Determinants of Fiscal Decentralization in Emerging and Developing Countries

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Date: September 2012
Abstract

Fiscal decentralization has continued be an inevitable yet dynamic policy measure. So dynamic that to this date and four decades later since it was first introduced, no measure has been agreed on between countries. For this reason, remains important to review fiscal decentralization for similar groups rather than diverse groups to make research more sensible. All the same, and despite its popularity, developing and emerging countries have maintained almost the same level of decentralization over the years. This paper seeks to understand why this may be so by reviewing the determinants of fiscal decentralization through a cross country regression for the year 2008. From this paper, it is emerges that regional diversity, contrary to the decentralization theorem by Oates (1972), actually discourages it in these type of countries. Urban primacy, armed conflict, and higher income also discourage fiscal decentralization. Regarding income, attention is drawn to the fact that it is mainly the nature of income that determines if decentralization will work or not. Openness to trade and country size on the other hand go hand in hand with Krugman’s (1996) hypothesis on primacy as well as Oates’s decentralization theorem. All in all, as international organisations continue to put pressure on particularly developing countries to decentralise, the policy makers in these countries need to consider prevalent economic, social and political conditions that may cause the current status quo to remain.

Keywords: Fiscal decentralization, public expenditure, cross-sectional analysis.
Acknowledgement

To the respective supervisors for their patience and guidance throughout this process as well as friends and family for continued encouragement, I remain eternally grateful.

This paper has been written courtesy of a Swedish Institute scholarship.
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I Introduction

Decentralization has continued to be a global trend in the last four or so decades. It has had a central place in the policy agenda of many economies. The World Bank cited two main forces in the last decade to foster the development agenda, globalization and decentralization. The latter is a process that involves the transfer of administrative as well as fiscal roles from a central government system to lower levels of government (World Bank; 2000).

Decentralization means different things for different countries and it could either be fiscal, political or a mix of both. Broadly speaking, it is defined as “the transfer of authority and responsibility for public functions from the central government to intermediate and local governments or quasi-independent government organizations and/or the private sector- is a complex multifaceted concept”. (World Bank; 2003). In emerging and developing countries (the focus of this thesis), the focus has previously been mainly on political decentralization where decision making is devolved from the national level to the local level. (Bardhan; 2002) However, recently, these governments have shifted their focus to fiscal decentralization (hereafter referred to as “FD”) as a policy tool.

Public expenditure data from the late 1980s and early 1990s reinforce the fact that industrialized countries have traditionally been more decentralized than developing countries. For instance, local government share of total government spending averaged 32% in the industrialized countries in this period versus 15% in the developing countries (Bahl and Linn, 1992). For countries that were under colonial rule, local governments were established by colonial rulers with the purpose of administration and control rather than economic development or with the needs of the local population in mind. This is the framework that post-colonial governments inherited. In addition, development strategies were focused on central planning to take advantage of economies of scale, thus further reducing the relevance of local government (Mawhood, 1987)

The purpose of decentralization has continued to vary between countries, specifically so, between the developed and the developing countries. In developing countries, the decentralization is mainly preceded by political turmoil and is seen as a means to unite a country after the fact. This is evidenced by countries such as South Africa, Uganda (World Bank 2000) and Kenya (post independence and post the 2007 election violence). In promoting national unity, proponents of decentralization aim to reduce the economic and social differences between the various regions in the countries. For this reason, in such countries, there is a very strong linkage between the political economy and fiscal decentralization.

The same variation applies for the success or failure of decentralization. In China for instance, decentralization has been regarded as being one of the major explanations of the country’s industrial growth (Pranab Bardhan; 2002). Other developing countries, specifically those that were previously under colonial rule, decentralization, although introduced post independence, has remained to be policy only on paper, mainly due to the fact that it has been viewed as being a policy that threatened the role of the State in general. In emerging economies especially those in Eastern Europe, some of the key impediments to decentralization have remained to be entrenched socialism as well as macroeconomic instability. Another reason why decentralization has remained unsuccessful thus far has been the fact that the macroeconomic policy has been implemented using a “one-size-fits-all” approach, without taking into account the diversity and complexity between countries.
1.1 Purpose of the study

Decentralization in general has been cited as one of the tools to relieve developing countries out of the “curse” of conflict, instability and to aid economic development (World Bank, 2003). However, despite its proven benefits in developed economies, decentralization in developing and emerging economies has remained rather at the same level over the years with a few exceptions of countries such as Bulgaria, Slovak Republic and Romania. (IMF GFSM; 2011).

The suitability of any policy measure is bordered on the factors affecting that policy. This is because such factors may either act as impediments to or drive the development, implementation and sustainability of the said policy. To test if FD as a policy measure will be suitable therefore, it is important to study factors that may affect it, and where possible, point out concurrent policies that need to be implemented in tandem with decentralization.

The focus of this study therefore is on pre-existing factors political, social or economical that may be affecting the decentralization process. In doing so, this study aims to answer the following questions:

1. Does the existence of urban primacy hinder effective FD?
2. How do regional diversities and FD in developing and emerging economies interact?
3. As economies grow, through increased income per capita, how does this affect FD as a tool of policy?
4. How is the decentralization agenda affected in regions involved in armed conflict?
2 Theoretical Framework

There are certain issues that have to be considered before looking closer at the question at hand. To be able to analyze and interpret the results a theoretical framework must be established, within which outcomes can be deduced. To do this, I review the Musgravian theory of public finance from which the functions of the various levels of government are derived, Oates Decentralization theorem as well as the Tiebout’s theory of decentralization. I then review the suggested determinants and the explanations behind them based on theory as well as previous research.

2.1 Musgravian Theory of Public Finance

The theory of public finance is also viewed as a theory of social /public goods that are in their own nature, non-exclusive and non-rival. It is also known as the Musgrave trilogy of public functions. It is a key theory in decentralization theory since it establishes the roles that are to be played by different levels of State Government.

Musgrave (1959), in developing the theory of public finance, identified the functions of the state in controlling the economy through the budgetary process as being, allocation of resources, redistribution of wealth and income and securing economic stabilisation. Decentralization is viewed as a means to share these three functions amongst different levels of government.

Firstly, the allocation function involves the actual provision of public goods by deciding how much of the available resources will be placed in particular projects. It is through this function that resources are split between private and public goods and an optimal mix of public goods identified. Public goods are goods that are consumed in equal amounts by the population (Oates; 1972). Examples of a public good is defence, health care and education.

In an ideal situation or perfect market, this allocative function should be left to market forces (i.e. supply and demand) through which optimal production of goods and services will be established, but this is not the case. The characteristics of public goods in themselves introduce conflict between market forces and the choice of the optimal mix of public goods identified. Public goods are goods that are consumed in equal amounts by the population (Oates; 1972). Examples of a public good is defence, health care and education.

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but also to allocate such revenue in an equitable manner. Distributive policies are aimed at transferring resources at the disposal of one individual to another individual.

Inequality in distribution of resources in a country stems from various factors as identified by Musgrave (1959): laws of inheritance, social mobility and market structure. It is these inequalities that drive the involvement of the State in an effort to correct these distortions and ensure equitable distribution of income. Some of the policies undertaken by the state include, the use of graduated scales to tax personal income, tax exemption for certain categories of income, and minimum wage legislation.

Thirdly, the stabilisation aims at shielding the economy from the effects of price and employment fluctuations (Musgrave, 1959). The role of the state in this instance is to ensure that shocks to the economy (such as fluctuations in price stability as well as unemployment) remain within tolerable levels for the economy to operate effectively. It is carried out by the central government rather than lower levels of government since cyclical shocks to the economy are national in nature (i.e. occur similarly across regions) and are therefore best dealt with at the national rather than sub-national level. Monetary policies too such as policies touching on price levels, exchange rates as well as GDP are better suited to be dealt with at the national level.

Musgrave (1959) alludes to the fact that this can be achieved through a compensatory system of finance. Compensatory in the sense that when the economy experiences a slump resulting in rising levels of unemployment, the state, through fiscal policy will intervene, for example, by increasing public expenditure causing production to increase and consequently increase the demand for labour as a factor of production, thus reversing the rising level of unemployment. Another method through which unemployment levels can be dealt with by government would be to increase the output of the private sector either by offering tax incentives or reducing tax rates altogether. Another example of compensatory finance occurs where increases in aggregate demand in an economy fuels inflation. This would be the case in instances where expenditure outstrips the level of output, thus pushing prices of goods upwards. With a view to curb increasing prices and therefore inflation, the state may introduce fiscal adjustments such as reducing the level of public expenditure, or encouraging increased output by introducing tax cuts.

### 2.2 Oates Decentralization Theorem

This theory reviews FD purely from an economic efficiency perspective.

Proponents of FD have fallen back on the decentralization theorem which inherently states “in the absence of scale economies and spill-over effects, it is more advantageous from an efficiency perspective, to supply public goods through a decentralized system rather than a centralized system of government.” (Oates 1972). This theorem identifies the conditions under which it is provision of goods are best left to local governments one of which is variation in demand for public goods between consumers.

This theory is based on the following assumptions:

1. The goods being consumed are public goods;
2. The decision as to the basket of public goods to be provided has been made;
3. There are no economies of scale in providing these goods (i.e. no U-shaped average cost curve);
4. The total population in a country is divided into various geographical subsets or jurisdictions;
5. The central government may select agencies to distribute the public goods for efficiency purposes; and;
6. Labour as a factor of production is mobile between regions.

Under this theory also, there is heterogeneity in terms of income and taste (preferences) between various spatial regions. This affects the patterns in which public goods are consumed and for this reason, necessitates the provision of different baskets of goods in different regions. Consumers will therefore be agglomerated in regions where they consume a similar basket of public goods for cost effectiveness purposes and to alleviate costs such as transport costs. To effectively satisfy consumers demand on the other hand, each basket of public goods must be matched with the respective demand by the consumers in a region. This necessitates the collection of information from the respective consumers and relaying the same to the government organ in charge of producing the goods. It is therefore intuitive that the closer the production is to the consumer, the easier it will be to collect information on their needs and wants and therefore, the more effectively and efficiently, their needs will be matched to the supply of public goods. The way for government to attain this proximity to the consumer is by selecting agencies that are closest to the consumer to enable such efficient gathering, dissemination and action on the information collected.

2.3 Review of suggested determinants

2.3.1 FD and Regional Diversity

The allocation function basically aims at satisfying the needs of consumers through the provision of public goods. To achieve this requires the identification of consumer preferences which are not uniform across a country. Consumers on the other hand, do not readily reveal their preferences or choice since public goods by their nature are supposed to be non-exclusive. It is in achieving identification of the differing consumer wants that decentralization is promoted.

To begin with, I explore the issue of consumer choice. In their work, Deacon and Borcherding (1972) cited three necessary assumptions in evaluating factors affecting public choice namely, the rules of aggregating voter preferences, the tastes of choosers and the opportunity costs to choosers of the activities undertaken.

The assumption that consumer wants are not uniform is based on Tiebout (1956) who has argued that the individuals are stratified according to their preferences for the public good and are also uniformly distributed over a territory. From the consumers’ perspective, location and proximity to the preferred goods go hand in hand because the further away one is from their goods of choice; the more expensive it will be for them to consume those goods thus affecting utility. This goes to say that a country is divided into diverse regions made up of households that have approximately similar demand for a certain composition of public goods. This diversity may be in the form of ethnicity, language, religion, or even income. Alesina and Spolaore (1997) have argued that different ethnic groups in different localities have different preferences over the type of public good consume.

Taking such diversity into account, it can be seen that provision of such public goods through a centralized form of government although cost effective, can only be carried out homogeneously without taking into account the different preferences between regions, re-
resulting in social and economic welfare losses. For this reason, sub national governments which are viewed to be not only closer to such consumers, but also have access to local information, can better identify the needs (in terms of the mix as well as level of requirements) of the local users of these public goods. With this information, these sub-national governments are then best placed to adjust their budgets to suit local preferences of the voting consumer. Another use of the information collected would be to tax previously untaxed sectors of the region’s economy. This will result efficiency through decentralization (Oates 1972) and improved tax revenues at the national level. For this reason, regional diversity in a country builds a strong case for decentralization as illustrated in figure 1 below:

Figure 1: Regional Diversity and Efficiency gains through decentralization

### 2.3.2 FD and Urban Primacy

The 21st century is viewed as being the “Century of the City” (UN Habitat 2009) mainly due to the fact that it expected that by the middle of the century, half of the world’s population will be living in urban areas and that as regional integration makes erases the borders between countries, then the focus shifts from countries in general to cities. In addition, generally, countries with the highest per capita income tend to be more urbanized, thus, signifying that importance if cities in general economic development.

In terms of urban structure, primacy means that “size of the first city is disproportionately large in comparison to the size of the second city” Mutlu (1989). Size here may be in terms of economic activity, administrative or even political activity of a country or also, the population. One of the distinctions in terms of urban structure between developing and transitional economies and the developed economies is the presence of such primacy in the former (Deichman, Somik, Stephen, Venables; 2008). To illustrate how urban primacy influences decentralization this paper reviews agglomeration of economic activity in terms of transport costs, economies of scale and factor mobility.

Agglomeration economies are generally the gains made by firms when they are located close to other similar firms. These include easier sourcing of factor inputs, benefits from spillover effects, and proximity to the market. (Krugman; 1996).

Diseconomies on the other hand according to Krugman the trade costs associated with agglomeration. In larger cities especially, negative externalities arise when the city becomes too developed (Mutlu; 1989). The limiting factors of urban primacy are therefore negative externalities of agglomeration: namely, higher costs of living, congestion, and pollution. When rental prices and wage changes reflect the rural-urban migration indicative of early urban primate systems, there are significant increases in the cost of housing, food, public utilities, and commuting (Henderson, 2000). The higher cost of living translates to higher poverty and crime rates (Alonso-Villar, 2011). The costs of these negative externalities, into which public investment pours to contain congestion and pollution, affects the rest of the urban system and leads to a decreased quality of life in non-primate cities as well as rural areas (Henderson, 2002).
However, Deichman et al (2008) show that agglomeration economies outweigh any dis-economies associated with urban concentration (e.g. congestion, pollution, high land rents, and competition), causing firms and labour to continually choose to remain in the metropolis or large cities. Additionally, supply-side bottlenecks in congested cities open production opportunities in the periphery. As development occurs, large cities specialize in services, non-standardized manufacturing, and research and development. Medium cities form in the peripheries to handle standardized manufacturing (Henderson, 2002). Theoretically, in the later stages of development, regional convergence occurs and urban systems decentralize hence promoting decentralization but initially, the existence of these cities will clearly promote centralization since all economic activity and more often political as well as administrative activity is located in the large metropolis.

There are some broad explanations explaining the urban primacy in developing economies. It is suggested to review then see how each of this would affect FD.

Primate cities initially started as export centres from their hinterlands, resulting in high investment in infrastructure in this centres and causing them to be the sole revenue base for the while economy. Letelier (2003) argues that this continued investment in urban infrastructure will promote fiscal centralization. Also, the system of government that created during the colonial era where administrative and fiscal authority was mainly concentrated in one area has remained persistent resulting in a trend of urban primacy among developing countries for other additional reasons; they do not face competition from other regions. The other reason is governance continued to be from the centre with a view to promote national unity in already fractionalized countries, making FD is viewed as being a trade off against national unity. (Balchin, Isaac, Chen; 2000).

According to Krugman (1996), existence of closed markets (characterized by import-substitution policies) in countries, promote the dominance of huge cities for various reasons among them, urbanization and agglomeration economies.

Taking these three factors into consideration, then it can be said that as long as these three continue to exist, i.e. capitals being located in the large metropolis, centralization being viewed as promoting national unity, economies remain closed and agglomeration advantages outweigh the costs; then FD is reduced.

### 2.3.3 FD and Income

The direction of the relationship between these two variables is not conclusively defined in existing studies. Wheare (1946) and Oates (1997) have taken view that FD is a luxury “good” causing its demand to increase as income per capita increases. The view of FD as a luxury good by these authors stems from the fact that high income countries are more decentralized compared to countries at lower tiers of income. (Cited in Panizza (1999)). Based on the idea that FD is a normal good, and therefore beneficial for development, Panizza (1999) has concluded that there is a negative correlation between income per capita and fiscal centralization implying that FD increases as income per capita increases.

Another approach has been to review the source of the major contributor to government revenues, taking into account the Leviathan hypothesis where governments are viewed as wanting to maximise revenue. Desai (2003) has shown that if the government revenue is dependent on natural resources, then an increase in such income will have no impact on FD. This is because, growth of income in such an economy does not result from an ex-
panded tax base at the sub-national level, thus reducing the relevance the preferences of consumers at the sub-national level. Examples of economies based on natural resources include South Africa, Algeria, Angola, Botswana, and Russia among others. In this paper, the focus is on developing and emerging economies most of which are characterised by the kind of revenue identified by Desai et al. Freinkman, Plekhanov (2009) have shown by testing the “flypaper effect” that when a central government’s source of revenues come from grants and aids, then such government is likely to spend such income on itself rather than pass it on to sub-national governments. The “flypaper effect” generally relates to unearned income and the fact that there is a tendency to spend faster and in an unplanned manner, income that is not earned than would be the case for earned income.

2.3.4 FD and Armed Conflict

Countries that are experiencing armed conflict are expected to be more centralized. Conflict, whether internal or external, results in diversion of funds from social and other expenditure to defence expenditure which is traditionally incurred by the centre, thus promoting centralization.

In the case of internal conflict, Bahl and Linn (1992) note that there is a propensity to give less discretionary powers to local governments in countries where there is a continuing threat of social upheaval. Peacock and Wiseman (1961) illustrate that social disturbances provide an atmosphere in which people accept a larger government, yet local authorities do not share in this increased government spending. Therefore, one may expect countries that are in a perpetual state of uncertainty about war or internal conflict (perhaps driven by high levels of ethnic fractionalisation, e.g. in what was Yugoslavia) would, ceteris paribus, tend to be more centralised.

2.3.5 FD and Country size

Referring back to the Oate’s decentralization theorem cited above, the intuitive implication is that larger countries in terms of geographical size will be more distinctly diverse in terms of preferences of consumers. Taking this heterogeneity and country size into account, it can be said that logistically difficult to administer from the centre; making decentralization is more feasible in a larger country. In studying FD therefore, country size needs to be taken into account. In addition, other scholars have conducted studies on the impact of country size and heterogeneity with Alesina and Spolaore (1997) concluding, “Cultural and ethnic heterogeneity increase with country size”. Thießen (2000), in his studies has shown that unlike large countries, smaller sized countries on the other hand are characterised by more homogenous preferences, building a case for centralization. Pannizza’s (1999) model of fiscal centralization also arrives at the same conclusion by evaluation population density and country size. He argues that in a large and/or sparsely populated country, the distance between the median voter and the centre increase, resulting in the reduction in demand for public goods that provided centrally and therefore facilitating decentralization.

This line of thought is also not without its critics especially where country size is measured in terms of population density. Prud’homme (1995) argues that FD is more effective in a densely populated country where sub-national governments are therefore relatively large making it less feasible for provision of public goods from the centre. These large sub-national governments also enable the effective utilisation of powers conferred to them.
2.3.6 FD and Openness to trade

The tax revenues (import and export tariffs) in low-income trade oriented economies are concentrated at the central government level especially where the source of income is natural resources (Letelier 2003). This point has been emphasized by Krugman in his hypothesis of the existence of a primate city where one of the solutions that has been suggested to reduce the dominance of metropolitan cities, is that of trade liberalization so as to open up such economies to trade (Krugman 1996).

Having this in mind then it would be expected that the more open an economy is to international trade, the more likely FD will work, since the tax base will already be distributed across several regions as opposed to one.
3 Data and Variables

This chapter focuses on the identified determinants and the impact that they have on FD in developing and emerging economies. The sample under investigation consists of 35 developing and emerging countries (based on the IMF country classification). In the last two decades, decentralization as a fiscal policy has become more prominent in these countries according to a survey carried out in by the World Bank in 2003, and this is the basis on which developing and emerging economies were selected. The country sample and the year of analysis used in this paper has been selected based on availability of data on FD (the variable of interest) for developing and emerging economies.

3.1 Sources and Hypothesis

FD data is drawn from the IMF 2011 GFS database. With the exception of ethnic fractionalization, data on all the other independent variables was sourced from World Bank Indicators. The ethnic fractionalization index was picked from the Quality of Government dataset provided by The Quality of Government Institute of the University of Gothenburg. The reliability of the latter source can be questioned but reliance has been placed on this database due to time restrictions and the fact that the dataset is updated on an annual basis to take into account any changes in terms of formulation or data.

The choice of the variables was mainly selected through previous research on decentralization and where applicable, theory.

For ease of reference, the table below summarises the definition of each of the variables as well as the parameters used in the analysis. Furthermore, it is expected that the variables take on the sign that is in line with the theoretical background as shown in the table below:

Table 1: Definition of Variables and parameters

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter</th>
<th>Definition</th>
<th>Measure</th>
<th>Expected effect on FD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnic Fractionalization</td>
<td>FRACT</td>
<td>The probability that two randomly selected people within a population in a country belong to different ethnic or linguistic groups</td>
<td>The Ethno-Linguistic Fractionalisation Index</td>
<td>+</td>
</tr>
<tr>
<td>Urban Primacy</td>
<td>CONC</td>
<td>The percentage of the urban population that resides in the largest city (i.e. Population in largest city is the percentage of a population in the largest metropolitan area)</td>
<td>Population in the largest metropolitan area as a percentage of the total urban population</td>
<td>-</td>
</tr>
</tbody>
</table>
country's urban population living in that country's largest metropolitan area.)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td>GDPCAP</td>
<td>Real GDP per capita measured in natural logarithms</td>
</tr>
<tr>
<td>Conflict</td>
<td>MILTEXP</td>
<td>The percentage of the economy's GDP that is attributed to military expenditure</td>
</tr>
<tr>
<td>Trade Openness</td>
<td>OPEN</td>
<td>Total trade (exports and imports) as a percentage of the real GDP</td>
</tr>
<tr>
<td>Country Size</td>
<td>POP</td>
<td>Total population of a country's inhabitants measured in natural logarithms</td>
</tr>
</tbody>
</table>

### 3.2 Measurement of the Variables

#### 3.2.1 FD

Before moving on to the model and the actual analysis and regarding FD, it is worthwhile to note that there is no theoretical consensus on the measurement of this variable and neither is there an agreement on the threshold level of FD.

The IMF has however identified four measures through which the degree FD can be studied namely; revenue, tax effort, expenditure and compensation of employees. (GFMS; 2011) Different researchers use either different methods and attempt to justify their reasons for the method selected although for most; the justification of the mode of measurement has depended heavily on the availability of data.

For instance, Davoodi and Zhou (1998) have used the ratio of expenditure by sub-national governments relative to the total government to measure FD. This makes sense especially for partially decentralized economies where resources are transferred from the central government to local government. The central government in such a scenario, accounts for
most of the revenue collection and through a budgetary process and a predefined transfer system, allocates funds to respective local governments for utilization in specific sectors.

Differing from this measure are Garry and Philip (1998) who have added the split of revenue between national and sub-national governments to Davoodi and Zhou’s (1998) method of expenditure allocation. The argument behind this is that sub-national governments do raise some amount of revenue as well in the form of business licenses, road levies, among others. Using this measure especially for developing countries would require manipulation of the data on expenditure since a review shows that most of this countries do not report local government expenditure that is self financed (i.e. local government expenditure financed by revenues raised at the local government level) (World bank, 2003)

Thornton (2007) has argued that the measures used by the above authors, is not a sufficient measure of FD since it does not take into account the level of autonomy a sub-national government has. Using OECD countries, he has analyzed FD from the perspective of countries whose sub-national governments have the authority to determine tax rates as well as the tax base.

Taking these factors into consideration as well as the availability of data, the measure that will be applied in this paper is a modified version of the one used by Davoodi and Zhou (1998); given the fact that the level of decentralization in developing and emerging economies is to a large extent restricted to expenditure decentralization. Reference here is made to modified since Davoodi’s (1998) measure splits governments into three levels-Federal, State and Local governments-whereas for most of the country samples selected, there are two levels of government-State and Local Government. The formula used is as follows:

\[
FDEXP = \frac{\text{Transfers from the Central Government to other levels of Government}}{\text{Total Government Expenditure}}
\]

(Eq. 1)

### 3.2.2 Independent variables

Coming down to the determinants of FD, it is important to note as Panizza (1999) put it, the main factors determining decentralization are largely unobservable or immeasurable. However, since theory remains just that, theory, unless supported by statistics of sorts, all the determinants identified need to be measured-even through the use of proxies. Taking into account measures used by economic researchers, the backward elimination technique is applied to the variables to select the ones that result in a good fit of the regression model.

In terms of regional diversity, ethno-linguistic fractionalization has been widely used. This is based on the findings of Easterly and Levine (1997) studies that have shown that the positive effect of ethnic diversity on FD. Brock and Durlauf (2001), and Doppelhofer, Miller, and Sala-i-Martin (2000), in their empirical studies on growth, have used this as a “standard” measure of “cross-national” differences (cited in Alesina, Devleeschauwer, Easterly, Kurlat, and Wacziarg; 2003). The word “standard” here is used due to the fact that preferences are hardly measureable.

Although there is no general agreement in economic literature on the definition of country size, different researchers have used different measures of country size. The three that seem to recur the most are population, land area and population density. (Downes 1988). Population as a measure for size has been used extensively amongst the three measures by
authors such as Khalaf (1971). One of the reasons population is widely used is due to ease of accessibility of data.

In this paper, primacy is measured as the ratio of the population of the largest city to that of the total urban population, where cities are defined as urban agglomerations.
4 Empirical Analysis

4.1 Methodology

To analyse the determinants of FD and its impact on economic growth, pure cross country regressions are run. Ideally, it would be advisable to run panel data analysis for such a study since it combines the time and country dimension a combination of which “increases the degrees of freedom and reduces collinearity among independent variables” (Hsiao, 2003: 3). However, panel data analysis is more appropriate when the number of observations is relatively large, which is not the case in this paper. (Thießen, 2003)

For this reason, the following regression model is tested:

\[
FD_{EXP} = \alpha + \beta_1 LN GDPCAP + \beta_2 CONC + \beta_3 POP + \beta_4 OPEN + \beta_5 MILTEXP + \beta_6 FRACT + e_i
\]

(Eq. 2)

where:

\( \alpha \): intercept

\( FDEXP \): the level of FD

\( GDPCAP \): the real GDP per capita

\( CONC \): Population in the largest city as a percentage of total urban population

\( POP \): total country population

\( OPEN \): total trade as a percentage to GDP

\( MILTEXP \): Military expenditure as a percentage of GDP

\( FRACT \): Ethno-Linguistic Fractionalisation Index

\( e_i \): error term

In the above equation, the log specification for real GDP as well as population is used to improve the fit of the regression model.

4.2 Descriptive Statistics

These are summarised in the table below:

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Median</th>
<th>Maximum</th>
<th>Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRACT</td>
<td>0.48</td>
<td>0.24</td>
<td>0.41</td>
<td>0.93</td>
<td>0</td>
</tr>
<tr>
<td>CONC</td>
<td>28.33</td>
<td>12.50</td>
<td>27.50</td>
<td>48.00</td>
<td>0</td>
</tr>
<tr>
<td>LN Real_GDP</td>
<td>8.8225</td>
<td>1.03</td>
<td>8.99</td>
<td>10.35</td>
<td>6.78</td>
</tr>
<tr>
<td>MILTEXP</td>
<td>1.6148</td>
<td>0.79</td>
<td>1.58</td>
<td>3.29</td>
<td>0</td>
</tr>
</tbody>
</table>
Of the sample selected, the most decentralised country is China with an FD index of 0.30 whilst the least decentralised is El Salvador with an FD index of 0.0004. A review of the data also reveals that the level of FD in these countries is quite low with since on average the FD index is 0.09. The decentralization index varies from zero to one with zero representing countries that are not at all decentralised and one representing full decentralization. This goes to show that most of these economies are centralised and form the basis for policy focus in this area especially when pitted against developed countries that are more decentralised.

As described in table 2 above, ethnic fractionalisation refers to the probability that two randomly selected people in a country’s population belong to different ethnic or linguistic groups. The index ranges from 0-100%, with 0 implying a homogenous population in terms of ethnicity and/or language and 100% representing a purely heterogeneous population. The table above shows that the average fractionalisation is 48%. Uganda is the most fractionalised country in this sample at a level of 93%.

The concentration of the urban population in one metropolis is an indication of urban primacy. On average, the level of primacy in this sample is 28% with countries such as Jamaica, Angola, Cape Verde, Cote d’Ivoire, Moldova, Latvia and Costa Rica having more than 40% of the urban population living in the largest cities.

A review of the descriptive statistics of income shows that except for China, it is not necessarily the most decentralised country that has the highest level of real GDP in this sample. For instance, Cyprus has a real GDP per capita $31,816 which is higher than the average $10,239 but at the same time is centralised since the FD index is 0.01 which is below the average level of decentralization of 0.09. This is in line with the reasoning in the theoretical section, where the source of income also affects the nature of decentralization in a country.

Before proceeding to perform empirical analysis that give more succinct views, it is always advised to get a visual impression of the data and see if the same supports the hypothesis proposed in section 2 above. In this section therefore, the visual results are presented as well as a summary of the expected sign of the relationship between FD and its respective determinants. A feature in all the scatter plots below is the fact that China is a recurring outlier. Two reasons are suggested, one, because it has a higher degree of decentralization from the rest of the sample and, two, inasmuch as China is classified as a developing country and would appear to be so, in reviewing its GDP per capita, other factors such as its size and position in the global economy seem to make a different suggestion. For this reason and its consistency as being an outlier, it is excluded from the final regression analysis carried out in below:
According to the theoretical review carried out in section 2, there is expected to be a positive relationship between regional diversity (proxied by ethno-linguistic fractionalization) and the level of FD. However, this is not the case in the visual plot below. This begs the question whether the regional diversity aspect of FD is indeed relevant in developing and emerging economies. This has been explored further later in this paper.

Figure 3: FD vs. Urban Primacy

This graph, as can be seen below is also consistent with theory reviewed in section 2 (i.e. the higher the level of urban primacy, the less likely a country is to be decentralized.
Figure 4: FD vs. Real GDP

Figure 4 above alludes to that there is a negative relationship between income per capita and the level of FD. This goes hand in hand with the views of Panizza (1999), Desai et al (2003), Wheare (1946) and Oates (1997).

Figure 5: Fiscal Decentralization vs. Military Expenditure

The graph above implies that there is a weak negative relationship between armed conflict and FD. The negative relationship is in line with the hypothesis and the theory in section 2.

Figure 6: Fiscal Decentralization vs. Openness to Trade

From figure 6 below, it is seen that there is a positive (albeit weak) relationship between the more open a country is to trade and FD which is also in line with the theory in Chapter 2 of this paper.
Correlation Analysis

The purpose of this test is to see whether and to what extent any of the independent variables measure the same thing.

The reason for this is that the nature of the selected determinants exposes the model to multicollinearity problems. Table 4 below shows the correlation matrix from which it can be deduced—going by the Pearson’s correlation test and Leahy’s (2000) rule of thumb of 0.80—none of the independent variables are correlated.

Table 4: Correlation Matrix

<table>
<thead>
<tr>
<th></th>
<th>FRACT</th>
<th>CONC</th>
<th>LNGDPCA</th>
<th>MILTEXP</th>
<th>Openness</th>
<th>POP</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRACT</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONC</td>
<td>0.162</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LNGDPCA</td>
<td>-0.051</td>
<td>-0.161</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MILTEXP</td>
<td>0.031</td>
<td>-0.196</td>
<td>-0.099</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Openness</td>
<td>-0.253</td>
<td>0.155</td>
<td>0.046</td>
<td>-0.091</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>POP</td>
<td>0.076</td>
<td>-0.061</td>
<td>-0.039</td>
<td>0.040</td>
<td>-0.045</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 4: Correlation Matrix

*Correlation is significant at the 0.05 level (2-tailed).

Results and Discussion

Previous research in the determinants of interest (income, regional diversity and urban primacy) through cross country panel data analysis has shown that a clear negative relationship when it comes to urban concentration, positive when it comes to diversity but unclear
(either positive or negative) when it comes to the level of income. Pure cross country studies seldom focus on urban primacy as a determinant but rather, urbanisation in general.

For the purpose of this research, a simple cross country regression model is used to analyse these relationships as explained in 5.1 above with the results as follows:

Table 5: Pure Cross Sectional Analysis: Determinants of FD

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficients</th>
<th>Std. Error</th>
<th>t-statistic</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>0.068</td>
<td>0.344</td>
<td>0.1960</td>
<td>0.0000</td>
</tr>
<tr>
<td>FRACT</td>
<td>-0.096</td>
<td>0.0480</td>
<td>-2.0130</td>
<td>0.0560</td>
</tr>
<tr>
<td>CONC</td>
<td>-0.004</td>
<td>0.0010</td>
<td>-4.3380</td>
<td>0.0000</td>
</tr>
<tr>
<td>LN_GDPCAP</td>
<td>-0.052</td>
<td>0.0130</td>
<td>-4.1300</td>
<td>0.0000</td>
</tr>
<tr>
<td>MILTEXP</td>
<td>-0.025</td>
<td>0.0120</td>
<td>-2.0400</td>
<td>0.0530</td>
</tr>
<tr>
<td>OPEN</td>
<td>0.001</td>
<td>0.0000</td>
<td>4.1540</td>
<td>0.0000</td>
</tr>
<tr>
<td>LN POP</td>
<td>0.022</td>
<td>0.0000</td>
<td>1.3370</td>
<td>0.1940</td>
</tr>
</tbody>
</table>

Number of observations 34
R squared 0.6250
Adjusted R squared 0.5220
F-statistic 6.1030
Probability F statistics 0.0000
Excluded Country China

The regression model has an R-squared of 62.5% and is significant (with a p-value of 0.0000), suggesting that the model is a good fit and that the determinants identified are good explanatory variables for FD. With the exception of country size, all the variables remain significant at the 10% level of significance.

Going by Oate’s decentralization theorem, it is expected that the more diverse and country is, the more heterogeneous the preferences by consumers will be, therefore favouring FD. (Oates, 1972). However, the results of this regression tell a different story since the negative coefficient (p-value 0.056,) show that the more diverse a region is, the less likely it is to be decentralised. Two propositions are made as to why this outcome differs from the expectation:

First we review the assumption of consumer mobility (i.e. voting on their feet) made by Tiebout (1956) in his model of consumer preferences which formed a basis for the decentralization theorem developed by Oates (1972). Developing economies are largely agricultural based economies as mentioned in section 2. Agricultural activity is characterised by relatively immobile factors of production namely land and family labour. This therefore hinders the free movement of consumers from one region to another in search of an opti-
mal mix where their preferences are met since their source of income is tied to certain locations. An example from the sample of selected countries is Benin where the agricultural sector accounts for 32% of GDP and employs 70% of the country’s workforce (World bank, 2011). At the same time, the country has a fractionalisation index of 79% (The Quality of Data Institute, 2011), meaning for every two people in the population of 9.6 million (World Bank, 2011), there is a 79% chance that they are from different ethnic or linguistic backgrounds. From this example, it can be demonstrated that inasmuch as there exists regional diversity in such countries, such diversity does not necessary imply that people in each region are grouped according to their preferences due to the fact that they are generally immobile.

Secondly, researchers have widely used fractionalization as a measure for heterogeneity in preferences. This fractionalization is dependent on religion, culture and language. Whereas these three categories epitomise diversity especially in developing countries, it is this fractionalization that has promoted centralization policy in such government with a view to promote national unity and reduce political instability arising due to ethnic divisions.

As hypothesised, the level of urban concentration is negatively related to FD and is highly significant (p-value 0.0000), meaning that the more concentrated the urban population in tandem with agglomeration of industries and other economic activity, FD becomes a disincentive, especially so, if any externalities associated with urban concentration can be outweighed by agglomeration economies. To summarize, when the political and economic activity are located in one place, then this reduces the likelihood for this balance to be offset through expenditure decentralization.

Population size in this regression is insignificant both at the 5% and 10% level of significance with a probability of 19.4%, implying that the size of the country is not a relevant determinant of FD. This goes against one of the conclusion of the decentralization theorem where Oates (1972) stated that decentralization was more likely pronounced in larger countries than in smaller countries. One of the explanations will refer as back to the nature of economic activity that characterises developing countries (agricultural activity), making it difficult for consumers of public wants to locate themselves in accordance to their preferences. This means that the population in such countries, although large, is distributed in terms of livelihood rather than preferences for public goods meaning therefore that country size via population is not necessarily an indicator of regional diversity.

Trade-oriented economies may have a tendency to be more fiscally centralised as they concentrate taxes in the hands of central government through the collection of import and export tariffs, and other related duties. Letelier (2005) argues that this may more relevant for developing countries for whom a unique source of national resources often stands as the main source of foreign currency and tax revenues.
5 Conclusion and Suggestion for Further Studies

The focus of this paper has been on the determinants of FD, with consideration been given to the fact that for economies in emerging and developing economies, local or sub-national governments are not autonomous but instead rely on transfers from the central government to finance their activities at the local level.

From this paper, it can be concluded therefore that pre-existing urban primacy does act as a deterrent to FD. The same goes for continued conflict in a country as well as increasing regional diversity. In addition, and contrary to previous studies, when it comes to FD, country size is not relevant.

These determinants go to show that if FD as policy is pursued on its own without studying its determinants and executing policy measures around these determinants in a manner that induces FD, the decentralization policy is likely to fail in the long-run.

One of the major impediments of this study has been the availability of data, in particular consistent time series data. It would be interesting to study the impact FD on resource distribution between urban and rural areas as countries become more urbanised.
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## Appendix

### Selected Countries

<table>
<thead>
<tr>
<th>Algeria</th>
<th>Cyprus</th>
<th>Moldova</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angola</td>
<td>El Salvador</td>
<td>Philippines</td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>Ethiopia</td>
<td>Poland</td>
</tr>
<tr>
<td>Belarus</td>
<td>India</td>
<td>Slovak Republic</td>
</tr>
<tr>
<td>Benin</td>
<td>Jamaica</td>
<td>Slovenia</td>
</tr>
<tr>
<td>Bolivia</td>
<td>Kazakhstan</td>
<td>South Africa</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>Kenya</td>
<td>Thailand</td>
</tr>
<tr>
<td>Cape Verde</td>
<td>Latvia</td>
<td>Trinidad and Tobago</td>
</tr>
<tr>
<td>China</td>
<td>Lesotho</td>
<td>Uganda</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>Lithuania</td>
<td>Ukraine</td>
</tr>
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<td>Cote d'Ivoire</td>
<td>Malaysia</td>
<td>Zambia</td>
</tr>
<tr>
<td>Croatia</td>
<td>Mauritius</td>
<td></td>
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