

# FACTORS AFFECTING FINANCIAL CONDITION OF LOCAL GOVERNMENT IN INDONESIA

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## Abstract

*Fiscal decentralization causes variation in local governments (LGs) financial conditions. Such variation creates need for their stakeholders to know what factors affecting the variation. Therefore, the objective of this study is to determine factors affecting LGs financial conditions. The theory used to achieve the objective is supply and demand theory. This study utilises quantitative research method. There are seven factors examined as independent variables: population, population density, age profile of the community, wealth of the community, revenue-base of a LG, financial efficiency, and cost of services and goods provided by LG. Based on the multiple regression model, the results show that four factors (financial efficiency, cost of services and goods, population, and revenue-base) significantly influence the financial condition of LG, whereas other three factors (population density, age profile of community, and wealth of community) are not.*

*Findings of this study will contribute benefits to the stakeholders of LG. Based on findings, the central government, LG executives and legislators could utilise the evidence to make effective policy pertaining to the financial conditions of LG. As a result, the quality of decision-making regarding LG financial management would be improved in the future. For Indonesian scholars, this study will represent the first attempt to assess the financial condition of LG in Indonesia.*

**Keyword:** local government, financial condition, law of supply and demand, short-term solvency, long-term solvency, budgetary solvency, service-level solvency, financial flexibility, financial independence

**JEL Classifications:** H70; H71

## 1. INTRODUCTION

Indonesia is a unitary state which implements a decentralized governance system by granting autonomy to local governments. Local government (LG) autonomy is the delegation of all authorities and submission all of the central government's affairs, except the affairs of foreign policy, defence and security, judicial, monetary and national fiscal, and religion, to LG within the framework of democracy and national development by involving local people's aspirations and participation (Local Government Amendment Act, 2004). Thus, the development in a region will be based on its people's perceptions both economically and politically.

One of LG authorities is to manage their own finances, which is called fiscal decentralisation. Fiscal decentralisation is a process of distribution of fund from the higher levels of government to the lower levels of government to support the delegation of authority and submission of some of the higher level government's affairs to the lower level governments (Fiscal Balance between Central and Local Government Act, 2004). Fiscal decentralization is a logical consequence of the implementation of regional autonomy with respect to the concept of money follows functions, which means that the transfer or delegation of central government authorities must be accompanied by the allocation of fund needed to exercise these powers. Fiscal Balance between Central and Local Government Act (2004) authorises LGs to obtain financial resources in the form of assurance from the central government (i.e. decentralisation fund) in accordance with the affairs of the central government handed over to LGs, collect and utilize taxes and levies, getting to the results of national resources in their area, and managing regional assets and obtain sources of legitimate income and sources of financing.

In the framework of LG autonomy, each LG is granted rights to design their own policies to achieve national objectives as long as congruence with the central government's strategic plan. The central government only provides principles of managing local finance to LG rather than detailed rules it provided previously. As a result, each LG has its own programs and activities based on its people's perceptions both economically and politically. The implementation of those programs and activities is financed through LG budget. Because each LG has different programs and activities, so it will have different budget allocation. As a result, the financial condition of each LG would vary. For example, there were 124 out of 491 of LGs in Indonesia experiencing financial problems paying their employee's salaries in the fiscal year 2011 (*Harian Surya*, 2 August 2011, p.1). In the Central Java Province, 11 out of 35 LGs experienced such problems (*Harian Kedaulatan Rakyat*, 16 June 2011, p.1). Such variation creates need for LG stakeholders to know what factors determine the variation in the financial condition of LG.

There is little empirical evidence about factors affecting the financial condition of LG (Jones and Walker, 2007, Dennis, 2004) including in Indonesia. Unlike the business sector in which financial assessments of firms are clearly defined, research assessing the financial conditions of LG is relatively new because such research just started in the 1980s (Kloha et al., 2005a). This can be contrasted to the business sector where such research commenced 20 years earlier. In the business sector, Beaver (1966) and Altman (1968) established a seminal model to assess the financial conditions of a firm. This situation has created difficulties for LG executives and legislators in making effective policy responses whenever the financial conditions of LG worsen. In addition, among the limited attempts to explain the LG financial condition, unfortunately, prior research do not indicate what theory they used to explain the variation of LG financial condition (see Casal and Gomez, 2011; Carmeli and Cohen, 2001; Jones and Walker, 2007; Honadle et al., 2004; Zafra-Gomez et al., 2009). Rubinfel (2000) explains that causation cannot be obtained solely by analysing data. A researcher must conclude that existence of cause and effect based on a theory that explains the causal relationship between the two factors under study. Moreover, when a proper theory has been recognized, a cause and effect relationship cannot be derived directly because researchers also have to seek empirical evidence proofing that there is a cause and effect relationship (Rubinfeld, 2000).

Based on the research problem stated above, this study raises the following issue: what factors affect the financial condition of LG? The theory used to answer the research questions is demand and supply theory. As applied to this study, the theory hold that it is expected that the independent variables (population; age profile; population density; wealth of community; financial efficiency; costs of production of services and goods; and revenue-base) influence or explain the dependent variable (the financial condition of LG).

This paper is divided into seven parts, which are introduction, literature review, research methods, findings, discussion, conclusion and suggestion for future studies.

## **2. LITERATURE REVIEW**

### **2.1. Definition of Local Government Financial Condition**

Various definitions of LG financial condition have been developed by researchers and institutions (see Kloha et al., 2005a, Kloha et al., 2005b, Jones and Walker, 2007, Hendrick, 2004, CICA, 1997, Groves et al., 1981, Berne and Schramm, 1986, Nollenberger et al., 2003, Kamnikar et al., 2006, Wang et al., 2007, Rivenbark et al., 2009, Rivenbark et al., 2010, Rivenbark and Roenigk, 2011). This study defines the financial condition of LG as the financial ability of LG to fulfil its obligations (short-term obligations, long-term obligations, operational obligations, and obligations to provide

services to the public), to anticipate the unexpected events, and to execute financial rights efficiently and effectively. Detail explanation of how such definition is conceptualised is explained in Ritonga et al. (2012b).

Based on the definition stated above, there are six dimensions forming the financial condition of LG (Ritonga et al., 2012a; 2012b). The dimensions are the ability to meet short-term obligations, hereafter called short-term solvency; the ability to meet operational obligations, hereafter called budgetary solvency; the ability to meet long-term obligations, hereafter called long-term solvency; the ability to overcome unexpected events in the future, hereafter called financial flexibility; the ability to execute financial rights in an effective and efficient, hereafter called financial independence; and the ability to provide services to the community, hereafter called service-level solvency.

## **2.2. Factors Affecting Financial Condition of Local Government**

Researchers, although not many, have attempted to explain factors affecting the financial condition of LG. Nevertheless, there is little consensus as to which model is better (Kloha et al., 2005a). Berne and Schramm (1986) argue that the major determinants of the financial condition of LG are (1) community tastes and needs (2) the local conditions affecting production and distribution of public goods and services (3) the costs of labour, capital, and other productive resources (4) the wealth of the community (5) the political and governmental structure in the locality and surrounding area (6) federal and state policies affecting local resources, constraints, and responsibilities, and (7) government financial policies and practices.

Ladd (1992) reports a U-shaped relationship between local government expenditures and population density. The author finds that, except in sparsely populated areas, higher density tends to increase local government expenditure. Furthermore, the author's study shows that population growth deteriorates local government financial condition in the form of lower service levels.

Based on his survey in 62 cities in the United States, Clark (1994) argues that there are several factors that cause financial strain. These factors are: population and economic base; political leadership; unions; ethnic groups and disadvantage; and grant legal structure. However, the city leaders of New York argued that they experienced financial strain because of the loss of jobs and population (Clark, 1994).

Nollenberger, et al. (2003) argue that there are three factors affecting the financial condition of LG, namely environmental factors, organizational factors, and financial factors. Environmental factors consist of community needs and resources, intergovernmental constraints, disaster risk, political culture, and external economic conditions. Organisational factors composed of the response of management and legislative policy. Financial factors consist of revenues, expenditures, operating position, debt structure, unfunded liabilities, and the condition of capital plant. They argue that if the demand created by environmental factors is greater than the sources of fund it created, and if the organisation cannot balance the demand and sources of funding, the financial factors will show signs of cash, budgetary, or long-run insolvency.

Honadle et al. (2004) argue that there are a myriad of factors influencing local government financial health. They provide selected examples of the kinds of factors affecting financial health. These factors are: the frequency and severity of occurrence of natural disasters in a local government area; condition of the national economy; composition of the local economic base; tax bases of a local government; applicable tax rates in a local government; population changes; labour costs; pressure

from the voting public for public services; and what to finance and how to finance projects and programs.

According to Rubin's 1982 and Pammer's 1990 studies (Kloha 2005a, 2005b), LG distress is caused by four factors, namely population and job market shifts, governmental growth, interest group demands, and poor management. Population and job market shifts is a major cause of fiscal distress. Fiscal distress may occur due to a significant decrease in population and the loss of jobs caused by migration of residents to suburban areas. These conditions resulted in the displacement and the erosion of the LG revenue-base. Furthermore, they explain that governmental growth is a situation when LG spending increases relative faster than the inflation rate and population growth, whereas interest group demands is a condition where overspending occurs when executives are vulnerable to a particular interest group. This vulnerability occurs because the executive does not have enough power to be re-elected. As a result, the executive will overspend to gain support from special interest groups. In addition, poor management includes the application of inadequate accounting methods, poor budgeting practices, or inadequate management.

Dennis (2004) examines the relationship between state governments' financial condition and state governments' financial management capacity in the United States. Using multiple regression analysis, the author found that there was no significant relationship between state governments' financial condition and their financial capacity management.

Wang, et al. (2007) state that financial conditions associated with socioeconomic variables, such as population, personal income per capita, gross state product per capita, population growth rate, percentage change in employment, percentage change in personal income, economic momentum index, and momentum rank change. In general, strong economic conditions will strengthen the LG financial condition. As a result of the strong financial condition of LG, the financial capability of LG will be strengthened, which is reflected in the increased amount of the LG revenue-base. With the increased capacity of LG finance, it will further improve the socioeconomic condition of the community. Supporting Wang et al.'s (2007) work, Zafra-Gómez et al. (2009) in their study assume that the socioeconomic factors affect financial condition. Their results showed that socioeconomic factors affecting financial condition are economic level of the region, available income and rate of unemployment, index of tourist activity, rate of migration, and inhabitant per dwelling.

In their investigation relating variables explaining the level of financial distress of local governments in the state of New South Wales, Australia, Jones and Walker (2007) found that population, size of municipalities, road maintenance costs and carrying values of infrastructure assets were positively related with financial distress. On the other hand, revenue-generating capacity and the number of full-time staff were negatively associated with the level of financial distress.

Casal and Gomez (2011) analysed the impact of size and geographic location on the financial condition of Spanish municipalities. They found that population size and geographic location of local government influence some dimensions of the financial condition of municipalities.

### **2.3. Demand Theory and Supply Theory**

Deacon (1978) argues that demand theory can be applied to public sector spending because public budgets are allocated among services in much the same manner that households allocate income to private commodities. Ohls & Wales (1972) also use demand theory and supply theory to explain differences in per capita expenditures across countries.

In the economic context, demand for services and products provided by a firm depend on income, price, number of buyers, prices of other products, quality, tastes & preferences, and expectation about the future (Mankiw et al. 1999). In the LG environment context, demand for services and goods provided by a LG depends on population, community needs and tastes, and income per capita of the community (Berne & Schramm 1986; Deacon 1978; Hyman 1990; Ohls & Wales 1972).

Supply is defined as the quantity of a product that a producer is willing and able to supply onto the market at a given price in a given time period. The basic law of supply is that as the price of a commodity rises, so producers expand their supply onto the market. In the economic context, factors affecting supply of services and goods are production costs, the technology used in production, the price of related services and goods, firm's expectation about future prices, and number of suppliers (Mankiw et al. 1999). Among these factors, the relevant factor for the LG environment is the cost of services and goods and cost of delivering services and goods (Hyman 1990; Ohls & Wales 1972). These costs are related to cost of capital, labor & other resources, population, and population density.

## **2.4 Hypotheses Development**

### **2.4.1 Association between LG Financial Condition and Population**

Hyman (1990) argue that population affects per capita LG expenditure both on the demand and supply sides. The more population causes the more public facilities must be provided by LG to the public. Furthermore, the more social problems also occur if the number of people increases. This condition will cause the demand curve of LG-provided services and goods shift to the right. As a result, total LG expenditure will increase. On the other hand, the larger population will lead to the achievement of economies of scale. These conditions will shift the supply curve of LG-provided services and goods downward and to the right. In turn, cost per unit of services and goods will decrease. Assuming that services and goods provided by LG are normal goods<sup>1</sup> and the nature of demand of services and goods is elastic<sup>2</sup> (Hyman, 1990), so the community will switch to use more the services and goods provided by LGs. As a result, LG expenditure per capita will increase because the effect of demand side (i.e. increasing in the quantity of services and goods demanded) is larger than the effect of supply side (i.e. decreasing in the cost per unit of services and goods). Thus, the simultaneous shifts of demand and supply curves will cause the total expenditure per capita of LG to increase. The increasing of total expenditures per capita will decrease budget surplus or increase budget deficit. As a result, dimension of budgetary solvency will decrease. Holding other factors constant, this condition will deteriorate LG financial condition.

Pammer (1990), Rubin (1982), Wang, et al. (2007) and Jones & Walker (2007) find that size of population is negatively associated with financial condition index in local councils. Wang, et al. (2007) argue that larger populations may demand greater public spending which can lead to deteriorating financial conditions if additional revenues are not generated proportionally to fund the increased service demand. Based on the explanation above, this study formulates the following hypothesis for the relationship between population and the financial condition of local government.

*Hypothesis 1: Population is negatively associated with the financial condition of local government.*

### **2.4.2 Association between LG Financial Condition and Age Profile of Community**

Age profile of community refers to the composition of the population of working groups and non-working groups. The age profile of community will affect the taste and needs for services and goods

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<sup>1</sup> Normal good is a good for which, other things equal, an increase in income leads to increase in demand (Mankiw, 2007 p.68).

<sup>2</sup> Demand for a good is elastic when quantity demanded change significantly in respond to changes in prices.

provided by LGs (Berne and Schramm, 1988). The age profile affects LG-provided services and goods on the demand side. Workers groups (community with age between 18 and 60 years old) have a sense and need for services and goods that different compared to the non-working community groups which are community groups under the age of 18 years old and community groups in over 60 years old. For example, non-working community groups need more certain type of facilities such as schools, parks and recreation, nursing homes that are not needed by a group of workers. This condition will result in additional expenditures of LGs to provide these facilities. As a result, the demand curve of services and goods will shift to the right. Thus, LGs that have a higher percentage composition of the community with age profile of non-working will face higher pressure on demand spending than LGs that have a community with a lower percentage composition of the age profile of non-working worker. In turn, LG total expenditure will increase and per capita expenditure will increase, as well. The increasing of total expenditures per capita will decrease budget surplus or increase budget deficit. As a result, the dimension of budgetary solvency will decrease. Holding other factors constant, this condition will deteriorate the financial condition.

Jin and Zhang (2001) and Zafra-Gomez et al. (2009c) found that increasing number of non-working groups of community increase local government expenditure, which lead to deteriorate financial condition. Based on the explanation above, this study formulates the following hypothesis for the relationship between age profile and the financial condition of local government.

*Hypothesis 2: Community age profile is negatively associated with the financial condition of local government.*

#### **2.4.3 Association between LG Financial Condition and Wealth of Community**

Wealth of the community affects the LG-provided services and goods on the demand side. It is believed that LG-provided services and goods are normal goods (Hyman, 1990). Therefore, the more prosperous society, the quantity of services and goods that society wants are increasing as well. As a result, LG total expenditures will increase. In addition, not only the quantity increase, but also the quality of the desired LG provided-services and goods will be higher. For example, in the sector of health care, the more prosperous society will ask for better services such as specialist physician services (rather than general doctor services) and branded drugs (rather than generic drug) and the like. This situation will shift the demand curve of services and goods to the right. In turn, LG total expenditure will increase and the per capita expenditure will increase, as well. The increasing total expenditures per capita will decrease budget surplus or increase budget deficit. As a result, the dimension of budgetary solvency will decrease. Holding other factors constant, this condition will deteriorate the LG financial condition.

Borcherding (1985) and Ohls & Wales (1972) find that a community with relatively high wealth is likely to buy relatively large amounts of both state-produced and private goods, and hence one would expect the demand curve to shift to the right with an increase in income. As a result, local government's total expenditure will increase. This situation worsens the local government financial condition. Douglas and Gaddie (2002) and Wolkoff (1987) also found a positive relationship between state general fund expenditures and per capita personal income. In their study Wang et al. (2007) find that the relationship between financial condition index and personal income per capita is negative. They argue that individuals with higher personal incomes may require increased public spending in certain areas tailored to higher income populations which may eventually worsen the financial condition of local government. Based on the explanation above, this study formulates the following hypothesis for the relationship between community wealth and the financial condition of local government.

*Hypothesis 3: Level of wealth of community is negatively associated with the financial condition of local government.*

#### **2.4.4 Association between LG Financial Condition and Population Density**

Population density affects LG-provided services and goods through the supply sides. The increasing density of population (i.e. the closer the distance among households) is believed to reduce the cost per unit of goods and services produced by LG (Downing, 1973). In addition, Hyman (1990) argues that average cost per unit is analogue to its price per unit. The lower the cost per unit leads a LG to supply more goods and services to the community. This situation will shift the supply curve of services and goods to the right. The increasing goods and services supply to the community will result in improved service-level solvency. Holding other factors constant, on overall, the financial condition of LG will be improved.

Borcherding and Deacon (1972) and Downing (1973) found that population density is inversely related to per capita expenditure. In addition, Ladd (1992) cited in Carmelli (2008) finds that increasing population density decreases local government costs. Furthermore, Carmeli (2008) argues that smaller local authorities are unable to reach optimal levels of economic efficiency because of their limited resources and complex challenge. Carmelli (2008) also finds that larger local authorities enjoy better fiscal health than smaller local authorities. Based on the explanation above, this study formulates the following hypothesis for the relationship between population density and the financial condition of local government.

*Hypothesis 4: Population density is positively associated with the financial condition of local government.*

#### **2.4.5 Association between LG Financial Condition and Revenue-base**

Revenue-base refers to the resources from which a LG generates its revenues. Revenue-base affects LG-provided services and goods on the supply side. A LG with strong revenue-base could supply more revenues to LG. As a result, the LG can provide more goods and services to the community. Therefore, the supply curve of services and goods will shift to the right. The increasing goods and services supply to the community will result in improved service-level solvency. Holding other factors constant, on overall, the financial condition of LG will be improved.

Carmelli (2008), Pammer (1990), Rubin (1982) and Wang et al. (2007) found that there is negative association between local government revenue base and level of local government financial distress. Based on the explanation above, this study formulates the following hypothesis for the relationship between revenue base and the financial condition of local government.

*Hypothesis 5: Local government revenue-base is positively associated with the financial condition of local government.*

#### **2.4.6 Association between LG Financial Condition and Financial Efficiency**

Financial efficiency refers to efficient practices of financial management undertaken by LGs. Examples of efficient practices include the use of technology; and the use of resources (i.e. personnel and equipment) not in excessive way. Financial efficiency affects LG-provided services and goods on the supply side. A good financial efficiency practices will lower the cost per unit of services and goods. As a result, LGs can provide more goods and services to the community. Therefore, the supply curve will shift to the right. The increasing goods and services supply to the community will

result in improved service-level solvency. Holding other factors constant, on overall, the financial condition of LG will be improved.

Pammer' 1990 study (Kloha 2005 p.314) argues that poor management causes financial stress of local governments. In addition, Beck (1982) argues that bureaucratic inefficiency as contributor to fiscal stress as in the case of Cleveland. Furthermore, Jin and Zhang (2011) found that poor management has a statistically negative effect on local government financial condition. Based on the explanation above, this study formulates the following hypothesis for the relationship between financial efficiency and the financial condition of local government.

*Hypothesis 6: Local government financial efficiency is positively associated with the financial condition of local government.*

#### **2.4.7 Association between LG Financial Condition and Cost of Services and Products**

To produce goods and services, LG use relevant sources such as labor, raw materials and overhead. Input prices of relevant sources affect LG-provided services on the supply side. In general, the lower prices of relevant sources, the lower average price per unit of the services and goods will be. In turn, the more goods and services can be supplied by the LG to the community. Therefore, LGs with cheaper prices of relevant sources will be able to supply more goods and services to the community people. As a result, the supply curve will shift to the right. The increasing goods and services supply to the community will result in improved service-level solvency. Holding other factors constant, on overall, the LG's financial condition will be better.

LGs with higher prices of relevant sources will supply less goods and services. If such a LG would supply the goods and services with the same amount as LGs which has lower input price, then the LG most likely to make loans to the third parties (i.e. banks, other governments, or the central government). As a result, the LGs will have weaker dimension of short-term solvency, budgetary solvency, long-term solvency, and financial flexibility. In turn, on overall, the LG's financial condition will worsen.

Baumol (1967) and Bradford et al. (1969) found that wages and salaries of local government employees are the major determinant of costs of services and goods provided by local governments; and Beck (1982) found that exorbitant municipal wages and welfare expenditure as a contributor to fiscal stress. Based on the explanation above, this study formulates the following hypothesis for the relationship between cost of services and products and the financial condition of local government.

*Hypothesis 7: Cost of production of services and products is negatively associated with the financial condition of local government.*

### **3. RESEARCH METHODS**

#### **3.1 Data, Data Sources and Sample**

This study uses secondary data which were socioeconomic data and audited LG financial statements for the fiscal year of 2010. The reason to use the fiscal year 2010 is because in that year the Central Bureau of Statistics conducted a census of population. Thus, the data on population number, population density, and age profile of population, three factors that are examined, are reliable.

To obtain reliable data, the data were taken directly from the sources. Data of LG financial statements, which are publicly available, were taken from the Supreme Audit Board. In order to



increase data reliability, the financial statements used were those which have an unqualified opinion or qualified opinion. Financial statements which have a disclaimer opinion or adverse opinion were not used because such financial statements would reduce the reliability of data. The socioeconomic data of population, population density, minimum regional wage, gross domestic product, jurisdiction area, number of people who live above the poverty line, age profile of population were derived from the Central Bureau of Statistics, the Ministry of Home Affairs, and the Ministry of Finance.

In order to achieve homogeneity so that comparability is maximized, this study uses financial statements of district LG in Java Island as the sample. District LGs in Java Island are relatively homogenous in environment, socioeconomic factors, culture, and infrastructure. Besides that, the number of those LGs in Java was considered adequate from statistical perspective which is 83 district LGs.

### 3.2. Operational Definition of Variables

Table 1 below shows the measurement for each independent variables.

**Table 1: Independent Variables and Their Measurement**

Variables	Measurement
Population	Number of citizens who live in the territory of LG in 2010 when census was undertaken.
Age Profile	Ratio of sum of population under 18 years old and over 60 years old divided by population number.
Community Wealth	Ratio of number of people who live above the poverty line to number divide by population number.
Population Density	Ratio of population number divided by jurisdiction area in square kilometres.
Cost of Services and Goods	Minimum regional wage.
LG Financial Efficiency	Ratio of employee expenditures to total expenditures.
Revenue-base of LG	Gross domestic product at constant price (Year 2000)

As stated in Part 1, there are sixth dimensions of LG financial condition. Table 2 below provides the indicators to measure each dimension of the LG financial condition.

**Table 2: Dimensions and Indicators of the Financial Condition**

Dimension	Indicators
Short-Term Solvency	Ratio A = (Cash and Cash Equivalent + Short term Investment) : Current Liabilities Ratio B = (Cash and Cash Equivalent + Short term Investment + Account Receivables) : Current Liabilities Ratio C = Currents Assets : Current Liabilities
Budgetary Solvency	Ratio A = (Total Revenues – Special Allocation Fund Revenue) : (Total Expenditures – Capital Expenditure) Ratio B = (Total Revenues – Special Allocation Fund Revenue) : Operational Expenditure Ratio C = (Total Revenues – Special Allocation Fund Revenue) : Employee Expenditure Ratio D = Total Revenues : Total Expenditure
Long-Term Solvency	Ratio A = Long Term Liabilities : Total Assets Ratio B = Long Term Liabilities : Investment Equities Ratio C = Investment Equities : Total Assets
Service-Level Solvency	Ratio A = Total Equities : Population Ratio B = Total Assets : Population Ratio C = Total Expenditures : Population
Financial Flexibility	Ratio A = (Total Revenues – Special Allocation Fund Revenue – Employee Expenditures) : (Repayments of Loan Principal + Interest Expenditures) Ratio B = (Total Revenues – Special Allocation Fund Revenue – Employee Expenditures) : Total Liabilities

	Ratio C = (Total Revenues – Special Allocation Fund Revenue – Employee Expenditures) : Long Term Liabilities Ratio D = (Total Revenues – Special Allocation Fund Revenue) : Total Liabilities
Financial Independence	Ratio A = Total Own Revenues : Total Revenues Ratio B = Total Own Revenues : Total Expenditures

**3.3 Research Procedures**

There are two main procedures taken in this study. The procedures are explained in the following sections.

**Procedure 1: Build Composite Index of LG Financial Condition as Dependent Variable**

To develop a composite measure of the financial conditions of LG, it takes several steps. The first step is calculate all indicators forming dimensions of financial condition. The second step is develop indicator index. The index of each indicator is calculated by using formula as follows.

$$\text{Indicator Index} = (\text{Actual Value} - \text{Minimum Value}) : (\text{Maximum Value} - \text{Minimum Value}) \dots (1)$$

Next, the third step is determining the dimension index by using the arithmetic mean<sup>3</sup> for which the formula is as follows:

$$\text{Dimension Index} = (I_{\text{Indicator-1}} + I_{\text{Indicator-2}} + \dots + I_{\text{Indicator-n}}) : n \dots (2)$$

where n is number of indicators forming dimension. The dimension index is the average of the indicator indexes that compose it.

After completing determining dimension index, the fourth step is developing a Composite Financial Condition Index (FCI). The formula to create the index is as follows.

$$\text{FCI} = w_1 * DI_1 + w_2 * DI_2 + \dots + w_n * DI_n \dots (3)$$

where FCI = Financial Condition Index; w = weight of dimension index; DI = dimension index; and n = number of dimension.

The indicator index, dimension index, and composite index are the result of the transformation of the variable value into a value between 0 and 1. A value of 0 indicates a minimum value and a value of 1 indicates the maximum value for the index; 1 meaning a perfect score of financial condition. In calculating the financial condition index, it is assumed that the weight of each dimension is equal, although author believes that the weight of each dimension should be different. Ritonga et al. (2012a) provide detail discussion about how to develop LG financial condition index.

**Procedure 2: Analysing Factors Affecting the Financial Conditions**

This study utilizes Multiple Regression Analysis (MRA) to test the hypothesis for each group of LG. The MRA model is:

$$\text{FCI} = \alpha + \beta_1 \text{Pop} + \beta_2 \text{AP} + \beta_3 \text{WC} + \beta_4 \text{PD} + \beta_5 \text{CSG} + \beta_6 \text{FE} + \beta_7 \text{RB} + \epsilon \dots (4)$$

<sup>3</sup> Arithmetic mean is more appropriate than geometric mean because it gives a fairer result than the geometric mean. For example, if a dimension consists of three indicators of which one of the indicators has zero value, so the end result of the geometric mean is zero although the other two ratios have good values. This condition does not happen in the arithmetic mean.

where: FCI = fiscal condition index;  $\alpha$ =overall intercept term;  $\beta_i$ =regression coefficient; Pop=population; AP = age profile; WC=wealth of community; PD=population density; CSG=cost of services and goods; FE= financial efficiency, RB = revenue base;  $\epsilon$  = residuals.  
This stage ends up by testing assumptions underlying multiple regression model.

## 4. FINDINGS

### 4.1. Developing Financial Condition Index as Dependent Variable

The result of the best ten and the worst ten of financial condition index of district LGs can be seen in the table 3 below. The process of developing the index and the complete list of the financial condition index will be provided upon request.

**Table 3: Dimension Indexes and Financial Condition Index of District Local Governments for Fiscal Year 2010**

Rank	District Local Government	FII	STSI	BSI	LTSI	SLSI	FFI	FCI
1	Kabupaten Bekasi	0.81	1.0	0.83	0.83	0.11	0.99	0.76
2	Kabupaten Sampang	0.19	0.94	0.67	0.92	0.72	0.79	0.71
3	Kabupaten Demak	0.40	0.93	0.60	0.87	0.42	0.96	0.70
4	Kabupaten Sidoarjo	1.0	0.11	0.75	0.70	0.69	0.33	0.60
5	Kabupaten Bogor	0.82	0.21	0.62	0.75	0.48	0.59	0.58
6	Kabupaten Jepara	0.57	0.09	0.52	0.73	0.74	0.51	0.52
7	Kabupaten Tangerang	0.97	0.11	0.57	0.65	0.19	0.54	0.50
8	Kabupaten Banjarnegara	0.44	0.20	0.42	0.77	0.81	0.38	0.50
9	Kabupaten Jombang	0.64	0.09	0.43	0.70	0.64	0.52	0.50
10	Kabupaten Bangkalan	0.23	0.17	0.83	0.63	0.57	0.54	0.49
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...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...
74	Kabupaten Semarang	0.68	0.12	0.33	0.36	0.07	0.19	0.29
75	Kabupaten Tasikmalaya	0.08	0.07	0.32	0.66	0.24	0.36	0.29
76	Kabupaten Pekalongan	0.54	0.08	0.24	0.30	0.44	0.11	0.28
77	Kabupaten Kediri	0.37	0.12	0.58	0.19	0.33	0.12	0.28
78	Kabupaten Pemasang	0.50	0.12	0.28	0.26	0.44	0.09	0.28
79	Kabupaten Purwakarta	0.53	0.07	0.32	0.22	0.47	0.08	0.28
80	Kabupaten Sumedang	0.59	0.0	0.22	0.23	0.51	0.04	0.26
81	Kabupaten Grobogan	0.51	0.03	0.45	0.18	0.35	0.02	0.26
82	Kabupaten Ngawi	0.0	0.18	0.20	0.35	0.63	0.17	0.25
83	Kabupaten Garut	0.37	0.07	0.31	0.20	0.19	0.12	0.21

FII = Financial Independence Index  
STSI = Short Term Solvency Index  
BSI = Budgetary Solvency Index  
LTSI = Long Term Solvency Index  
SLSI = Service Level Solvency Index  
FFI = Financial Flexibility Index  
FCI = Financial Condition Index

### 4.2. Analysing Factors Affecting the Financial Conditions

The following sections discuss the results of the multiple regression analysis. There are three main results that will be analysed: model summary; F-test; and significance testing. As in Dennis's (2004) study, this study uses a 10 percent level of statistical significance because of the exploratory nature of this study and its potential impact on future research pertaining to the emerging study of the financial condition of local government, especially in Indonesia. In addition, a two-tailed p-values is used to test the hypotheses.

The following table provides information about the model summary.

**Table 4: Model summary of factors affecting financial condition**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,664(a)	,441	,389	,07807	2,275

From the model summary presented in Table 4 above, the R square is 0.441, which can be interpreted as that the seven explanatory variables together in the model explain 44.1% percent of the variation in the financial condition of local government. This fact suggests that the financial condition of local government is a complex phenomenon of which the current study only explains about 44.1%. More than 50% is not explained by the factors.

The F-test is used to test the significance of the regression model as a whole. The results of the F-test are shown in the following ANOVA table.

**Table 5: F-test of factors affecting financial condition**

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Significance
1	Regression	,360	7	,051	8,448	,000 <sup>a</sup>
	Residual	,457	75	,006		
	Total	,818	82			

a. Predictors: (constant) community wealth, age profile, population, population density, cost of goods sold, financial efficiency, revenue base...

b. Dependent Variable: financial condition index

From Table 5 above, the F value is 8.448 and the significant F is 0.000, smaller than 0.05. As a consequence, we reject the null hypothesis of no linear relationship. Therefore it can be concluded that the regression model as a whole is significant at the 0.000 level.

The t-tests are used to test the significance of individual coefficient. The following table provides information about parameter estimate of each independent variable, t statistics, and p values.

**Table 6: t-Test of Factors Affecting Financial Condition**

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Significance	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	,335	,272		1,231	,222		
	population	-4,89E-08	,000	-,333	-2,239	,028	,336	2,972
	revenue base	5,184E-15	,000	,409	2,663	,009	,316	3,165
	population density	2,048E-05	,000	,106	,962	,339	,619	1,614
	cost of goods sold	-1,62E-07	,000	-,217	-1,771	,081	,499	2,004
	financial efficiency	,356	,074	,661	4,813	,000	,395	2,532
	age profile	-,280	,533	-,061	-,525	,601	,549	1,821
	community wealth	-,003	,002	-,153	-1,480	,143	,701	1,427

a. Dependent Variable: financial condition index

Table 6 above reports that four variables (population, revenue-base, financial efficiency, and cost of production) are significant in explaining the financial condition because their significant values are less than 0.1. However, three other variables (population density, wealth of community, and age profile) are not significant in predicting financial condition because their significant values are more than 0.1.

All findings regarding directions of associations between financial condition and factors influence it are in line with the hypotheses although three variables are not significant (wealth of community, age profile, and population density). These findings suggest that this study provide further evidence to explain the variability of financial condition of LG under laws of demand and supply.

Table 6 above also shows that the variable of financial efficiency with t value of 4.813 is the most important variables in affecting the financial condition of LG followed by variable of revenue-base (t = 2.663), population (t = -2.239), and cost of services and goods (t = -1.771) consecutively. The information of importance of variables could be used by LGs to set priority of policies in order to improve the financial condition.

### 4.3. Tests on Regression Assumptions

A multiple regression model can be claimed as a good model if it fulfils the criteria of BLUE (Best Linear Unbiased Estimator) (Gujarati, 2003). The BLUE can be achieved through the fulfilment of regression assumptions. Tests on regression assumptions are important because if such assumptions are not met the results and interpretation of regression analysis could be misleading. Osborne & Waters (2002) argue that when assumptions are not met the results may not be trustworthy, resulting in a Type I or Type II error. This study tests five assumptions of multiple regression analysis: normality of residuals, homoscedasticity of residuals, no multicollinearity, no autocorrelation and linearity. To test each assumption, this study uses more than one tests in order to provide sufficient assurance.

This study utilizes graphical method and Shapiro-Wilk's W test to assess the normality of the residuals because the numbers of samples are less than 2,000 (Garson, 2012); utilizes graphical method, standard deviation comparison method, Durbin-Watson test method, and Ramseys RESET test to test the linearity of model developed; uses of graphical method, Spearman's Rank Correlation Test and Koenker-Bassett test to assess the homoscedasticity assumption; uses Durbin-Watson test to assess autocorrelation; and uses both Variance Inflation Factor (VIF) and the Tolerance as a tool to check whether multicollinearity exists.

The results show that all assumptions are not violated by this model. Therefore, the regression model in this study can be claimed as a good model because it fulfils the criteria of BLUE (Best Linear Unbiased Estimator). The results of tests on regression assumptions are available upon request to the authors.

## **5. DISCUSSION**

### **5.1. Population**

This study finds that variable of population has negative relationship with financial condition index. This result accord with hypothesis 1 developed in the Part 2. These finding indicates that the effect on demand side (i.e. increase in total expenditure) is bigger than the effect on supply side (i.e. increase in volume of services and goods supplied by LG). In addition, this finding is also parallel with previous studies (Ladd, 1992; Wang et al., 2007; and Jones & Walker, 2007). Those studies found that size of population negatively associated with financial condition of local councils.

The significance of variable of population number in affecting financial condition supports the assumptions of, first, the demand of services and goods provided by LG in Indonesia is elastic and, second, the services and goods provided by LG in Indonesia are normal goods. This finding is in line with Hyman's (1990) argument.

The larger the population, the number of services and goods needed by the society will increase as well. As a consequence, the total expenditure of a LG with more population will larger than a LG with less population number. In facing such a situation, the LG has two alternative choices. The first one is maintaining the supply of the services and goods at existing levels due to limited fund, or the second one is to increase the quantity of goods and services supplied as required by the community.

If the LG chooses the first alternative, other factors held constant, then the dimensions of service-level solvency will be weakened because the constant amount of services and goods are divided by larger population. As a result, overall, the LG's financial condition will worsen. If the LG chooses the second alternative, then the LG will most likely to make loans to other parties (i.e. banks, other LGs, or the central government). Why so? Although the greater population will expand the LG revenue-base for regional governments, but LGs are not able to automatically explore it because of the Law on Taxes and Levies Act 2010 limits the types of taxes and levies that can be levied by LGs. In addition, LGs are not allowed to increase rates of taxes and levies because the law limits the maximum rates of taxes and levies.

As a result of doing these loans, LG must pay interest charges, which in turn increases LG's expenditure. Thus, the dimension of short-term solvency, budgetary solvency, long-term solvency, and financial flexibility will be deteriorated. On the other hand, the dimensions of service-level solvency will improve. However, the end result, overall, the LG's financial condition will worsen.

### **5.2. Age Profile of Community**

This study fails to support hypothesis H2. This implies that age profile of community does not significantly impact LG financial condition. This findings do not support arguments proposed by Nollenberger, et al. (2003) and Berne and Scrammn (1986) who argue that community tastes and needs as reflected in age profile of community is inversely related with LG financial condition. They argue that age profile helps to measure the level of current and future needs and the level of liabilities in the community.

The possible explanation of the insignificant relationship between age profile and LG financial condition is as follows. The insignificant relationship could indicate that LGs do not satisfy the need of their communities especially for community groups under the age of 18 years old and community groups in over 60 years old. These non-working community groups need more certain type of facilities such as schools, parks and recreation, nursing homes that are not needed by a group of working community. Because LGs do not fulfil their communities' needs, this condition will not result in significant additional expenditures of LGs. In turn, LG total expenditure would not increase significantly and the per capita expenditure would not increase significantly, as well.

The implication of the explanation above is that the central government has to evaluate whether the LGs has been applying the minimum services standards to the community groups under the age of 18 years old and community groups in over 60 years old. As required by Government Regulation Number 65 Year 2005 regarding minimum services standards, LGs have to deliver services at minimum services standards to the community and incorporating the minimum service standards that have been set by the central government to be one reference for LG planning and budgeting.

### **5.3. Community Wealth**

From the Table 6 above it can be seen that hypothesis H3 is rejected in this study. This suggests that level of wealth of community does not influence LG financial condition. This finding is not in line with previous studies which found a negative relationship between wealth of community and LG financial condition (Ohls & Wales, 1972; Borcharding, 1985; Wang et al., 2007; Douglas & Gaddie, 2002; Wolkoff, 1987).

The possible explanation of the insignificant relationship between age profile and LG financial condition is as follows. An increase in the level of income would not increase demand for services or goods provided by LG. This situation occurs because services or goods provided by LG are perceived by community as inferior products. "Inferior" here does not mean "bad", but indicates a product which is perceived to have less quality and to be less distinctive compare to services and products provided by private organisations.

Another possible explanation is that the handling process (such as punctuality, friendliness) of services and goods provided by LG officers is perceived as not good, although the services and goods provided are superior products. As a result, some of community will switch to services and products provided by private organisations. Therefore, the demand curve of services and goods provided by LG would not shift to the right significantly. In turn, the total expenditure would not increase significantly and LG per capita expenditure would not increase significantly, as well.

The implication of the explanation above is that LGs have to improve the quality of services and goods delivered to community. In addition, the quality of handling process of the services and goods must be improved as well. In turn, community will have good perception on services and goods provided by LG.

### **5.4. Population Density**

Table 6 shows that this study does not support hypothesis H4. This suggests that population density does not influence LG financial condition. This finding is not consistent with the findings of Borcharding & Deacon (1972); Downing (1973); Ladd (1992); and Carmelli (2008). They found that population density is inversely related to per capita expenditure.

The possible reason to explain the insignificant relationship between population density and financial condition of LG is as follows. The increasing population density would not decrease significantly the cost per capita of delivering services and goods because there is significant inefficiency in delivering services and goods by LG. This condition happens because of the very high portion of employee expenditures as part of operational expenditures. It should be noted that employee expenditures are fixed expenditures. The composition of employee expenditures to total expenditures for the fiscal year 2011 was more than 50% in 294 LGs in Indonesia (*Harian Kompas*, 25 August 2011, p.1). The impact of the inefficiency caused by the high portion of employee expenditures is bigger than the impact of the efficiency caused by population density. With such condition, the provision of public services such as street maintenance, the number of schools or of health centres by LG with a compact boundary and a high population density will not be less costly per capita significantly compared to LG with less compact boundary and less population density. The implication of the explanation above is that LGs have to improve their operational efficiency, especially employee expenditures, in delivering services and goods to the community.

### **5.5. Revenue-base**

Revenue-base refers to the resources from which a LG generates its revenues. Table 6 shows that the association between revenue-base and financial condition is positive. This empirical finding supports hypothesis developed in the Part 2 and arguments stated by Berne and Scramm (1986) and Nollenberger et al. (2003). They argue that as revenue-base increase, the financial condition of LG will improve. In addition, the finding also show a similar result with Wang et al.'s (2007) study which showed that enlarged revenue-base leads to strengthened financial condition and financial capacities. Furthermore, the results are in line with Carmelli's (2008) work who found that local authority with inferior revenue-base encounter difficulty in providing satisfactory municipal services.

Revenue-base influences LG financial condition through supply side. A LG with narrow revenue-base probably will have smaller revenues compare to other LG with wider revenue-base. Thus, it supplies less goods and services. As a result, its service level solvency will be lower.

### **5.6. Financial Efficiency**

The association between financial efficiency and LG financial condition is positive, meaning that the more efficient a LG in managing its finance the better is its financial condition. This result supports hypothesis developed. This finding is also in line with previous studies. Pammer's 1990 study (Kloha 2005a) argues that poor management causes LGs' fiscal stress. Poor management includes the application of inadequate accounting methods, poor budgeting practices, or inadequate management. In addition, Beck (1982) finds that bureaucratic inefficiency as contributor to fiscal stress as in the case of Cleveland. In addition, Baumol (1967) argues that unlike in the business sector in which increases in wage levels are offset by increase in productivity, in LG such condition is not happen.

Financial efficiency affects LG-provided services and goods on the supply side. A bad financial efficiency practices will increase the cost per unit of services and goods. As a result, LGs can provide less goods and services to the community (assuming other factors are held fixed). This condition will result in deteriorating service-level solvency.

If such LG would supply the goods and services with the same amount as a LG, which has higher financial efficiency, then the LG has to increase its total expenditure. To finance the additional expenditures, the LG uses its existing revenues and or goes to third party for debt. This condition will lead to decrease the level of dimension of short-term solvency, budgetary solvency, long-term solvency, and financial flexibility. As a result the financial condition index will be decrease as well.



### **5.7. Cost of Services and Goods**

The results of multiple regression show that the relationship between cost of services and goods provided by LG and financial condition is negative. This evidence provides further evidence to support the hypothesis developed in the Part 2.

The mechanism of relationship between input prices and financial condition can be explained as follows. A LG with higher prices of relevant sources will supply less goods and services (assuming other factors are held constant). If such a LG would supply goods and services with the same amount as LGs which has lower input price, then the LG have to increase its total expenditure. To cover the additional expenditure the LG could take two ways: sacrifice its existing revenues and or make loans to the third parties (i.e. banks, other governments, or the central government). In turn, the LGs will have weaker dimension of short-term solvency, budgetary solvency, long-term solvency, and flexibility. As a result, on overall, the LG's financial condition will worsen.

### **5.8 Practical Implications of Knowing Factors Affecting the Financial Condition of Local Government**

Based on these results bring a message to LGs to give more attention on variable of financial efficiency if they want to improve their financial condition. LG should put the variable as the first priority to be maintained because the variable is the variable that can be controlled by LG. Besides that, looking at the coefficients of each variable that significantly influence financial condition, the variable of financial efficiency (i.e. 0.376) has the biggest influence on the LG financial condition. This condition means that the increase of financial efficiency by one unit will lead to improve financial condition index by 0.376, assuming that other variables are held fixed.

To increase financial efficiency, LGs should evaluate their operational expenditures. The largest component of operational expenditures is employee expenditures. In Indonesia, the composition of employee expenditures to total expenditures for the fiscal year 2011 is more than 50% in 294 LGs in Indonesia. Even there are several LGs allocated more than 70% of their budget for employee expenditures (*Harian Kompas*, 25 August 2011, p.1). Thus, LGs should start the evaluation from the employee expenditure whenever they want to increase financial efficiency. LGs have to assure that they have optimum number of employees at appropriate level of salary. If a LG has too many employees, the LG can transfer the excess employees to another LG which shortage employee. Another way to control the employee expenditures is by establishing moratorium of employee recruitment. In addition, LG could take several strategies in order to reduce employee expenditure such as reduce overtime, lay off personnel, early retirement, and reduce employee compensation levels. Such strategies have been taken by LGs in the United States (Pammer and Morgan, 1988).

Furthermore, Hyman (1990) argue that innovations in budgeting policies could reduce costs of supplying LG-provided services. These policies will push LG top executives to choose the minimum cost alternatives. For example, these alternatives include transferring the responsibility for supplying services and goods to private enterprises if they can supply these services and goods more efficiently. Hyman's argument is supported by Morgan and Pammer's (1988) findings. In their study they found that LGs in the United States use several strategies to improve financial efficiency by implementing better management, adopting labour saving techniques, contracting out services with private sector, implementing joint purchasing agreements, shifting responsibilities to other units of government, and contracting out services with other units of government. Honadle et al. (2004) also offers strategies to be more efficient. Such strategies include consolidate departments, combining facilities, closing

building, elimination of units of LGs, and the like. These strategies could reduce overhead expenditures and try to achieve economies of scale.

The next priority to improve LG financial condition is the variable of cost of services and goods because this variable can also be directly controlled by LG although it is the least importance variable looked from the t- value aspect (i.e. -2.086). LG should be careful when determining the regional minimum wage because this cost is the important component of total cost of services and goods. On one side it is a popular policy for local leader to set minimum regional wage at higher level, but on the other side it has negative association with the financial condition of LG.

Regarding variables of population and revenue-base, which cannot be controlled directly by LG, LG should create appropriate policies regarding these variables to improve the financial condition. For variable of population, because it has negative association with financial condition, LG should control the growth of population. For example LGs should encourage community to follow family planning program. In addition, Honadle et al. (2004) offer other strategies such as making LGs provided services difficult for people who would have higher demand for services to move into the jurisdiction or making it difficult for them to remain in the jurisdiction.

Regarding revenue-base, a LG should create a warm climate for economic growth. For example, LG provide legal certainty and incentive, such as tax reduction, for investor. Other strategies that could be taken by LGs are creating jobs, expanding sales by local business, and making strategic investments of their resources (Honadle et al., 2003)

## **6. CONCLUSIONS**

This study is aimed to determine factors affecting LGs financial conditions. The theory used to explain what factors causing variation in LG financial condition is supply and demand theory. This study finds that the significant factors are population, cost of production of services and goods, financial efficiency, and revenue-base. The insignificant factors are population density, age profile of community, and wealth of the community.

Based on findings of this study, the central government, LG executives and legislators could utilise the evidence to make effective policy pertaining to the financial conditions of LG. As a result, the quality of decision-making regarding LG financial management would be improved in the future. For Indonesian scholars, this study will represent the first attempt to assess the financial condition of LG in Indonesia. In addition, it will bridge the field of public finance and the field of public sector accounting.

## **7. SUGGESTIONS FOR FUTURE STUDY**

There may be other factors that influence the financial condition of LG, but the factors are not addressed in this study. Based on the law of supply, technology is known as one factor that influences the number of products and services produced by an organisation. Unfortunately, this study does not examine this variable as one factor that could influence the financial condition of LG. The reason to not examine this variable is because there was no data available pertaining to level of technology utilisation in LGs in Indonesia when this study was undertaken. Other factors that could also influence the LG financial condition is geographic location of a local government (Casal and Gomez, 2011).

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