certificate of Education (UCE) qualification), median family income, crime rates, local government growth initiatives such as presence of industrial parks and presence of development professionals, and attraction of new businesses or expansion of old ones through incentives. The percentage of employment in manufacturing is also included in the regression.

It is hypothesized that there is a positive relation between education levels and local government economic growth. Other studies have shown that as people become more educated their productivity increases (Carlino, 1995). Higher education makes people learn better and faster on the job. Gottlieb and Fogarty (2003) show that not only will productivity increase but the rate of growth of productivity will also be higher.

Population growth and employment growth are added as regressors in the model due to the hypothesized simultaneity between the two variables. Employment growth is likely to affect population growth and population growth is also hypothesized to affect employment growth (Carlino and Mills, 1987).
1.4 Empirical Issues

There are some empirical issues that need to be addressed in the model. The study will use time series data so there is the likelihood that heteroskedasticity will be present. This will be tested for by using Pagan-Hall general test.

There is the possibility that fiscal decentralization will endogenous with respect to population and employment. Hausman test for endogeneity will be used to test for the possible relation. If the test is negative, the model will be estimated as is and will yield consistent estimates. On the contrary, if the test is positive, the endogeneity problem will be corrected for by using an instrumental variables approach. Here a regression will be run with fiscal decentralization as the dependent variable and the regressors will be the regressors from the original equation. This model when estimated will yield predicted values for the fiscal decentralization variable. These predicted values will then be used in the original equation.

1.5 Identification of Model

In estimating a simultaneous equation model, it is important to verify whether the system is possible to estimate. Firstly, to have a system of equations that is complete and can be estimated, the number of equations must be equal to the number of endogenous variables (Greene, 2003).

Secondly, it is important to verify whether the system is identified. The system must meet the rank and order conditions. The reduced form equation may have more than one solution. If the system is identified, this problem will be avoided. The condition of rank and order must be met in order to guarantee a unique solution.
According to Greene (2003), to satisfy the order condition, the number of exogenous variables (K) excluded from the equation should be larger or equal to the number of endogenous variables (M) in the system. This condition is a necessary but not sufficient condition for identification. To ensure a unique solution, the sufficient condition or rank must be met.

That is, \([\pi^*, \Pi^*] = rank[\Pi^*]\)

The structure form is \(Y' \Gamma + X'B = E'\)

\[
\begin{bmatrix}
E \\
P
\end{bmatrix} \begin{bmatrix}
1 & y_1 \\
y_2 & 1
\end{bmatrix} + \begin{bmatrix}
1 \\
X_1 \\
\vdots \\
X_K
\end{bmatrix} \begin{bmatrix}
\alpha_1 & \beta_1 \\
\vdots & \vdots \\
\alpha_k & \beta_k
\end{bmatrix} = \begin{bmatrix}
\xi_1 \\
\xi_2
\end{bmatrix}
\]

condition or rank must also be met. That is rank \([\pi^*, \Pi^*] = rank[\Pi^*] = M\)

The structural form is \(Y' \Gamma + X'B = E'\)

Or

\[
\begin{bmatrix}
E \\
P
\end{bmatrix} \begin{bmatrix}
1 & y_1 \\
y_2 & 1
\end{bmatrix} + \begin{bmatrix}
1 \\
X_1 \\
\vdots \\
X_K
\end{bmatrix} \begin{bmatrix}
\alpha_1 & \beta_1 \\
\vdots & \vdots \\
\alpha_k & \beta_k
\end{bmatrix} = \begin{bmatrix}
\xi_1 \\
\xi_2
\end{bmatrix}
\]

Y represents the endogenous variables (employment growth, E and population growth, P), \(X\) represents the exogenous variables, \(B\) represents the parameters of the exogenous variables and \(k\) is the number of exogenous variables. Solving for the reduced form of the equation gives the following:

\[Y' = -XB\Gamma^{-1} = X\Pi + V'\]

\[\Rightarrow \Pi = -B\Gamma^{-1}\]

So \(\Pi \Gamma = -B\)
And \[
\begin{bmatrix}
\pi^* \\
\Pi^*
\end{bmatrix}
\begin{bmatrix}
1 \\
-\gamma
\end{bmatrix}
= \begin{bmatrix}
\alpha
\end{bmatrix}
\]

Where \(\pi\) is the parameter for the exogenous variables and \(\pi^*\) is the parameter for the excluded variables

Thus

\[
\pi - \Pi y = \alpha
\]

\[
\pi^* - \Pi^* y = 0
\]

\(\Rightarrow\) The number of equations equals the number of exogenous variables and the number of equations equals the number of excluded variables.

The order condition will ensure that \(\pi^* - \Pi^* y = 0\) has a solution while the rank condition given as \(\text{rank}[\pi^*, \Pi^*] = \text{rank}[\Pi^*]\) ensures that \(\pi^* - \Pi^* y = 0\) has a unique solution so that the system of equations can be solved.

1.6 Data Collection Methods and Procedures

The self–administered questionnaires constitute the preferred method of data collection for this study. The questionnaire comprises mainly closed-ended questions as these are easy to fill. The questionnaire will, in addition, have open and close-ended questions. In addition, two research assistants will be employed and trained to administer the interview questionnaires and this is justified by the fact that the fact that the study will cover a wide area within a limited period.

1.7 Validity and Reliability

Validity and reliability are important for successful operation of a research process. Validity is concerned with how accurate the concepts in an instrument of data collection are defined and measured. Before administering data collection instruments, a pilot study will be conducted to assess how well respondents will understand the various items contained therein. Based on responses of the pilot test, appropriate changes will be made where necessary before the
administering the instruments. Reliability refers to the degree to which a set of variables is consistent with what they are intended to measure. The Cronbach’s Alpha approach will be used to measure the consistency of the items measuring the variables.

1.8 Data Analysis Techniques
Data obtained using questionnaires will be compiled, sorted, edited, classified and coded into a coding sheet and analyzed using a computerized data analysis package known as Statistical Package for Social Science (SPSS) Version 16.0. Descriptive statistics such as frequencies, percentages, means, and standard deviations will be used to describe participants’ responses on the variables under consideration and to summarize data in a presentable and meaningful way. The Pearson product-moment correlation coefficient ($r$) and a pre-determined significance level of 0.05 will be used to determine the relationship between the variables as outlined in the specific objectives before conducting further rigorous analysis.

Local Government growth will be assumed to be simultaneously determined by population and employment growth. As a result, a simultaneous equation model similar to models frequently used in economic growth evaluations will be estimated. The model assumes that population and employment are also determined by other factors such as characteristics of the local government, fiscal decentralization, and other social characteristics. To control for Central Government effects, Central Government dummies will also be included in the model such as inflation, level of openness and labour force growth rate. The endogenous variables will also be included as regressors in the model.

1.9 Ethical Considerations
The researcher will seek written permission from the concerned officials of Local Governments before conducting the research. In addition, respondents will be reassured that the study is
strictly academic and that utmost confidentiality will be observed. The data used in this study will be anonymously coded, making it impossible to ascertain the original respondents.

1.10 Possible Limitations
Measurement scales used in the study will be adopted from previous studies carried out in both developed and developing countries. However, the scales will be adapted to suit the context of Uganda.

Some respondents may fear to respond to the questionnaire because of a possible feeling that the much sought information is for prosecution purposes. To alleviate this fear, the researcher shall secure an introduction letter from the University which, among others, will seek to assure respondents that the much sought for information will be used for strictly academic purposes and confidentiality will be ensured.
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