



**The Effect of Regional Fiscal Policy on Regional
Economic Growth
(Study case: Provinces in Kalimantan, Indonesia)**

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This document represents part of the author's study programme while at the Institute of Social Studies. The views stated therein are those of the author and not necessarily those of the Institute.

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(QS. Ar-Rahmaan)

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List of Acronyms

DAU	Dana Alokasi Umum (General Allocation Fund)
DAK	Dana Alokasi Khusus (Special Allocation Fund)
FD	Fiscal Decentralization
GDRP	Gross Domestic Regional Product
PAD	Pendapatan Asli Daerah (Local Own Revenue)
APBN	Anggaran Pendapatan dan Belanja Negara (National Budget Allocation)

Abstract

This research paper is looking for the effect of regional fiscal policy implementation on regional economic growth in provinces in Kalimantan Island over the period when fiscal decentralization started in Indonesia, 2001 – 2011 by using panel data estimation from 4 provinces (West Kalimantan, Central Kalimantan, South Kalimantan, and East Kalimantan). The measurement of fiscal decentralization is used to analyse are Autonomy Indicator, Revenue Indicator, and Expenditure Indicator. Moreover, to see the effect of fiscal decentralization on economic growth is used control variables to support that, such as Population, Initial GDRP, Employment, and Investment. The paper concludes with there is positive relationship between fiscal decentralization and local economic growth in provinces in Kalimantan. The result shows that increase in fiscal decentralization will increase local economic growth, and other variables too except population.

Relevance to Development Studies

Fiscal decentralization is playing the important role for economic growth in region. There are some studies result shows the positive relationship between fiscal decentralization and economic growth which is when an increase in fiscal decentralization will increase economic growth. Increasing in economic growth will provide welfare, public services, and infrastructure. Therefore, this paper is trying to see the effect of regional fiscal policy on regional economic in Indonesia (provinces in Kalimantan) and it will contribute the development in Indonesia.

Keywords

West Kalimantan, Central Kalimantan, South Kalimantan, East Kalimantan, Fiscal Decentralization, Regional Economic Growth, Local Government Performance

CHAPTER 1

Introduction

1.1 The Global Picture of Fiscal Decentralization

In recent years, the interests of governments in decentralization has increased gradually especially in Asia, Latin America, and Africa (Cheema and Rondinelli 1983). Some literature showed positive effect of decentralization on growth, with empirical results showing decentralization and regional autonomy has increased efficiency and effectiveness of public sector services, and has managed to accommodate pressure from political forces. Conversely, other studies show unsuccessful decentralization and regional autonomy has threatened the economic and political stability as well as disruptions in the delivery of public services (Bird and Vaillancourt, 1998; Ter-Minassian, 1997; Davoodi and Zou, 1998; Shah, 2003).

Definition of decentralization is presented very clearly by Rondinelli. According to him, decentralization is defined as the transfer of responsibility for planning, management and resource and allocation from the central government and the agencies to (a) field units of central government ministries or agencies, (b) subordinate units or levels of government, (c) semi-autonomous public authorities or corporations, (d) area-wide, regional or functional authorities, or (e) non-governmental private or voluntary organizations (Rondinelli 1983).

There are three types of decentralization based on Rondinelli, de-concentration, delegation, and devolution (Rondinelli 1983). *De-concentration* is handing over of some amount of administrative authority and responsibility to units at lower levels within central government, ministries, and agencies (p.14). *Delegation* is to transfer managerial responsibility for specifically defined functions to organizations that are outside the regular bureaucratic structure and that are only indirectly controlled by the central government. Delegation has long been used in administrative law. It implies that a sovereign authority creates or transfers to an agent specified function duties, which the agent has broad discretion to carry out (p.19). *Devolution* is the creation or strengthening-financially or legally- of subnational units of government and the activities of which are substantially outside the direct control of the central government.

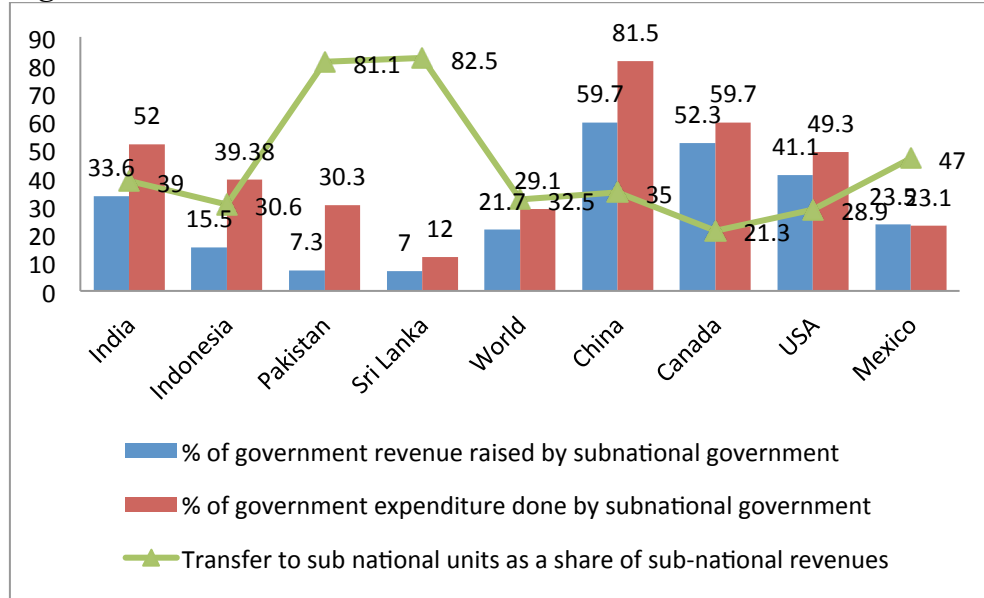
Decentralization will show the organization of government to encourage economic growth and to meet welfare of community through increased revenue. One form of implementation of decentralization on financial management is fiscal decentralization.

There are four reasons why fiscal decentralization has been adopted (1) economic efficiency, (2) cost efficiency, (3) accountability, and (4) resource mobilization (Bird and Vaillancourt, 1998). But generally, the reason suggested that fiscal decentralization has the potential to increase the performance of the public sector (Oates, 1999).

Tiebout (1956) and Oates (1972) from Davoodi and Zou (1997) paper said that the economic foundation of fiscal decentralization is according to two complementary assumptions: (1) decentralization will raise economic efficiency because the local governments are better position to deliver public services as a

result of information advantage rather than the central government; and (2) population movement and competition between local government for public services delivery will make sure local communities and local governments works together.

Figure 1. 1 Extent of Fiscal Decentralization in South Asia and the World



Source: Author's own illustration based on Ghani et.al (2012) table 1. Extent of fiscal decentralization in South Asia and the world, and Memorandum of Finance and Budget Plan 2011 for Indonesia.

From figure 1, it is shows the extent of fiscal decentralization in South Asia and the World. Most of countries show less on government revenue rather than government expenditure. Indonesia and Pakistan are countries with more than a half of spending government money rather than government revenue. And only Mexico is the country that almost balanced between revenue and expenditure. In addition, China, Canada, and India are the countries with high percentage in government spending and government revenue, whereas it represents good in financial capability and economic growth.

In Indonesia, national development activities cannot be completely separated from the role of local governments that have managed to utilize resources available in each region. As an attempt to enlarge the role and capabilities in a region for development, local governments may be required to be more independent in funding their domestic operation.

Regional economic development for this research is a process where the local government and the entire community manages variety of existing resources and form a partnership to create new jobs and stimulate the development of economic activities in the region.

The application of greater autonomy aims to develop the full potential of the existing economic order spur increased economic activity in the region and ultimately improve the national economy.

Local governments spending in regional financial budgets are direct spending and indirect spending. Direct spending is spending from government to development or government project, and indirect spending is government routine

spending. Increase revenue is expected to raise investment capital expenditures of local government. An increase in local own revenue is not followed by the rise of significant capital expenditure budget; this is due to local own revenue being used to finance other spending or being saved.

Changes in government spending stimulated by the local own revenues to finance local development can provide multiplier effects that can the growth of local economy. Moreover, at this time in Indonesia, the use of sharing revenue from central government is under fully the authority of local government that makes local government play an important role. Where sharing revenue will be allocated and distributed greatly affects the benefits of government expenditure in growth, or immediate welfare in long term. When the local government decided to allocate the fund to capital expenditure through infrastructure development, the sharing revenue will encourage long term economic growth. But the presence of good infrastructure may invite the interest of investors who generally helps intensify economic activity, and open up variety of jobs and reduce the unemployment rate. Capital spending is one component that can count on an effort to create regional economic growth.

On the other hand, the multiplier effect and crowding out can happen in fiscal policy. According to Wijaya (2000) in Gulo (2008) that government expenditure has multiplier effect and stimulate rise in national income than expenditure. Government spending will increase revenue as well as multiple productions throughout the economy have not yet reached the level of full employment, whereas government expenditure is not change investment in private sector. The development by government does not directly affect community of economic through increase income and employment opportunities, but provides facilities and infrastructure for long term of investment by private sector. Private investment will provide jobs and long term income to community.

Crowding out of private investment spending by government investment occurs when additional government spending for public investment and financed by taxation does not stimulate public sector economic activities. Its effect on economic activities can be negative because the increase in government investment increase is offset by decline in private investment.

1.2 Justification and Policy Relevance

Economic growth has been one indicator of improving population welfare in region or country. Regional development as an integral part of national development is essentially an effort to increase the capacity of regional growth that is capable of running the government well. Many factors that influence economic growth, such as climate, proximity to national markets, and energy costs, cannot be changed by state (or national) government policy.

Lin and Liu (2000) were investigate the effect of fiscal decentralization on economic growth used a production-function with regression analysis framework. They found that fiscal decentralization has positive and significant effect on economic growth through improved efficiency of allocation of revenue resources. They used Mankiw, Romer, and Weil (MRW) method for the research.

Akai and Sakata (2004) found a positive effect and significant relationship between fiscal decentralization and economic growth. They used 50 states in the

United States for the research; the indicator of fiscal decentralization was measured from the ratio of local own revenue for state, local expenditure ratio compared with state expenditure, the ratio of local tax revenue to the reception area and production as measured from the result.

Davoodi and Zou (1996) found a negative relationship between economic growth and fiscal decentralization in developing countries, but none for developed countries. This research used panel data to see the relationship between fiscal decentralization and economic growth, and the period for the research from 1970 to 1989.

From previous studies, the results are more explain fiscal decentralization potential as driver of economic performance and there are founded in the developed countries particularly in the United State and China. Because of that, one of the reason why the writer doing this research is to do the same research in developing countries especially in provinces in Kalimantan, Indonesia.

1.3 Research Objective and Research Questions

Research Objective

The research aims to understand the effect of regional government revenue and regional government expenditure to economic growth in four provinces in Kalimantan: West Kalimantan, East Kalimantan, Center Kalimantan, and South Kalimantan.

This research paper will explore the division between capital and service/transfer spending, the fiscal performance, and financial element in regional government budget in influencing the economic growth. It will also give recommendation for the government in Kalimantan to upgrading the opportunity to increase their regional financial budget.

Research Questions

In order to achieve the research objectives, the main question of the research paper is:

➤ What does the effect of regional fiscal policy on regional economic growth?

The following subs questions of the research will help to answer the main question are:

- What are the factors that influence the regional economic growth and the region finance during the fiscal decentralization in each province?
- What is the overview of fiscal performance during the fiscal decentralization?
- How can the government's role in tapping the potential of the region through regional fiscal policy be optimized?

1.4 Limitation of Study

The limitation of this paper is that one specific island in Indonesia. Kalimantan Island was used as a sample and had four provinces that will use for investigate. This paper will use all of sample of province level in Kalimantan Island. But, Kalimantan Island was adding one province because of an expansion of

area between East Kalimantan province and Central Kalimantan province in 2012, and the name of province is Southeast Kalimantan. However, because of inconsistency of data, it is considered since fiscal decentralization started in Indonesia (2001 – 2011).

1.5 Organization of Research Paper

This research paper is divided in to six chapters. Chapter 1 is introduction with the background of the research. Chapter 2 deals with literature reviews and theoretical frame work. Chapter 3 provides the methodology and data. Chapter 4 reviewed economy development in Kalimantan. Chapter 5 focuses on the result and analysis of this paper. Lastly, Chapter 6 provides the conclusion.

CHAPTER 2

Background

Based on Law 32/2004 on Regional Government Article 1, Section 5 says that “Regional autonomy is the right, authority, and duty to regulate autonomous and manage their own affairs and interest of local communities in accordance with the legislation” reference. From the definition, it can be interpreted that local autonomy is the freedom to organize and manage their own needs to meet the needs of of region in accordance with the potential and capabilities of the area under the laws.

2. 1 Decentralization in Indonesia

2. 1. 1 Before Independence

The Dutch Colonial government issued Law of Decentralization Wet in 1903 to establish the relative autonomy of local government in Indonesia only in Java and Madura, that the first law of decentralization in Indonesia was enforced. After that, the regional council was established in certain government units, where they were given the authority to bring revenue to finance their local government area. The members by regional council were appointed by the local readers, but the governor, resident or regent was appointed by the Central Government (Kausar, 2008).

Differences in local governance system before and after 1903 Law lies in the existence of the Regional Council, but in previous, there was no local government autonomy at all. All units of government were on the basis of the principle of administrative de-concentration. After 1903 Act was published, the Regional Council was established in certain government units, where they were given the authority to dig revenues to finance local governance area. Regional Council appointed members of the local leaders, but the Governor, Resident, or Regent remained appointed by the Central Government (Kausar, 2008).

On financial side, Law of Decentralization Wet aimed to reduce the financial burden of colonial government with moved to local government, but the management was still under controlled by colonial government.

2. 1. 2 Before Reformation (1945 – 1997)

Indonesia Law no.1/1945 was the first legislation regulating local governance. At this time, the autonomy given to this area is bigger than colonial era. Local government was establishment of the National Committee of Regions on every level of region except at province level. Furthermore, Government was revised the Law no. 22/1948 to emphasize autonomy. In addition, the introduction of form of local government is local government autonomy and the composition of local government into three levels, province, district, and village (Tamin, 2012) in Mungkasa.

After that, the occurrence of temporary constitutional change in 1950 and gave a birth Law No. 1/1957 which emphasizes autonomy system based on the willingness and real ability in region. The implementation of this law was not

smoothly and back again to Indonesia Constitution 1945 (UUD 1945) which followed up by declaration of President (Penpres) no. 6/1959. The Penpres aimed the powerful of central government to local government (Hardjosoekarto) in Mungkasa. After that, the Law no. 18/1965 was created due to the lack of Penpres 1945. Since it was considered to give the widest of local autonomy because the previous law was not eligible then Law no. 5/1974 was born. There are three main principle of the law: decentralization, deconsentration, and task of apprenticeship (Mungkasa)

2. 1. 3 After Reformation (1998 – Now)

In Indonesia, fiscal decentralization is starting issuance of Law no. 22/1999 on Local Government and Law no. 25/1999 on Fiscal Balance between Central Government and Local Government. Therefore, fiscal decentralization was applied in Indonesia since 1st January 2001. The purpose of the Art are (1) giving broad political participant to local authorities (Politic Decentralization), and (2) providing greater access to use the natural resources that is exist in their respective regions.

Moreover, the central government was established three laws of state finances; Law no. 1/2004 on State Finances, Law No. 1/2004 on State Treasure, and Law No. 15/2000 on the Management Audit and State Financial Responsibility. Furthermore, Law no. 22/1999 and Law no. 25/19999 was revised due to unserious central government gave autonomy to local government. Completing of the laws is Law no. 33/2004 on Local Government and Law no. 34/2004 on Fiscal Balance. Both of the laws are being used as the basis of decentralization in Indonesia.

2. 1. 4 Implementation Fiscal Decentralization in Indonesia

“In Indonesia, the implementations of the fiscal decentralization programme are intended to (1) increase national allocation and regional government efficiency; (2) meet regional aspirations, improve overall fiscal structure, and mobilize regional and therefore national revenues; (3) enhance accountability, increase transparency, and expand constituent participation in decision-making at the regional level; (4) lessen fiscal disparities among regional governments, assure the delivery of basic public services to citizens across the country and promotion of government efficiency objectives; and (5) improve social welfare of Indonesians (Suhendra and Amin, 2006:5)

Forms of fiscal decentralization in Indonesia are local own revenue (PAD) and the balancing fund. Local revenues are fund from local taxes, local user charge, profit owned enterprises, and other legitimate local own revenue (PAD). Balancing fund is the financial distribution system from central government that is fair and efficient as well as considering potential, condition, and needs of the region. The component of balancing fund are general allocation fund (DAU), special allocation fund (DAK), and sharing revenue (DBH).

General allocation fund (DAU) is fund of the state budget allocation (APBN) and minimum of 26% of the total budget allocation (APBN) for the purpose of inter-regional equalization financial ability to funds the need of area, which the area has higher potential hen DAU will get smaller amounts, vice versa. Special allocation fund (DAK) is used to help fund special activities of regional

affairs and in accordance with national priorities and has been set in the state budget.

And the last is sharing revenue (DBH), which consists of tax sharing and funding on no tax that serves to minimize the vertical gap between central and local governments. Tax-revenue sharing is in the form of land and building tax (PBB), tax on acquisition of land and building (BPHTB), and income tax (PPh). Balancing fund for non-tax revenue is from natural resources sector of activities in forestry, mining, fisheries, oil and gas, and geothermal.

At this time, it is need improvement of the implementation of fiscal decentralization. The reason is to improve the quality of financial relations between central and regions in order to encourage the growth of the national economy (Martowardojo, 2011). Moreover, Martowardojo (2011) said that the constraints in the implementation of fiscal decentralization in Indonesia is the budget should be used for provision of education, health, roads, and irrigations that has not been used efficiently, as well as the weakness of policy and legislation on financial management from central to region. Therefore, the central government is currently trying to improve and enhance refinement fiscal decentralization in Indonesia.

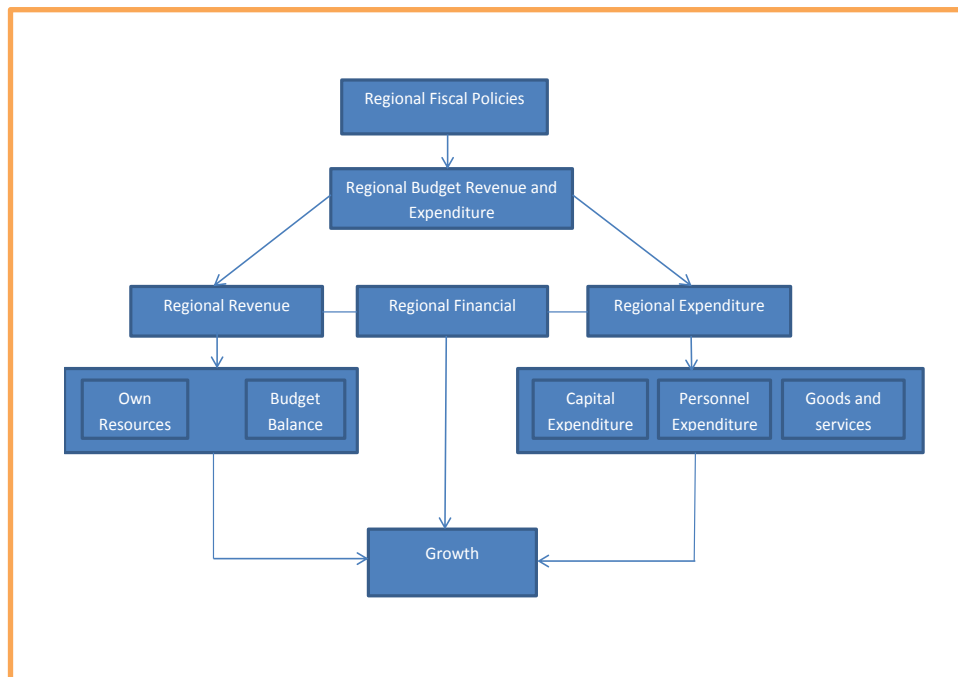
Local autonomy may give effect to economic growth of region because it gives freedom to local government to make their own financial plan and make policies that may affect the progress of the region, and This economic development would be characterized by rising productivity and rising income per capita of the population resulting in improved well-being. What might have happened is the presence of economic growth was not followed by increase in capital expenditure, we can see from the number of budget allocation to capital expenditure compared with total budget.

As has been mentioned that budget balance consists of revenue sharing (DBH), general allocation fund (DAU), and special allocation fund (DAK). Revenue sharing is the fund allocated to the region based on a percentage to fund the needs of the region in the implementation of decentralization. DAU is a fund transfer that is block grant which authorizes the use of DAU left entirely to the region. Thus, DAU is a major role a component of regional revenue because most of the funds transfer is block grant. In addition, DAU also serve as initial capital for local government to carry out service tasks minimal role in public service.

Local governments are generally to allocate budget balance to personnel spending, which is optimized the center transfer should provide greater proportion of the capital expenditure for the development of the productive sector in the region. Increase in capital expenditure in the form of fixed asset such as infrastructure and equipment is crucial to improve the productivity of the economy. Region's ability to grow is determined by various economic factors sometimes influence each other. Because of that, the higher the economic growth of a region, the smaller balancing fund will receive, so it will create a sort of cross subsidies for regions that have limited economic potential.

Referring to the study, this study is a replication of the construction of thought contained in three studies mentioned. The difference these researches with previous research are in research area, period of research time and variable those are used.

Figure 2. 1 Diagram Concept Regional Fiscal Policies to Regional Economic Growth



Source: Directorate General of Fiscal Balance (DJPK)

2. 1. 5 Problems in the Implementation of Fiscal Decentralization in Indonesia

According to Goesnadhie (2012), “the successful implementation of decentralization will depend on the design, process of implementation, political support in level of decision-making at each of government level, all of society, the readiness of government administration, institution development and human resources, mechanism of coordination to improve bureaucrats performance, changes in value systems and bureaucrats behaviour in fulfil the wishes of people especially in public sector services.

Fiscal Decentralization policy implemented since 2001 in all regions in Indonesia still has some constraints. Local government authorities given from central government make an increased responsibility in administration of government such as the supplying of public goods and economic development. In carrying out of fiscal decentralization, there are need readiness and good understanding from government officials. However, there are many local governments still not optimal in implementing fiscal decentralization.

Based on Bahl (2002) in Ardiansyah (2010), there are several primary issues the experience of fiscal decentralization in Indonesia:

1. General Allocation Fund (DAU) is still low in absorption capacities in region, which general allocation fund in previous year is still there. Based on *Bisnis Indonesia Daily* 8 edition Mei 2002, in 2001, almost 40% of General Allocation Fund (DAU) had irregularities used (Ardhiansyah, 2010). This is become an evidence the region has not been able to take advantage of the maximum general allocation fund for development, so the budget is

not spend on development and often lead to corruption within local government

2. Monitoring and evaluation. Lack of good surveillance system and evaluation of the implementation of decentralization in Indonesia is giving new problems like corruption in local level.
3. Coordination with Central Government. Lack of coordination between local government and central government is resulting tenuous relationship, where coordinate between central and local government is successful instrument of decentralization.

Moreover, according to Mungkasa, other problems found in implementation of fiscal decentralization in Indonesia are:

1. Coherence, convoluted bureaucracy, and overlapping in fiscal decentralization regulations. It has happened because too many regulations due to fiscal decentralization.
2. Ineffectiveness in implementation of regional autonomy. Based on study of Directorate Regional Autonomy National Development Planning Agency (2011), the implementation of regional autonomy has not succeeded in improving the welfare of people (Mungkasa).
3. Conditions of human resources in government employee and legislature have not support the implementation of regional autonomy. This conditions happen because (1) strong influence of political power on local bureaucracy, so the loyalty of government officials tend to political power rather than to public interest, (2) do not have clear rules in career development pattern, and (3) lack of professionalism in bureaucracy, caused by incomplete recruitment patterns (planning need and selection).

2.2 Kalimantan

Kalimantan Island has abundant natural resources, the vast forests, mines the content of oil, gas, and coal, and other minerals. These wealth are fully utilized to fund development by the government in each province. Moreover, provinces in Kalimantan are dominated by rice, rubber and oil palm. The natural resources in Kalimantan become good potential for provinces to economic development and welfare for society.

Map 2.1 Provinces in Kalimantan Island



Source: Processing map based on map of Indonesia

Kalimantan is one of the five biggest islands in Indonesia and bordering with Sabah and Sarawak (Malaysia) in the north, Karimata Strait in the eastern, Java Sea in the south, and bordering the eastern part of Sulawesi and Makasar. Before October 2012, Kalimantan was divided into four provinces, but after that Kalimantan is divided into five provinces, West Kalimantan, Central Kalimantan, South Kalimantan, East Kalimantan, and North Kalimantan. The island of Kalimantan entirely around 549.032 km², it is 28% of the entire land of Indonesia. The four of Provinces in Kalimantan are:

1. West Kalimantan is located in the western part of Kalimantan Island, bordering directly on the north by Sarawak-East Malaysia, Central Kalimantan, and East Kalimantan, to the south by Java Sea, and the west by Natuna Sea and Karimata Strait. The capital city of West Kalimantan is Pontianak, and West Kalimantan has an area of 146807 km² (7.53% of Indonesia). West Kalimantan precisely traversed by the Equator (latitude 0°) exactly above Pontianak City. West Kalimantan consists of 12 districts and 2 cities.
2. Central Kalimantan province lies between 0° 45' North latitude, 3° 30' South latitude and 111° East longitude. It is located between West Kalimantan, East Kalimantan, and South Kalimantan. The total area of Central Kalimantan is 8.04 per cent of the total land area of Indonesia or 157.983 km² with has eleven major rivers and no less than 33 creeks, and Palangkaraya is capital of Central Kalimantan.
3. South Kalimantan is located in the southern part of Kalimantan Island, and Banjarmasin as capital. It is located between 114 19' 13" – 116 33' 28" East longitude and 1 21' 49" – 4 10' 14" South latitude, or it is located to the west of Central Kalimantan province, the east of the Makasar Strait, South to Java Sea, and to the north with East Kalimantan province, and only 6.98 percent of the island of Kalimantan in overall. South Kalimantan province is covering 11 districts and 2 cities which is percentage of the largest area are Kotabaru district (25.11%), Tanah Bumbu regency (13.5%), and the smallest are Banjarmasin (0.19%) and Banjarbaru (0.88%).
4. East Kalimantan province, Samarinda as a capital city, is located between 113° 44' East Longitude and 119° 00' East Longitude and between 4°24' North Latitude and 2°25' South Latitude, and it has areas which comprise 198.441,17 km² of land areas and 40.693,92 km² of ocean management areas. As the second largest province in Indonesia, East Kalimantan is divided to 10 regencies, 4 municipalities, and 140 sub districts and 1.445 villages. This province borders on Malaysia (especially Sabah and Sarawak) in the North, Sulawesi Ocean, and Makasar straits in the East, West Kalimantan and Central Kalimantan in the West, and South Kalimantan in the South.

2.2 Economic Condition in Provinces in Kalimantan

2.2.1 Economic Structure

Economic structures in provinces in Kalimantan are dominated in agricultural sector, mining sector, trade, hotel, and restaurant sector.

Table 2.1 Distribution GDRP at Current prices by Business Sector in 2011

Economic Sectors	West Kalimantan	Central Kalimantan	South Kalimantan	East Kalimantan
Agriculture	25.05%	28.59%	20.1%	5.71%
Mining	2.03%	8.98%	24.42%	50.29%
Manufacturing	17.98%	7.87%	9.19%	23.36%
Electricity, Gas, and Water	0.49%	0.64%	0.57%	0.26%
Construction	9.96%	5.57%	5.85%	2.64%
Trade, Hotel, and Restaurant	22.57%	20.9%	15.36%	7.85%
Financial, Dwelling, and Business Service	4.81%	5.85%	5.04%	2.38%
Services	9.71%	12.88%	10.69%	3.92%
Transportation and communication	7.4%	8.74%	8.78%	3.59%

Source: Indonesia Bureau of Statistic (BPS) of West Kalimantan, BPS of Central Kalimantan, BPS of South Kalimantan, and BPS of East Kalimantan.

From table 21, it can be seen that GDRP is distributed in every sectors. It shows that the agricultural sector is dominated by Central Kalimantan, West Kalimantan, and South Kalimantan with 28.59%, 25.05%, and 20.01%. Furthermore, East Kalimantan province is dominated in mining sector with 50.29%.

West Kalimantan is dominated by agricultural sector; trade, hotel, and restaurant sector; and manufacturing sectors. Each of sectors has 25.05%, 22.57%, and 17.98%. Rice, rubber, and palm oil are dominated plants in agricultural sector. Domestic trade is growing fast in East Kalimantan because purchasing power of people is high and strategic location directly adjacent with Malaysia.

Economic growth in Central Kalimantan province has increased over the last 5 years, and reached 6.47% in 2010. Central Kalimantan's economy is dominated by four sectors: agriculture business by 28.59%; trade, hotel, and restaurant by 20.9 %; services by 12.88 %; and transportation and communication 9.29 %.

GDRP South Kalimantan are dominated of 4 sector business (1) mining sector, this sector gave contribution 24.42%; (2) agriculture sector 20.10%; (3) trade, hotel, and restaurant sector 15.36%; and (4) 10.69%.

Economic growth condition in East Kalimantan is dominated by mining and quarrying sector with share to 50.29% in 2011. And it is followed by manufacturing sector by 23.36%, and then Trade, Hotel, and Restaurant by 7.85%.

2.2.2 Economic Growth in Provinces in Kalimantan

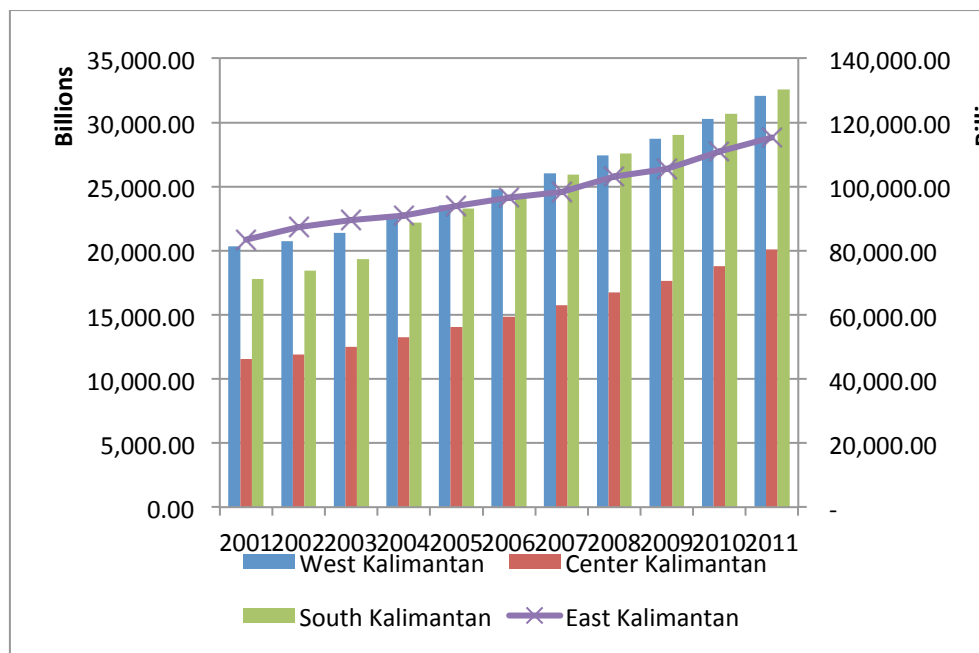
Although it is located in one island, there is many considerable variation between provinces in Kalimantan. In 2011, from economic side, East Kalimantan is the highest of GDRP current prices among four provinces which is 390.63 billion rupiah, or five times larger than others. Then, it is followed by West Kalimantan at 66.78 trillion rupiah, South Kalimantan 68.23 trillion rupiah, and

the last is Central Kalimantan at 49.07 trillion rupiah. In 2010, Economic growths in provinces in Kalimantan were lower than the national growth (6.07 per cent), while economic growths in provinces in Kalimantan are from 2 until 5 per cent. The population in Kalimantan Island, the highest position is West Kalimantan with 4.40 million peoples, and the least is Central Kalimantan (2.21 million peoples).

GDRP in East Kalimantan is highest rather than other provinces because East Kalimantan has very much natural resources especially coal and oil. And, mining production in East Kalimantan is so high that it has highest GDRP in East Kalimantan compare to other provinces.

GDRP is one indicator often used to measure regions economic growth. At figure.1, we can see since fiscal decentralization started in Indonesia in 2001 until 2011 GDRP growth rate increased significantly. East Kalimantan is very high for the number of GDRP compare to other provinces in Kalimantan. This happen because the natural resources allocated in this province are vast to become potential source for local autonomy.

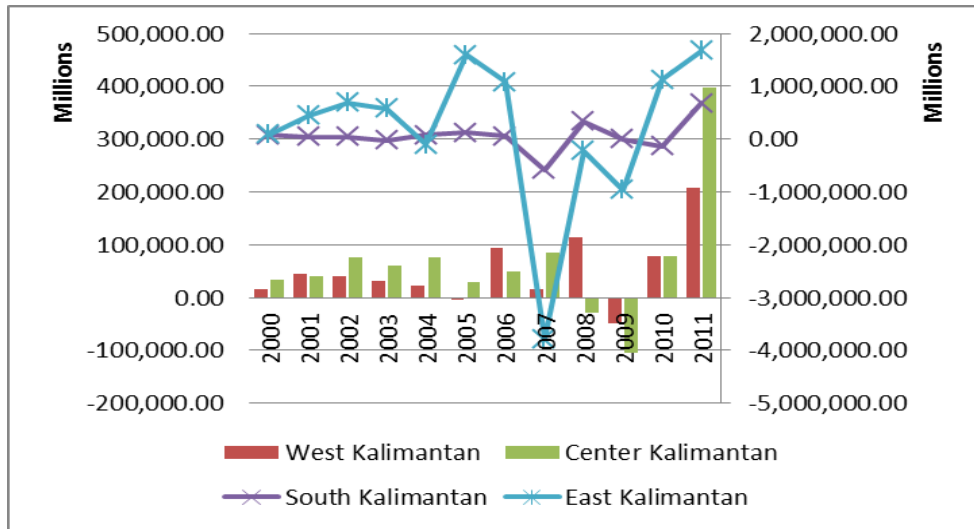
Figure 2.2 Kalimantan GDRP in Current Prices period 2001 to 2011



Source: Author's own illustration based on Indonesia Bureau Statistic (BPS)

Figure 2.2 shows the development of GDRP growth rate in Kalimantan since 2001 until 2011. It can be seen significant change to the growth of GDRP in Kalimantan after the implementation of fiscal decentralization. West Kalimantan, Central Kalimantan, and South Kalimantan experienced significant increase in the average of growth rate from 5.94% to 6.74% which this percentage of economic growth are above the economic growth of Indonesia, only East Kalimantan showed GDRP growth rate down to 3.93% that is below of Indonesia's economic growth.

Figure 2.3 Surplus and Deficit in Provinces in Kalimantan period 2001 - 2011



Source: Author's illustration based on the Directorate General of Fiscal Balance (DJPK)

Based on regulation no. 58/2005, GDRP surplus / deficit can be measure with the formula:

$$\text{Surplus/Deficit} = \text{Revenue} - \text{Expenditure}$$

Ministry of Finance had set minimum financial budget deficit GDRP that an area does not exceed 5% of total revenue. Local government would meet the criteria surplus or deficit, and district will be treated as violations of its regional budget deficit more than 5% of their total income (DJPK, 2007).

The graph shows surplus / deficit in provinces in Kalimantan period 2001 – 2011. From the graph, it can be seen that during the implementation of fiscal decentralization in Indonesia, only a few years in deficit, and the peak is in 2007 and 2009, where East Kalimantan in deficit until -3.781 billion rupiah in 2007 then followed by South Kalimantan with -576 billion rupiah. It continued in 2009, the budget deficit happened in almost all provinces in Kalimantan except South Kalimantan (0.20%). However, since 2010, it has started to increase toward surplus. This is due to the increasing contribution of local revenue, not only from local own revenue but also from others local revenue.

2.2.3 Population

Based on population data in 2010, West Kalimantan is a province with the largest population compared to three other provinces, with 4.3 million peoples. However, when it is viewed from the accretion of population, East Kalimantan had the highest population growth of around 47% in 2010 since 1990, while other provinces is only about 27% to 37%. Because population growth is high enough in East Kalimantan; it is very serious arrangement due to population growth means the addition of space requirements for residence or place of business.

Tabel 2.2 population in Provinces in Kalimantan

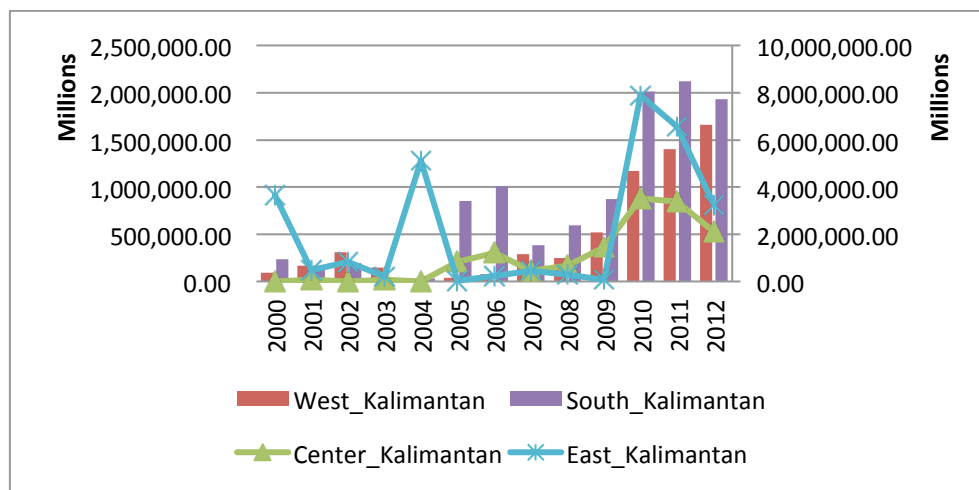
Year	West Kalimantan	Central Kalimantan	South Kalimantan	East Kalimantan	Indonesia
1990	3.229.153	1.396.486	2.597.572	1.876.663	179.378.946
2000	4.034.198	1.857.000	2.985.240	2.455.120	206.264.595
2010	4.395.983	2.212.089	3.626.616	3.553.143	237.641.326

Source: Indonesia Bureau of Statistics (BPS)

Moreover, population in West Kalimantan have increased each year. Based on 2011 population project, population was about 4.477 million peoples. Most of them live in rural areas, and about 30% live in urban areas. The population growth rate experienced a significant increase in 2010 to 2011 which is from 30.21% to 30.27%. Most of population who live in rural area are migrants from Java Island. However, population in East Kalimantan tended to increase gradually year by year. In 2000, the number of population was 2.443.334 people become 3.553.143 people in 2010. During this time, the population growth is 3.82% in East Kalimantan; the highest growth was in Tanah Tidung Regency by 8.71%, and 1.96% – 5.87% in another city/regency.

2.2.4 Investment

Figure 2. 4 Investment in Provinces in Kalimantan, period 2000 – 2011



Source: Author's own illustration based on PMA and PMDN, Indonesia Investment Coordinating Board (BKPM)

Table 2.4 shows an increase of investment in provinces in Kalimantan. In early implementation of fiscal decentralization, the investment was not too high, only East Kalimantan shows the highest investment in 2004. This is because East Kalimantan is dominated by mining sector and it makes foreign investor interested to invest in East Kalimantan. After that, it was followed by South Kalimantan, West Kalimantan and Central Kalimantan. A large amount of investment is expected to be utilized to increase the production capacity and the

availability of infrastructure, so it will increase the productivity of national output and economic growth.

Chapter 3

Theoretical Framework and Empirical Studies

3.1 Fiscal Decentralization

“Decentralization is a transfer of authority and responsibility for public functions from central government to subordinate or quasi-independent government organization or the private sector covers a broad range of concepts” (Decentralization Briefing Notes, Litvack, 1999).

According to Litvack (1999), there are three types of decentralization which are political decentralization, administrative decentralization, and fiscal decentralization. Political decentralization is devolution of greater authority to the regions concerning various aspects of decision making, including the establishment of standards and regulations. Administration decentralization is a delegation of authority, responsibility, and the resources between the various levels of government. Fiscal decentralization is the granting of authority to the regions to explore the sources of income, the right to receive transfers from higher levels of government, and determine the routine expenditure and investment.

In Indonesia, based on the Law No. 32/2004, the definition of fiscal decentralization is transfer of power from central government to local government to regulate and administer the affairs of government in the system of Republic of Indonesia.

In practice, the concept of fiscal decentralization, known as money follow function, in the implementations are using two approaches, expenditure assignment and revenue assignment (Mahi, 2002). Expenditure assignment stated that the change of public service responsibility from central government to local governments, it means that the role of public goods increases. Moreover, revenue assignment is the increased financial capacity through the transfer of financial resources to the region in order to finance decentralization functions.

3.1.2 Economic Growth

In general, economic growth is the process of economic production capacity that is realized in the form of increase in national income. According to Kuznets (1973), economic growth can be defined as increase in long-term capacity of a country to provide various types of economic goods to its population, which increase the capacity / ability to grow based on the advancement of technology and the institutional and ideological adjustments that is necessary. From the definition, there are three important components, which are: economic growth can be seen from an increasing supply of goods, advance technology is a factor that determines the degree of capacity growth in supplying wide assortment of goods to society, and widely and efficiently in use of technology requires adjustment in the field of institutional and ideological innovations generated properly utilized.

3.2 Empirical Evidences on relation between Fiscal Decentralization and Economic Growth

There are many studies investigating the relationship between fiscal decentralization and economic growth. There are positive and negative effects of fiscal decentralization. First of all, the literatures showing positive effect of fiscal decentralization on economic growth can be summarized as follows.

Akai and Sakata (2004) studied the effect of fiscal decentralization contribution to economic growth. They used 50 states in the United States for the research from period 1992 to 1996; the methodology was panel data regression with fixed effect method. Before that, the first thing was to construct a quantitative measure fiscal decentralization with four decentralization indicators: (1) the share of revenue in total budget; (2) the share of expenditure in the total budget; (3) the fiscal autonomy of local government; and (4) the fiscal production-revenue indicator. To investigate fiscal decentralization contribution to economic growth, the indicator of fiscal decentralization was measured from the ratio of local revenue for state, local expenditure ratio compared with state expenditure, the ratio of local tax revenue to the reception area and production as measured from the result. To test statistically how is contribution of transfer fund between governments to economic performance, it is need to formulate fiscal decentralization criteria with quantitative. They found a positive effect and significant relationship between fiscal decentralization and economic growth.

Another research that shows positive and significant was research from Jin and Zou (2005). They used panel data to see the relationship and the effect of fiscal decentralization on economic growth. This research was conducted on 30 provinces in China with two phases of fiscal decentralization, before fiscal decentralization under the fiscal contract system from 1979 to 1993, the post of fiscal decentralization under the tax assignment system from 1994 to 1999. Based on the result of this study the first phase found that the provinces economic growth had a negative relation to expenditure and positive relation related to revenue. In the second phase, the provinces economic growth showed no significant relation to expenditure, positive and significant relationship to the revenue.

Lin and Liu (2000) found that fiscal decentralization has positive sign and significant effect on economic growth through improved efficiency of allocation of revenue resources. They used Mankiw, Romer, and Weil (MRW) method for the research. Moreover, the result revealed that the development expenditure is logical effort made an improving public confidence in local government in order to boost regional economic growth. The study found a strong correlation between development expenditure and the level of decentralization and this will encourage and accelerate economic growth in the region.

However, some researchers found the negative effect of fiscal decentralization and economic growth. Davoodi and Zou (1996) found a negative relationship between economic growth and fiscal decentralization in developing countries, but none for developed countries. This research used panel data of 46 countries over period of the 1970 - 1989 to investigate the relationship between fiscal decentralization and economic growth. From the research, they found that there was no relation between fiscal decentralization and level of economic growth; the higher of fiscal decentralization, economic performance in develop

countries will reduced. This paper used data panel regression with OLS method, and the methodology. Akai and Sakata (2002) commentated Davoodi and Zou (1996) research that used the data from many countries gave difficulty in analysis the effect of fiscal decentralization because the differences in history, culture, and stage of economic development.

Another same result from Zhang and Zou (1998) that fiscal decentralization gave negative effect on economic growth. The research is used panel data for China period of the late 1970s. Data was used to cover period of high economic growth in China. In some period, high level of government can provide public investment that gave high externalities in first stage of economic development. Based on the result, fiscal decentralization reduced provincial economic growth.

In Indonesia, the researches about the effect of fiscal decentralization on economic growth are already done by many of researcher. Wibowo (2008), his study investigated the relationship between fiscal devolution and economic growth in Indonesia along over transition periods from 1999 to 2004, (before and after fiscal decentralization). This research used panel data from 29 provinces with economic growth rate as dependent variable; it is divided with 3 part of indicator (revenue indicator, expenditure indicator, and autonomy indicator), the result of this paper is strengthened due to fiscal delegation to national government has potential contribution to economic progress. Using fixed effect on panel data regression, the research found that generally, implementation of fiscal decentralization in Indonesia is giving positive influence on economic growth, and the results expenditure indicator and revenue indicator showed positive sign and significant, whereas autonomy indicator gives negative influence but tendency to improve after fiscal decentralization in 2001.

Chapter 4

Data and Methodology

4.1 Data

Data used in this research are secondary data from financial data on Budget Revenue and Expenditure (APBD), Gross Regional Domestic Product (GRDP), and Indonesia Investment covering four provinces in Kalimantan Island from 2001 to 2011. The four provinces in Kalimantan are West Kalimantan, Central Kalimantan, South Kalimantan, and East Kalimantan. The data that were used in this research are Gross Regional Domestic Product (GDRP) from Statistical Year Book of Indonesia period 2001 – 2012 Indonesia Bureau of Statistic, regional financial data on Budget Revenue and Expenditure (APBD) from the Directorate General of Fiscal Balance (DJPK) Republic of Indonesia Ministry of Finance, regional investment data from Indonesia Investment Coordinating Board (BKPM), regional economic studies from the central bank of the Republic of Indonesia (Bank Indonesia (BI)) and sites, articles, books related with this research.

4.2 Variables

The variables are used in this paper based on some substantial variables that related with the effect of regional fiscal policy on regional economy.

Table 4.1. Variables definition and sources

Variable	Definition	Source
Real GDRP	Real GDRP per capita of each provinces	Indonesia Bureau of Statistic (BPS)
Local Own Revenue	Income earned from the regional resources	Directorate General of Fiscal Balance (DJPK)
Total Regional Revenue	Income earned from regional resources with grant	Directorate General of Fiscal Balance (DJPK)
Total Regional Expenditure	Total spending from region / local government	Directorate General of Fiscal Balance (DJPK)
National / Central Revenue	Income for state from taxes, non-taxes (natural resources) and grant	Directorate General of Fiscal Balance (DJPK)
Sharing Revenue of Tax and Non Tax	Sharing Income from taxes and non-taxes between central and local government	Directorate General of Fiscal Balance (DJPK)
Fiscal Decentralization	Fiscal Decentralization indicators: Fiscal Decentralization on Autonomy side (FD 1) Fiscal Decentralization on Revenue side (FD 2)	Autonomy side (Regional own revenue shared to Total Regional revenue) Revenue side (Total Regional Revenue shared to Total National revenue)

	Fiscal Decentralization on Expenditure side (FD 3)	Expenditure side (Total Regional Expenditure shared to Total National Expenditure)
Population	The number of people who live in province	Indonesia Bureau of Statistic (BPS)
Employment	The number of people 15 years of age and over who are working	Indonesia Bureau of Statistic (BPS)
Investment	The number of value of investment realization in each province in Kalimantan	Indonesia Investment Coordinating Board (BKPM)

4.3 Methodology

The methods used in this study are descriptive analysis and quantitative analysis method. Descriptive analysis is used to provide an explanation of the implementation of fiscal decentralization in provinces in Kalimantan with regional fiscal performance, and to analyse the influence of fiscal decentralization variables on regional economic growth variable, then performed quantitative analysis with regression model.

4.3.1 Regional Fiscal Performance

Based on Musgrave and Musgrave (1991) in Suparno (2010), we can use degree of fiscal decentralization to measure regional financial performance. There are 3 sources of finance available for Regional Fiscal performance:

1. Administrative independent ratio or degree of fiscal decentralization is ratio from regional own revenue with total revenue.

Generally, the model is:

$$DFD = \frac{ROR}{TRR}$$

Which:

DFD = Degree of Fiscal Decentralization

ROR = Regional Own Revenue

TR = Total Regional Revenue

2. Degree of regional fiscal potential is ratio from sharing revenue of tax and non-tax with total regional revenue

Model:

$$DFRP = \frac{SRTNT}{TRR}$$

Which:

DFRP = Degree of regional fiscal potential

SRTNT = Sharing revenue of Tax and Non-Tax

TRR = Total Regional Revenue

3. Degree of dependence on central government is ratio of general allocation fund and special allocation fund with total regional revenue

Model:

$$DDC = \frac{GAF + SAF}{TRR}$$

Which

DDC = Degree of dependence on central government

GAF = General Allocation Fund

SAF = Special Allocation Fund

TRR = Total Regional Revenue

To see the financial performance in terms of the revenue side, especially from regional revenue compared with total revenue, it can be grouped in categories referring to an interval scale. This interval scale is based on research of Social and political science faculty team Gajah Mada University in Tangkilisan (2005).

Tabel 4. 2 interval scale of Fiscal Decentralization Degree

Local Revenue (%)	Regional Fiscal Performance
00 – 10.00	Very Less
10.01 – 20.00	Less
20.01 – 30.00	Fair
30.01 – 40.00	Average
40.01 – 50.00	Good
> 50	Very Good

Source: Team of Social and Political Science Gajah Mada University in Tangkilisan (2005)

In addition, one of the measurements in assessing the performance of region is measure degree of regional financial independence. With degree of regional independence, it can be seen expansion of local revenues to fulfill regional requirement. Degree of Regional Independence indicates the level of ability of local government to finance their own activities, development, and services to community. It is indicated by the amount to local revenue compared with income from other sources, such as sharing revenue from tax and non-tax, general allocation fund, special allocation fund, emergency funds, and loan funds (Halim (2001) in Suparno (2010)).

The formula is:

$$DRI = \frac{LR}{ROS}$$

Which:

DRI = Degree of Regional Independence

LR = Local Revenue

ROS = Revenue from Others Source

The higher ratio indicates the level of dependence of region on other sources of revenue is low, and vice versa. In addition, the degree of regional independence shows the level of public participation in development of region; where more people paying taxes and user charges describe the higher welfare of society and more people to contribute in development.

Table 4.3 Interval Scale of Pattern Relationship between Local Ability

Finance Ability	Independence (%)	Pattern Relationship
Very Low	0% - 25%	Instructive
Low	24% - 50%	Consultative
Average	50% - 75%	Participative
High	75% - 100%	Delegative

Source: Regional Financial Accounting, Halim (2008)

Paul Hersey and Kenneth Blanchard in Halim (2008) show the relationships between central government and local government in implementation of regional autonomy, which are:

- a. Instructive Relationship, the role of central government more dominant than independence of local government.
- b. Consultative Relationship, central government intervention has begun reduced because the region is considered little able to implement autonomy.
- c. Participative Relationship, central government intervention is diminishing because the region is able to approach the level of regional independence in carrying out affairs of regional autonomy.
- d. Delegative relationship, There is no intervention from central government because region has been really able to be independent in carrying out affairs of regional autonomy.

4.3.2 Analysis of Model and Estimation

In order to see the effect of fiscal policy on regional economy growth, this paper is going to use the model which adopt from Akai and Sakata (2005).

The method that used in this research is multiple regression and panel data; this is in accordance with the formula issue and objectives of this study. Multiple regression method is connecting one dependent variable with several variables independently in a single predictive model. This research used panel data regression analysis which aims to see the effect of independent variables and dependent variable, and the ability of the model in explaining the behavior of economic growth. In this research, independent variables are local own revenue, local tax, general allocation fund, revenue sharing, and capital spending. Dependent variable in this research is economic growth (GRDP).

4.3.2.1 Model Specification

This research is using model adopted from Akai and Sakata (2005) to see the effect of regional fiscal policy on local economic growth. The equation is used in this paper is:

$$\square Y_t = \square_0 + \square_1 \text{Decentralization}_t + X_t \square + \square_t$$

Where $\square Y_t$ refers to growth rate represents GDRP per capita; Decentralization represents indicators of fiscal decentralization; X_t represents control variables for economic growth; \square represents error term; and \square_0, \square_1 and \square are approximation parameters. Furthermore, this paper used population and investment as control variables.

Therefore, the model of growth regression after modification as:

$$\ln \text{GDRP}_{i,t} = \alpha_0 + \alpha_1 \text{FD}_{(i,t)} + \alpha_2 \ln \text{Initial_GDRP}_{(i,t)} + \alpha_3 \ln \text{Pop}_{(i,t)} + \alpha_4 \ln \text{Invest}_{(i,t)}$$

Which are:

GDRP	Gross Domestic Regional Product per capita
FD	Fiscal Decentralization indicator with three fiscal decentralization indicators (FD1, FD2, FD3)
Initial GDRP 1	Initial GDRP per capita each province during period t-1
Pop	The number of population
Invest	The number of investment
Emp	The number of population 15 years of age and over who is working

4.3.2.2 Measures of Fiscal Decentralization with Econometric Model

In this paper, there are three indicators to measure fiscal decentralization that were used on Akai and Sakata (2002); Zhang and Zou (1998), and Widodo (2008) researches. First indicator of fiscal decentralization is autonomy indicator. This indicator reflects fiscal independence of local government. Akai and Sakata (2002) explained this indicator in the paper. Autonomy indicator is share of local own revenue (PAD) in total regional government revenue (TRR) in provinces in Kalimantan.

Second indicator is revenue indicator. This indicator based on revenue of local government and state government and adopted from Akai and Sakata (2002). Indicator Revenue (FD 2) represents the regional authorities based on total revenue of local government FD Revenue indicator is measure as share of total regional revenue to state / central revenue. In this indicator, the research is not take into calculate upon general allocation fund (DAU) and special allocation fund (DAK) in total regional revenue.

And the last indicator is expenditure indicator. This indicator is based on expenditure local and state government, which is measure as share of total regional expenditure to state/central expenditure. This indicator represents regional authorities based on the amount of expenditure and adopted from Zhang and Zou (1998).

According to hypothesis that will apply in this research, expected results for each variable of the regression estimation are:

- Fiscal Decentralization variable is predicted to give positive impact on economic growth.
- Initial GDRP per Capita is predicted to give positive effect on economic growth
- Population variable is predictive to give negative effect of economic growth.
- Employment variable is predicted to give positive affect for economic growth.
- Investment variable is predicted to give positive effect of economic growth

This paper is using panel data to estimate the regression of model. Panel data according to B in his book entitled *Introductory Econometrics of a Modern Approach* is:

A Panel data (or longitudinal data) set consists of a time series for each cross-sectional member in the data set. As an example, suppose we have wage, educational, and employment history for a set of individuals followed over a ten-year period.... The key feature of panel data that distinguishes them from a pooled cross section is the fact that the same cross-sectional units (individual, firms, or countries in the preceding examples) are followed over a given time period. (Introductory Econometrics of a Modern Approach: 10: 2009)

Hsiao (2003) and Klevmarken (1989) in Baltagi (2005) stated using panel data have several advantages:

1. Panel data is related to the individual, in this method we estimate that panel data is controlling for individuals heterogeneity.
2. Combination between time-series and cross-section, panel data give more informative data, more variability, less collinearity among variables, more degrees of freedom and more efficiency.
3. Cross-sectional distribution is a multitude of changes, and then panel data are able to study the dynamic of adjustment.
4. Panel data are more capable to identify and measure effects that are simply not detectable in pure cross-section or pure time-series data.
5. Panel data able to construct and test more complicated behavioral models than purely cross-section or purely time-series data.
6. Panel data can minimize bias that generated by individual aggregation because the unit of observation is too much.

There are three ways of techniques to estimate panel data model: Pooled Least Square, Fixed Effect, and Random Effect.

- a. Pooled / ordinary Least Square is panel data estimation technique that combines time series and cross section. This technique does not see attention between the time and individual dimensions, because of that intercept and slope are considered equal (constant).
- b. Fixed Effect occurs when the intercept between individual are different, while the slope being equal. It can be said that intercept can be changed for each individual and time.
- c. Random effect occurs when individual and regresses are not correlation, which is the differences of characteristics between individual and times become error in the model.

There are two stages to compare the regression result of three ways to estimate panel data model:

1. Determining Ordinary Least Square with Fixed Effect
Using F-Statistic testing which is testing the residual square sum of each method, the formula is:

$$F = \frac{\frac{SSR_1 - SSR_2}{N - 1}}{\frac{SSR_2}{NT - N - k}} = \frac{R_{fe}^2 - R_{ce}^2}{1 - R_{fe}^2} \frac{N - 1}{NT - N - k}$$

Where:

SSR1 = Sum Square Residual from Common Effect

SSR2	= Sum Square Residual Fixed Effect
N	= numbers of cross section
T	= numbers of time series
K	= numbers of free variables

Hypothesis for this test are:

Ho = Common Effect method

Ha = Fixed Effect method

2. Determining Fixed Effect with Random Effect

a. Non statistic consideration, it is compared between time periods or time series with numbers of cross section. If numbers of time series (T) in the research more than numbers of cross section (N) then recommended using Fixed Effect model, whereas Random Effect model recommended when numbers of time series (T) less than numbers of cross section (Nachrowi and Usman, 2006). Based on the consideration, this research should use Fixed Effect model because used time series (T=11) more than cross section (N=4).

b. Hausman Test

Hausman test statistic followed by Chi Square distribution with

Hypothesis of Hausman Test are:

Ho = Random Effect method

Ha = Fixed Effect method

CHAPTER 5

Finding and Interpretations

This chapter focuses on the analysis and interpretations of the findings on implementation of fiscal decentralization in provinces in Kalimantan. The chapter discusses regional fiscal performance of each province in Kalimantan and the result of panel data regression with three types of indicator.

5.1 Analysis of Regional Fiscal Performance

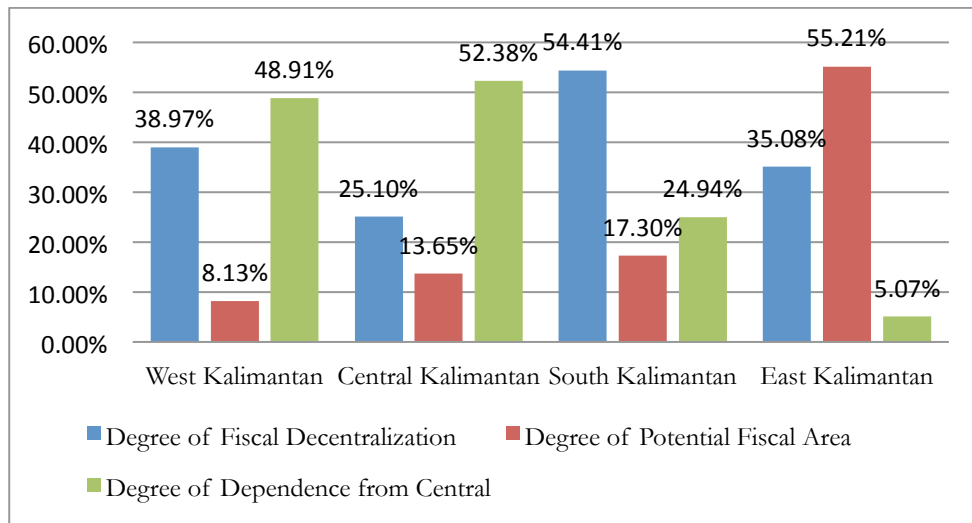
5.1.1 Regional Financial Revenue

Financial performance of region can be seen by the proportion of revenue derived originating from outside area to total local revenues. A large proportion of regional revenue comes from local own revenue (PAD) to total regional revenue within the region, and signalling the improving financial area. A bigger proportion of local revenue, from within the region to total revenue shows improvement in financial performance. This means that local government can manage the local source in the area efficiently and it can finance most regional development needs with local financial revenue.

The ability to finance the development of region derived from the area can be seen from the proportion of regional revenue to total revenue through the measure of fiscal decentralization. Meanwhile, the amount of revenues derived from local potential resources by region can be seen from the measure of potential degree areas of tax / non-tax revenue to total revenue. While the dependence of regional financial receipts to central government can be seen from how big the number of general allocation fund (DAU) and special allocation fund (DAK) on total revenue, and it is called degree of dependence.

The figure 5.1 shows the degree of fiscal decentralization, the degree of potential fiscal areas and degree of local dependence on central government.

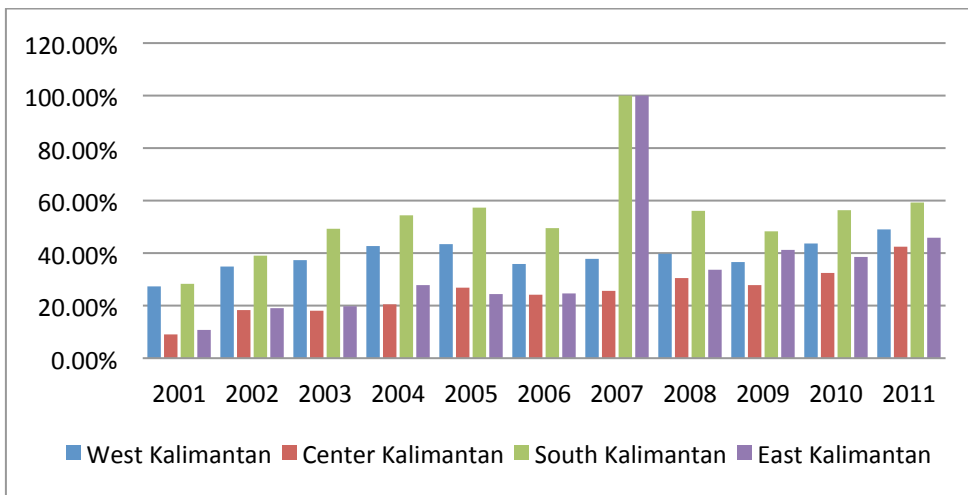
Figure 5.1. The Average of Degree of Fiscal Decentralization, Degree of Potential Fiscal Area, and Degree of Dependence in provinces in Kalimantan, period 2001-2011 (%)



Source: Author's own illustration based on the Directorate General of Fiscal Balance (DJPK)

We can measure the region's financial performance to view local capacity in implementing regional autonomy. Musgrave and Musgrave (1991) used the degree of fiscal decentralization to measure financial performance.

Figure 5.2. Degree of Fiscal Decentralization in provinces in Kalimantan, period 2001-2011 (%)

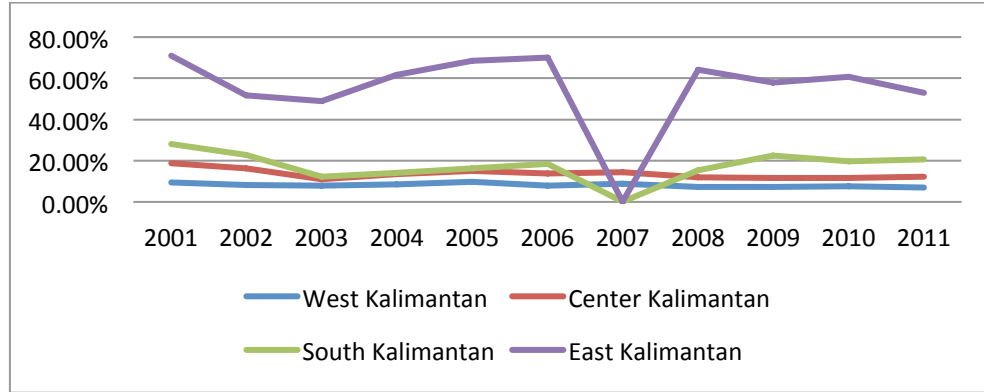


Source: Author's own illustration based on the Directorate General of Fiscal Balance (DJPK)

Between 2001 and 2011, the average of fiscal decentralization degree in provinces in Kalimantan is 38.39%. According to the measure of degree of fiscal decentralization by a team from Social and Politic Gajah Mada University, the result is in the average category. This indicates the ability of local government to increase their local revenue in order to get better finance for development. South Kalimantan is the province which has very good degree of fiscal decentralization about 54%. However, the smallest percentage degree of fiscal decentralization is Central Kalimantan with 25.10% and has fair category. Mean-

while, West Kalimantan and East Kalimantan are in average category with 30% - 40% range of degree.

Figure 5.3 Degree of Potential in provinces in Kalimantan, period 2001-2011 (%)

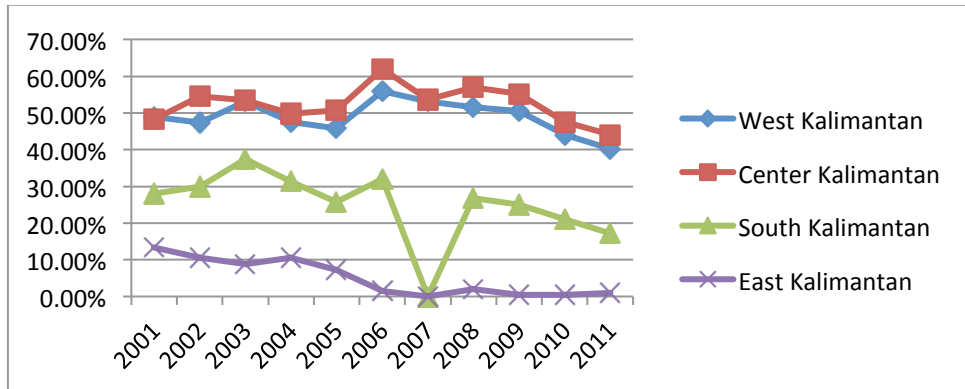


Source: Author's own data proceed based on the Directorate General of Fiscal Balance (DJPK)

Furthermore, regional own revenue (PAD) is source from local potential and describe how large of an area can explore their potential source. It can be seen that the average of degree of regional potential is 23.57% in provinces in Kalimantan. From the value, the degrees of potential fiscal areas of provinces are in the fair category. Province which has high degree of potential fiscal area is East Kalimantan with 55.21%. This is because East Kalimantan is one of the provinces that has high oil and mining companies in Indonesia. Meanwhile, Central Kalimantan and South Kalimantan in the category less with range of degree between 10% - 20%, and West Kalimantan is in category very less with 8.13%. This is because the potential of West Kalimantan Barat is mainly in trade, hotel, and restaurant sectors, not natural resources.

Moreover, most provinces in Kalimantan still have high dependence on central government. It can be seen from their degree of dependence from central government that Central Kalimantan and West Kalimantan with 54.41% and 48.91%. This means West Kalimantan and Central Kalimantan are still dependence with sharing revenue fund from central government. However, the degree of dependence shows that Central Kalimantan is only 5.07% dependent on from central government. This is happened because Central Kalimantan has a lot of natural resources especially in coal and oil. This sector is dominated in East Kalimantan. After that, it is followed by South Kalimantan in 24.94% for degree of dependence from central government because this province is dominated in agriculture, trade, hotel and restaurant (PHR) sectors.

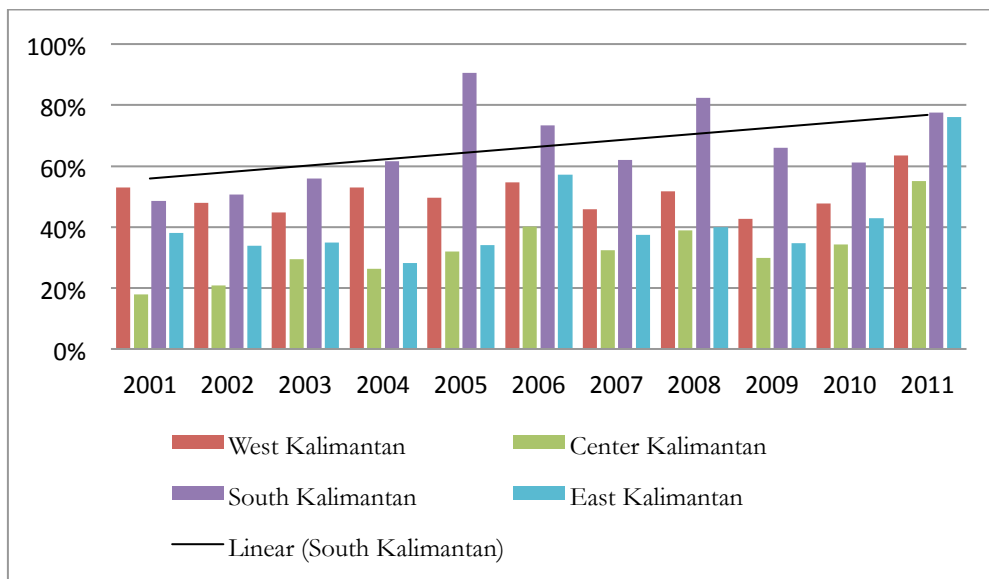
Figure 5.4 Degree of Dependence from Central in provinces in Kalimantan, period 2001-2011 (%)



Source: Author's own data proceed based on the Directorate General of Fiscal Balance (DJPK)

Another measure for measurement degree of independence region is comparing local revenue (PAD) with total regional expenditure (Halim, 2007). It can be seen from figure 5.2 and table 5.1 which show degrees of regional independence and average of degree of regional independence in provinces in Kalimantan period 2001 – 2011, which is measured by share of local revenue (PAD) proportion to total regional expenditure.

Figure 5.5 Degree of Regional Independence provinces in Kalimantan period 2001-2011



Source: Author's own illustration based on the Directorate General of Fiscal Balance (DJPK)

From the table 5.1, the average of degree of regional independence is low in rate with 47.5%. It is low in rate of degree of regional independence and for the pattern relationship with consultative. Consultative is central government intervention has begun reduced because the region is considered little able to implement autonomy (Paul Hersey and Kenneth Blanchard in Halim (2008)). It can be said that provinces in Kalimantan step by step already improve their local own revenue (PAD) and not too dependent with central government.

Even though the average percentage of degree of independent provinces in Kalimantan is high, but from degree of dependence South Kalimantan is the highest degree of regional independence with 66% and it is followed by West Kalimantan with 50%. The lowest degree of regional independence is Central Kalimantan with 32%.

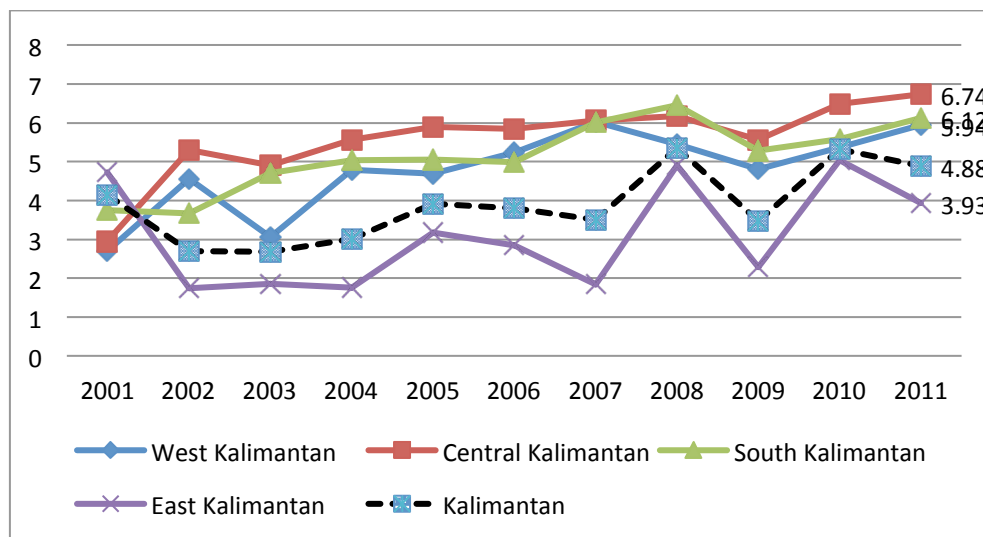
Table 5.1 The Average of Degree of Regional Independence provinces in Kalimantan period 2001 – 2011

	West Kalimantan	Central Kalimantan	South Kalimantan	East Kalimantan
Average	50%	32%	66%	42%

Source: Author's own data proceed based on the Directorate General of Fiscal Balance (DJPK)

5.1.2 Economic Growth (GDRP)

Figure 5.6 GDRP Growth Rate of provinces in Kalimantan period 2001-2011



Source: Author's own illustration based on Indonesia Bureau of Statistic (BPS)

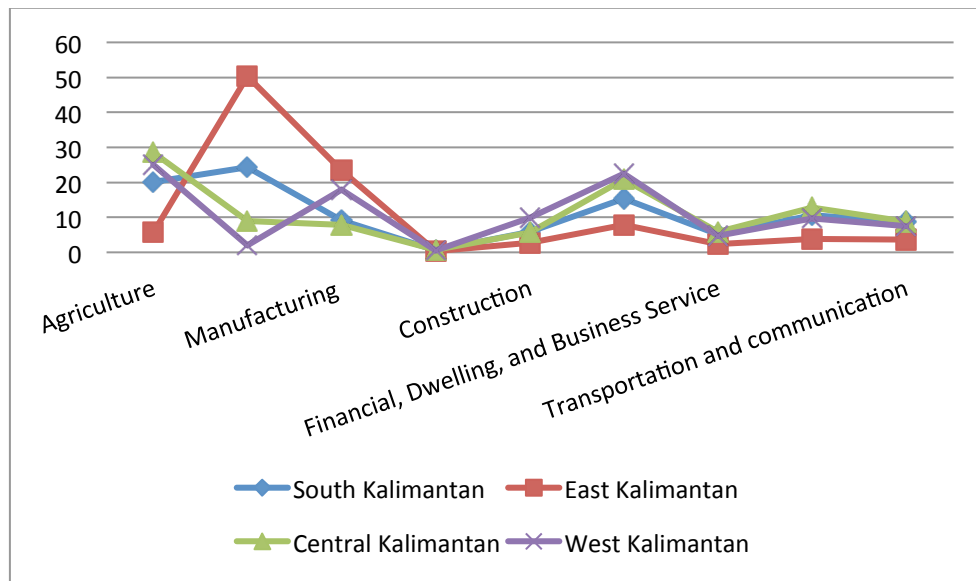
Table 5.2 GDRP Growth in Kalimantan Province period 2001 - 2011

Province	2001 (%)	2011 (%)
West Kalimantan	2.69	5.94
Central Kalimantan	2.95	6.74
South Kalimantan	3.74	6.12
East Kalimantan	4.73	3.93
Kalimantan	4.15	4.88

Source: Indonesia Bureau of Statistic (BPS)

The impact of the crisis in the US and Europe gave a little impact on economy growth in Indonesia. It can be seen that GDRP growth rate in provinces of Kalimantan down to 2.28% for East Kalimantan, and above 4% for others. But, this condition was not seen in the GDRP growth in each province. The graph showed that GDRP growth increased provinces in Kalimantan.

Figure 5.7 GDRP at Current Price by Business Sectors in Provinces in Kalimantan 2011



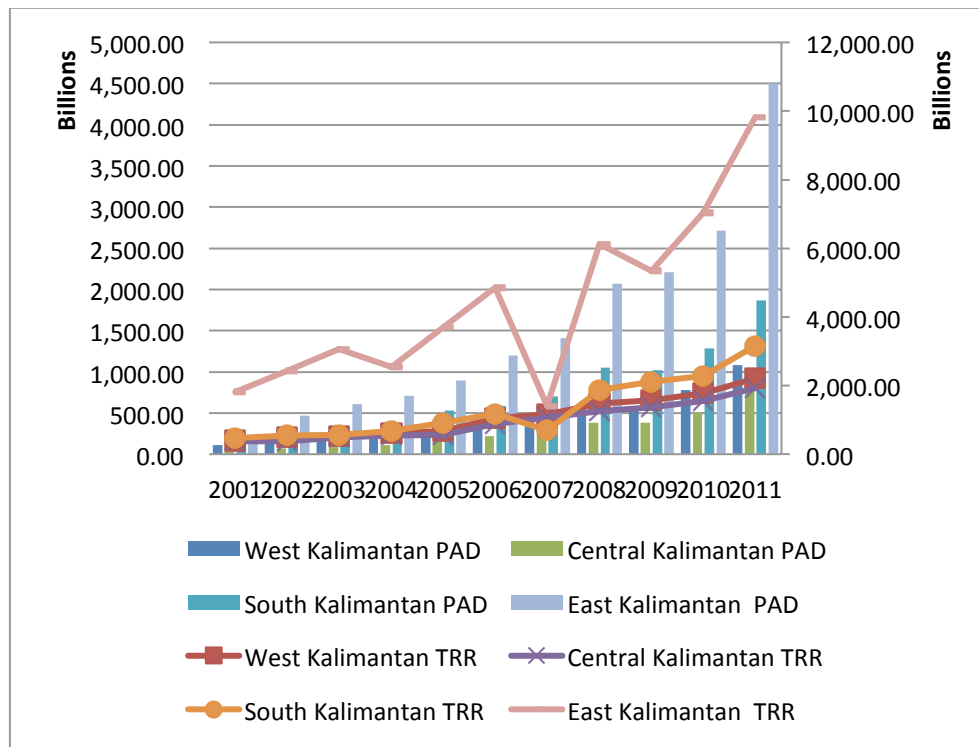
Source: Author's own illustration based on Indonesia Bureau Statistic (2011)

Agricultural sector is still dominated sector of economic growth in Indonesia provinces. For provinces in Kalimantan, West Kalimantan, Central Kalimantan, and South Kalimantan are dominated by agricultural sector; trade, hotel, and restaurant (PHR) sector; and services sector; only East Kalimantan is dominated by mining sector. Rice, rubber, and oil palm are dominated in agricultural sector, especially in West Kalimantan and Central Kalimantan. Oil and coal are dominated in mining sector, especially in East Kalimantan and South Kalimantan. For trade, hotel and restaurant sector; domestic trade is dominated rather than exports/ imports because of strong purchasing from society especially near the holidays in Indonesia like Eid Fitri, Christmas, Gong Xi Fat Chai celebration, and so on.

5.1.3 Revenue Side

Another source of local government incomes is local own revenue (PAD). The value of local own revenue (PAD) in each province shows an increase in nominal terms and in percentage; it shows the contribution of local own revenue (PAD) to total regional revenues in each province in Kalimantan is significant increase compared with the first implementation of fiscal decentralization in 2001 as shown in Table 5.4

Figure 5.8 Local Own revenue (PAD) and Total Regional Revenue (TRR) in provinces in Kalimantan



Source: Author’s illustration based on the Directorate General of Fiscal Balance (DJPK)

From Table 5.4 shows the total nominal revenue increased throughout the provinces in Kalimantan from 3.052.862,32 million rupiah to 17.091.731,00 million rupiah in 2011. It can be said that the contribution of local own revenue (PAD) to total regional revenue has significant changes which is in 2001 only 18.84% become 49.17% in 2011. Moreover, there are two provinces that experienced sharp increased, Central Kalimantan and East Kalimantan.

Table 5.3 Local own revenue (PAD) Progress Report and its Contribution to Total Regional Revenue provinces in Kalimantan period 2001 – 2011

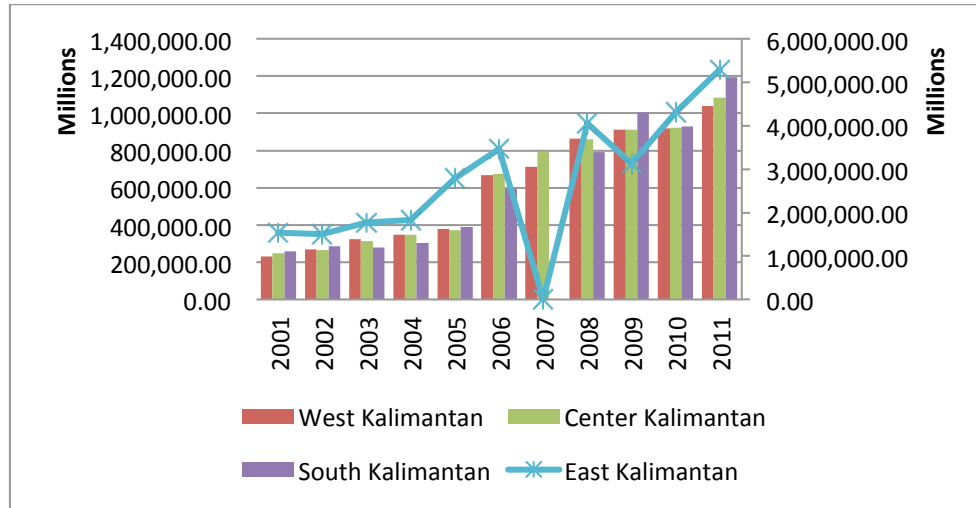
Provinces	2001 (million)		2011 (million)	
West Kalimantan	Rp. 397.314,46	27.23%	Rp. 2.202.177,00	49.06%
Central Kalimantan	Rp. 373.889,66	9.15%	Rp. 1.921.945,00	42.42%
South Kalimantan	Rp. 463.132,20	28.22%	Rp. 3.148.043,00	59.36%
East Kalimantan	Rp. 1.818.526,00	10.76%	Rp. 9.819.566,00	45.86%
Total	Rp. 3.052.862,32	18.84%	Rp. 17.091.731,00	49.17%

Source: The Directorate General of Fiscal Balance (DJPK), period 2001 – 2011, data processed

The dependence of region on central government could be due to lack of local capability in digging up the potential of regions as well as managing the potential of region. Other possibilities the provinces still dependence with central

government are less investment, inadequate in science and technology, and lack of human resources in provinces in Kalimantan, so the potentials cannot be used maximally.

Figure 5.9 Balancing Fund of provinces in Kalimantan period 2001 – 2011.



Source: Author's illustration based on the Directorate General of Fiscal Balance (DJPK)

From the figure 5.9, it shows the fund from central government to provinces in Kalimantan has increase significantly since 2001 to 2011. At the beginning of fiscal decentralization, central government was transfer 231.341,88 million rupiah in 2001 to local government and it was increased to 1.037.860.00 million rupiah in 2011. However, the percentage of contribution balancing fund to total revenue has decreased. This is indicated local government has been able to reduce the dependence from central government. According to the amount of financial support by central government to local government, it is expected that local government can spend the balancing fund based on priority and local needs, so local government administration and public services will be more effective and efficient.

Table 5.4 Balancing Fund Progress Report and its Contribution to Total Regional Revenue provinces in Kalimantan period 2001 – 2011

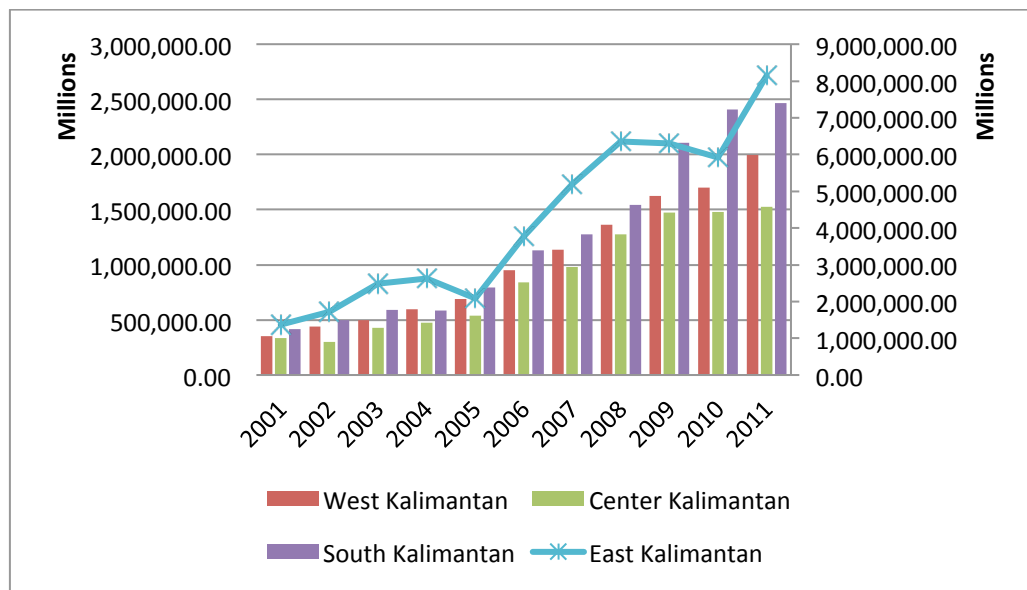
Provinces	2001 (million)		2011 (million)	
West Kalimantan	Rp. 231.341,88	58.23%	Rp. 1.037.860.00	47.13%
Central Kalimantan	Rp. 249.920,43	66.84%	Rp. 1.083.088,00	56.35%
South Kalimantan	Rp. 259.216,62	55.97%	Rp. 1.195.565,00	37.98%
East Kalimantan	Rp. 1.532.601,57	84.28%	Rp. 5.295.876,00	53.93%
Total / Average	Rp. 2.273.080,50	66.33%	Rp. 8.612.389.00	56.12%

Source: The Directorate General of Fiscal Balance (DJPK), period 2001 – 2011, data processed

5.1.4 Expenditure Side

Figure 5.10 shows the realisation of expenditure each province in Kalimantan period 2001-2011. Based on the data, high in amount of total regional revenue along implementation of fiscal decentralization in Indonesia, the allocation and realization of government expenditure each province in Kalimantan will also increase. This condition is expected to provide benefits for economic growth; and the allocation of government expenditure is aims to increase public services. The result shows in figure 5.

Figure 5. 10 Expenditure Each Province in Kalimantan period 2001 - 2011



Source: Author's illustration based on the Directorate General of Fiscal Balance (DJPK)

East Kalimantan is province in the beginning of fiscal decentralization has spent substantial fund compare with other provinces. Generally, the highest government expenditure is from routine expenditure rather than development expenditure such as official expenditure. Therefore, the expected in the future that development expenditure will increase to spend the fund for society welfare and economy development.

5.2 Analysis the Model

In this part, it is presented the result of estimation based in three approaches of fiscal decentralization, revenue, and expenditure indicator which are used in this paper.

5.2.1 Finding Based on Autonomy Indicator

Based on the regression result between OLS, FE and RE, and using F test and Hausman Test, Fixed Effect model is selected because the result of Prob F < alfa (10%) and rejected Ho based on hypothesis. The results from Hausman test are founded Chi Square values is 38.58 with probability is 0.0000 or less than $\alpha = 10\%$.

Tabel 5.5 The Estimation of model Fiscal Decentralization Autonomy (FD 1)

Dependent Variable : per Capita GDRP			
Variables	OLS	Fixed Effect	Random Effect
FD indicator 1 (Autonomy)	2.6733* (1.4550)	3.8201*** (0.9221)	2.6733* (1.4550)
Initial GDRP	0.0615* (0.0332)	0.7509*** (0.1045)	0.0615* (0.0332)
Population	-0.4383 (1.0817)	-1.0396** (0.4940)	-0.4383 (1.0817)
Employment	1.0236* (0.5404)	0.6575** (0.2494)	1.0236* (0.05404)
Investment	0.0146 (0.0117)	0.0065 (0.0054)	0.0146 (0.0117)
Constant	12.1800 (1.5571)	-7.0710*** (1.8419)	12.1800*** (1.5572)
Number Observation	44	44	44
R-Squared	0.3017	0.7934	0.3017

Source: own computation based on Provinces in Kalimantan dataset from 2001 – 2011

Note: Standard errors are showed in parentheses

Level of significance is indicated by ***, **, and * indicate 1, 5, 10% significance level respectively.

5.2.2 Finding Based on Revenue Indicator (FD 2)

Based on the regression result between OLS, FE and RE, and using F test and Hausman Test, Fixed Effect model is selected because the result of Prob F < alfa (10%) and accept Ho based on hypothesis. The results from Hausman test are founded Chi Square values is 25.79 with probability is 0.0001 or less than $\alpha = 10\%$.

Tabel 5.6 The Estimation of model Fiscal Decentralization Revenue (FD 2)

Dependent Variable : per Capita GDRP			
Variables	OLS	Fixed Effect	Random Effect
FD indicator 2 (Revenue)	-1.0845** (0.4581)	-0.8472** (0.3944)	-1.0845** (0.4581)
Initial GDRP	0.2043** (0.0868)	0.0236 (0.0886)	0.2043** (0.0868)
Population	-1.1717*** (0.1330)	-1.0666*** (0.1205)	-1.1717*** (0.1330)
Employment	0.1899** (0.0721)	0.1993** (0.0613)	0.1899** (0.0721)
Investment	0.0027* (0.0015)	0.0024* (0.0013)	0.0027* (0.0015)
Constant	0.0432*** (0.0042)	0.0449*** (0.0036)	0.0432*** (0.0042)
Number Observation	44	44	44
R-Squared	0.7556	0.7466	0.7556

Source: own computation based on Provinces in Kalimantan dataset from 2001 – 2011

Note: Standard errors are showed in parentheses

Level of significance is indicated by ***, **, and * indicate 1, 5, 10% significance level respectively.

5.2.3 Finding Based on Expenditure Indicator (FD3)

Based on the regression result between OLS, FE and RE, and using F test and Hausman Test, Fixed Effect model is selected because the result of Prob F < alfa (10%) and rejected Ho based on hypothesis. The results from Hausman test are founded Chi Square values is 11.75 with probability is 0.0384 or less than $\alpha = 10\%$.

Tabel 5.7 The Estimation of model Fiscal Decentralization Expenditure (FD 3)

Dependent Variable : per capita GDRP			
Variables	OLS	Fixed Effect	Random Effect
FD Indicator 3 (Expenditure)	1.3785 (3.8471)	5.0816* (2.9783)	1.3785 (3.8471)
Initial GDRP	0.01950 (0.1027)	0.6335** (0.1822)	0.0195 (0.1027)
Population	-0.3280 (1.1303)	-1.0034* (0.5886)	0.3280 (1.1303)
Employment	1.0305* (0.5662)	0.7069** (0.2994)	1.0305* (0.5662)
Investment	0.0159 (0.01259)	0.0060 (0.0067)	0.0159 (0.01259)
Constant	14.3046*** (1.6789)	1.4051 (0.1.9434)	14.3046*** (1.6789)
Number Observation	44	44	44
R-Squared	0.2353	0.7466	0.2353

Source: own computation based on Provinces in Kalimantan dataset from 2001 – 2011

Note: Standard errors are showed in parentheses

Level of significance is indicated by ***, **, and * indicate 1, 5, 10% significance level respectively.

5.3. Result of Estimation Model

This part will shows the result of panel data regression with three types of fiscal decentralization. From test selection based on F- test and Hausman test to three types of fiscal decentralization, those test just constructed for Fixed Effect model of each types of fiscal decentralization; and two models namely model using fiscal indicator of autonomy (FD 1) and fiscal indicator of expenditure (FD 3) give positive and significant result for coefficient of fiscal indicator variable. Moreover, the results both of indicators are expected, the implementation of fiscal decentralization is giving positive effect on regional economic growth. Table 5 report the result of Fixed Effect method from both model of fiscal decentralization.

Table 5.8 Estimation model from fiscal decentralization indicator of Autonomy, and Expenditure.

Dependent Variable: per capita GDRP		
Variables	Fixed Effect Model FD1 Autonomy	Fixed Effect Model FD3 Expenditure
FD indicator	3.8201*** (0.9221)	5.0816* (2.9783)
Initial GDRP	0.7509*** (0.1045)	0.6335** (0.1822)
Population	-1.0396** (0.4940)	-1.0034* (0.5886)
Employment	0.6575** (0.2494)	0.7069** (0.2994)
Investment	0.0065 (0.0054)	0.0060 (0.0067)
Constant	-7.0710*** (1.8419)	1.4051 (0.1.9434)
Number Observation	44	44
R-Squared	0.7934	0.7066

Source: own computation based on Provinces in Kalimantan dataset from 2001 – 2011

Note: Standard errors are showed in parentheses

Level of significance is indicated by ***, **, and * indicate 1%, 5%, 10% significance level respectively.

Firstly, column (1) represents fiscal decentralization indicator of autonomy (FD1). From the result shows the effect of fiscal decentralization in provinces in Kalimantan. R-squared in the model estimation result is 0.7934, which is indicated that 79.34% of fiscal decentralization each province in Kalimantan can be explained by the model. Moreover, based on t-test result, it can be seen that fiscal decentralization indicator 1 (autonomy) give significant result for variable FD1, initial GDRP, population, and employment; while investment is not significant but give positive effect for economic growth. The coefficient of fiscal decentralization indicator of autonomy is 3,821 with positive relationship and significant. The value can be interpreted that increase the level of fiscal decentralization in terms of autonomy fiscal decentralization indicator by 1%, it might give impact to rise GDRP as much 3.82% keeping others variable constant.

Another variables that determinant of growth also indicate give significant contribution to GDRP. As variables control be provides have positive and significant contribution for Initial GDRP and Employment. By keeping other variables constant, the increase change of Initial GDRP by 1% might affect increase GDRP 0.75%. For employment, when there is an increase 5% of employment, this will increase GDRP around 0.65% for next year. In addition, only investment is variable with not significantly affect GDRP. On the other hand, population variable has negative affect for GDRP, whereas 5% increase of population will bringing economic decline in terms of GDRP by 1.03%.

The second column (2) shows fiscal decentralization indicator of expenditure (FD 3). The t-test result shows that variables of initial GDRP and population

are significant to dependent variable. But variables of FD indicator of expenditure (FD 3) and investment are not significant to dependent variable. Moreover, R-squared in the model estimation result is 0.7066, which that variation of variables independent can show variation dependent variable by 70.66%. The result indicator of autonomy is 5.0816 with positive relationship and significant. The value can be interpreted that increase the level of fiscal decentralization in terms of autonomy fiscal decentralization indicator by 1%, it might give impact increasing of GDRP as much 5.08% keeping others variable constant.

Other variables that determinant of growth are also indicated give significant contribution to GDRP. The coefficient be provides have positive and significant contribution for Initial GDRP and Employment. By holding other variables constant, the increase change of Initial GDRP by 5% might affect increase GDRP 0.63%. For employment, when there is an increase 5% of employment, this will increase GDRP around 0.70% for next year. In addition, only investment is variable with not significantly affect GDRP. However, population variable has negative affect for GDRP, whereas 10% increase of population will bringing economic decline in terms of GDRP by 1.00%.

To summarize, based on three types of indicator of fiscal decentralization, two fiscal decentralization indicators result provided evidence that fiscal decentralization contributed regional economic growth on each province in Kalimantan and had positive relationship between fiscal decentralization and regional economic growth. However, this is not guarantee that fiscal decentralization directly affected fiscal decentralization in Indonesia. It is happened because this paper only included four provinces each province in Kalimantan.

5.4 Discussion

5.4.1 The Effect of regional fiscal policy on regional economy growth in provinces in Kalimantan.

The estimation results from econometric regression model shows that implementation of fiscal decentralization in Indonesia since 2001 generally giving positive impact for economic growth in provinces in Kalimantan. It shows from the estimation of regression where indicator of autonomy and indicator of expenditure give positive and significant results.

The explanation Autonomy indicator (FD 1) and Expenditure indicator (FD 3) gave results positive relationship between fiscal decentralization and economic development.

To begin with, fiscal decentralization indicator of autonomy (FD 1) is ratio of local own revenue to total regional revenue. The result of regression shows positive and significant result on economic performance in provinces in Kalimantan. The positive linkage between regional autonomy and economic growth represent that local own revenue can fund development spending, which is important investment for local economic growth. Moreover, Regional own revenue is ratio of total own revenue to state revenue. The positive linkage between regional own revenue indicator and regional economic growth represent increasing in local own revenue after implementation fiscal decentralization gave incentive and flexibility for provinces to increase their participation in economic growth to make local development policies and program that can provide economic growth in each provinces.

The positive relation between fiscal decentralization and economic growth can be explained because most of provinces still dependence with balancing fund from central government. Moreover, high in local own revenue (PAD) as representative of regional autonomy indicated the provinces in Kalimantan have source of funding to fund their development expenditure, where development expenditure is part of investment. In addition, high estimation result of autonomy indicated increasing in fiscal independence and high contribution on fiscal autonomy each province in Kalimantan (Hariyanto 2012)

In the second place, fiscal decentralization indicator of Expenditure (FD 3) is ratio of total local expenditure to total state expenditure. It shows positive relationship with regional economic growth because of positive sign and significant in estimation regression result. This result indicated that increasing in ratio of expenditure each province in Kalimantan and giving positive effect on regional economic growth since 2001 to 2011. Moreover, increasing in local government expenditure reflected increasing in public investment and giving direct impact on economic each provinces in Kalimantan. In addition, autonomy in fiscal management makes local government can allocate their funds according to population needs and regional development.

5.4.2 The effect of control variables on regional economic growth in provinces in Kalimantan.

To control the effect of fiscal decentralization on economic growth, this research paper is used initial GDRP, population, employment, and investment as control variables. Based on previous studies, those of control variables regarded as determinant variables influences significant on economic growth.

Firstly, Initial GDRP has positive and significant sign. The positive relationship between initial GDRP with economic growth is the same result with the result from Akai and Sakata (2005) study, where initial GDRP is important determinant that give positive influence with economic growth.

Secondly, population regression coefficient value is negative and significant. The increase of population is directly related to economic growth of a region. Negative sign from population in regression shows negative impact of the large number of population to regional economic growth in provinces in Kalimantan. Most of population with low education will slow down the process of development and economic growth due to the low educational population in Kalimantan will be left with other provinces in Indonesia. Furthermore, a large number of populations must be balance with the availability of jobs, because if it is not balanced will cause unemployment. In addition, with the large number of population means the high population growth whereas high population growth will require a great effort to maintain the level of welfare of people and if it is not prosperous will lead to poverty and food shortages (Mankiw, 2003).

The next coefficient is employment that have positive sign and significant. This means that employment gives positive affect for economic growth. This result is expected like Akai and Sakata (2002) result. The amount of productive employee must be balanced with the quality of employee in order to support the economic requirement each province in Kalimantan. If this is not balanced, it will give negative impact in the future, such as decline in labor productivity and decries in economic input.

And to conclude, the proportion of investment to GDRP per capita in provinces in Kalimantan is directly proportional with regional economic growth, but statistically is not significant. This suggests that investment occurring in several regions in provinces in Kalimantan requires enough long time periods to return back capital investment incurred as predicted by Ashipala and Haimbodi (2003) in Widodo (2012). To look another way, the investment made by local government is not productive investment and it does not have an impact on economic growth.

CHAPTER 6

Conclusion

Fiscal decentralization policies aim to boost regional economy and decrease imbalance of revenue between provinces in Indonesia. For developing countries, the impact of fiscal decentralization on regional economic growth has become an important policy issues. Since fiscal decentralization is implementing in Indonesia in 2001, the economic growth increase significantly in each province and region in Kalimantan.

This research is mainly intended to investigate and analyse the effect of regional fiscal policy (fiscal decentralization) on regional economic growth in provinces in Kalimantan (West Kalimantan, Central Kalimantan, South Kalimantan, and East Kalimantan). According to the dynamic of regional finance, fiscal performance in provinces in Kalimantan is recorded quite significant in period 2001 – 2011. It can be seen from the average value of degree of fiscal decentralization by 38.39%, the degree of regional fiscal potential is 23.57%, and degree of dependence from central government is 32.83%. South Kalimantan is a province with good fiscal performance, followed by East Kalimantan, West Kalimantan, and Central Kalimantan.

The Structure of regional revenue in provinces in Kalimantan period 2001 – 2011 is still dominated by revenue from central government or it is called sharing revenue, particularly in general allocation fund (DAU). This is indicating provinces in Kalimantan still depend on central government, except East Kalimantan with 5.07% degree of dependence from central government. However, regional own revenue (PAD) shows increase significantly along period 2001 to 2011, which is fiscal decentralization giving positive effect to economic growth in provinces in Kalimantan. This result is in accordance with the result from Akai and Sakata (2002) and Wibowo (2208).

By using panel data with fixed effect model, the estimation result from this study asserted that fiscal decentralization in each province in Kalimantan gave positive effect on regional economic growth and regional development during period 2001-2011. This result strengthened the theory of fiscal decentralization and previous studies (Akai and Sakata 2002, Wibowo 2008). It is seen that autonomy indicator and expenditure indicator are used as proxy of fiscal decentralization shows positive sign and is significant. Expected to maintain fiscal decentralization will increase the national income and economic, increase the national income and economic growth, improve well-being of the community, and be able to allocate fund for the district or economic.

References

- Akai, Nabuo, and Masayo Sakata (2002) Fiscal Decentralization contributes to economic growth: evidence from state-level cross section data for the United States. *Journal of Urban Economics*. 52, pp. 93-108.
- Alm, James (2011) Do State Policies Affect State Economic Growth?. *Tulane Economics Working Paper Series*
- Ardhiyansyah, Bayu (2010) Permasalahan Dalam Desentralisasi Fiskal. <<http://www.scribd.com/doc/31770230/Permasalahan-dalam-Desentralisasi-Fiskal>>
- Bahl, Roy (2002) Fiscal Decentralization in Indonesia: The First Year in Review and the Challenges Ahead. USAID Indonesia.
- Bird, Richard M. and Vaillancourt, Francois (1998) Fiscal Decentralization in Developing Countries. *Cambridge University Press*, p. 1-48.
- Davoodi, H., and Zou, Heng-Fu (1997) Fiscal Decentralization and Economic Growth: A Cross-Country Study. *Journal of Urban Economics*. Article No. UE972042. (43), pp. 244 - 257
- Fisher, C. R.. (2007) The Effects of State and Local Public Services on Economic Development. *New England Economic Review*.
- Ghani, E. et. al. (2012) Is decentralization helping the poor regions? Accessed 10 April 2012. <<http://www.voxeu.org/article/decentralisation-helping-poorest-regions-evidence-india>>
- Goesniadhie, Kusnu S. (2012) Analisis Mewujudkan Desentralisasi dan Otonomi Daerah. Accessed 27 January 2012. <<http://kgsc.wordpress.com/2012/01/27/analisis-mewujudkan-desentralisasi-dan-otonomi-daerah/>>
- Halim, Abdul (2008) *Akuntansi Keuangan Daerah*. Akuntansi Sektor Publik, Akt.Salemba Empat. Jakarta.
- Hariyanto, D.T (2012) 'Dampak Desentralisasi Fiskal Terhadap Pertumbuhan Ekonomi Daerah di Provinsi Jambi'. Magister of Planning and Public Policy. Jakarta: Universitas Indonesia.
- Lin, J.Y. and Liu, Z (2000) Fiscal Decentralization and Economic Growth in China. *Economic Development and Culture Change*. 49 (1). ABI/INFORM Global, pg. 1.
- Jin, J. and Zou, H. (2005) Fiscal decentralization, revenue and expenditure assignments, and growth in China. *Journal of Asian Economics*, 16(6), pp. 1047-1064.
- Kuznets, Simon. (1973) Modern Economic Growth: Finding and Reflections. *The American Economic Review*. Vol. 63, No.3 (Jun), pp. 247 -258.
- Mangunkusumo, S. C. (2012) Analysis the effect of local revenue and general fund allocation of regional expenditure (study cases in the district / city of Java Province region period 2009 – 2011). *Departement of Accounting Faculty of Economics, Gunadharma University*.
- Mankiw, N. Gregory (2003) Teori Makro Ekonomi (Macroeconomics Theory). Jakarta: Erlangga.

- Mungkasa, Oswar. Desentralisasi dan Otonomi Daerah di Indonesia: Konsep, Pencapaian dan Agenda Kedepan.
<http://www.academia.edu/2759012/Desentralisasi_dan_Otonomi_Daerah_di_Indonesia_Konsep_Pencapaian_dan_Agenda_Kedepan>
- Muslianti, Dwi. (2011)' Dampak Kebijakan Fiskal Daerah Terhadap Kemiskinan di Indonesia pada Masa Desentralisasi Fiskal' Sekolah Pascasarjana. Bogor: Institute of Agriculture.
- Oates, Wallace E. (1999) An Essay on Fiscal Federalism. *Journal of Economic Literature* 37, no. 3:1120.
- Putro. N. S. (2009) Pengaruh Pertumbuhan Ekonomi, Pendapatan Asli Daerah, dan Dana Alokasi Umum terhadap Pengalokasian Anggaran Belanja Modal (Studi Kasus pada Kabupaten/Kota di Provinsi Jawa Tengah. *Fakultas Ekonomi Universitas Diponegoro*.
- Rafiq, S., and Zeufack, A. (2012) Fiscal Multiplier over the Growth Cycle (evidence from Malaysia). *The World Bank, East Asia and Pasific Region, Poverty Reduction and Economic Management Unit*.
- Schaltegger, C. A. et.al. (2006) Growth effects of public expenditure on state and local level: evidence from a sample rich governments. *Applied Economics*, 38(10).
- Setiyawati, A., et.al, (2007) Analisis Pengaruh PAD, DAU, DAK, dan Belanja Pembangunan terhadap Pertumbuhan Ekonomi, Kemiskinan, dan Pengangguran: Pendekatan Analisis Jalur. *Jurnal Akuntansi dan Keuangan Indonesia*, 4(2), pp. 211-228.
- Suparno (2010) Desentralisasi Fiskal dan Pengaruhnya terhadap Perekonomian di Indoneisa
- Surjaningsih, N., et.al, (2012) Dampak Kebijakan Fiskal terhadap Output dan Inflasi. *Buletin Ekonomi Moneter dan Perbankan*.
- The Directorate General Regional Autonomy. Indonesia Law No. 32/2004 on Regional Government. Jakarta.
- The Directorate General Regional Autonomy. Indonesia Law No. 33/2004 on Fiscal Balance between Central Government and Local Government. Jakarta
- Wasylenko, M. (2007) Taxation and Economic Development: The State of Economic Literature. *New England Economic Review*.
- Wibowo, Puji. (2008) Mencermati Dampak Desentralisasi Fiskal terhadap Pertumbuhan Ekonomi Daerah. *Jurnal Keuangan Publik*. Vol.5, Pp. 55 - 83.
- Yulindra, Sonni (2012) 'The Effect of Fiscal Decentralization on Local Economic Growth in Sumatera Barat Province', MA Thesis. The Hague: International Institute of Social Studies.
- Zhang, T. and H. Zou (1998) Fiscal Decentralization, Public Spending, and Economic Growth in China. *Journal of Public Expenditure*, (67) pp. 221-240.

APPENDICES

Appendix 1 List of Sample Provinces in Kalimantan

No	Name of Province
1	West Kalimantan
2	Central Kalimantan
3	South Kalimantan
4	East Kalimantan

Appendix 2 Table Periods of Decentralization Policies in Indonesia

Period	Principle of Autonomy and Juridical Foundation
1903	Centralization; Decentralization Wet (1903); Local Radenordonantie No. 181/1905
1942 - 1945	Centralization; Osamu Sorei No. 27/2602 (1942)
1945 - 1959	Democratize; Autonomy; Decentralization; Law no. 1/1945; Law no. 22/1948; Law no. 1/1957
1959 - 1966	Authorities ; Centralistic; Deconcentration; President Determination no.18/1959; Law no. 18/1965
1966 - 1969/1971	Democratize; Autonomy; Decentralization; TAP MPRS No. 21 / 1966
1971 - 1998	Authorities; Centralistic, Deconcentration; TAP MPRS No. IV/1973; Law No. 5/1974; Law No. 5/1979
1998 - Now	Authoritarian; Centralistic; Deconcentration; TAP MPRS No. IV/1998; Law no. 22/1999; Law no. 25/1999; Law no. 32/2004; Law no. 33/2004

Source: According to Hossein (2002) in Mungkasa.

Appendix 3 STATA result pf Panel Data for Fiscal Decentralization Indicator of Autonomy (FD 1)

Ordinary Pool Square (OLS)

```
. reg lngdrp lnfdauto lninitialgdrp lnpop_lag lnemp_lag lninvest_lag
```

Source	SS	df	MS			
Model	.25911684	5	.051823368	Number of obs =	40	
Residual	.599660818	34	.017637083	F(5, 34) =	2.94	
Total	.858777658	39	.02201994	Prob > F =	0.0261	
				R-squared =	0.3017	
				Adj R-squared =	0.1990	
				Root MSE =	.1328	

lngdrp	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
lnfdauto	2.673323	1.455077	1.84	0.075	-.2837505	5.630396
lninitialg-p	.0615819	.0332861	1.85	0.073	-.0060636	.1292274
lnpop_lag	-.438351	1.081793	-0.41	0.688	-2.636819	1.760117
lnemp_lag	1.023623	.5404412	1.89	0.067	-.0746853	2.121932
lninvest_lag	.0146897	.0117727	1.25	0.221	-.0092354	.0386147
_cons	12.18001	1.557124	7.82	0.000	9.015554	15.34447

Fixed Effect (FE)

```
. xtreg lngdrp lnfdauto lninitialgdrp lnpop_lag lnemp_lag lninvest_lag, fe
```

Fixed-effects (within) regression
Group variable: id

Number of obs = 40
Number of groups = 4

R-sq: within = 0.7934
between = 0.1490
overall = 0.1370

obs per group: min = 10
avg = 10.0
max = 10

F(5, 31) = 23.81
Prob > F = 0.0000

corr(u_i, Xb) = -0.9659

lngdrp	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
lnfdauto	3.820177	.922165	4.14	0.000	1.939409	5.700945
lninitialg-p	.7509381	.1045331	7.18	0.000	.5377415	.9641348
lnpop_lag	-1.039684	.4940244	-2.10	0.044	-2.047254	-.0321149
lnemp_lag	.6575043	.2494199	2.64	0.013	.148809	1.1662
lninvest_lag	.0065511	.0054197	1.21	0.236	-.0045024	.0176045
_cons	-.0107105	1.677071	-0.01	0.995	-3.43112	3.409699

sigma_u	.55893993					
sigma_e	.06021933					
rho	.98852561	(fraction of variance due to u_i)				

F test that all u_i=0: F(3, 31) = 44.79 Prob > F = 0.0000

Random Effect

```
. xtreg lngdrp lnfdauto lninitialgdrp lnpop_lag lnemp_lag lninvest_lag, re
```

Random-effects GLS regression
Group variable: id

Number of obs = 40
Number of groups = 4

R-sq: within = 0.4525
between = 0.1190
overall = 0.3017

obs per group: min = 10
avg = 10.0
max = 10

Random effects u_i ~ Gaussian
corr(u_i, X) = 0 (assumed)

wald chi2(5) = 14.69
Prob > chi2 = 0.0118

lngdrp	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
lnfdauto	2.673323	1.455077	1.84	0.066	-.1785767	5.525222
lninitialg-p	.0615819	.0332861	1.85	0.064	-.0036576	.1268215
lnpop_lag	-.438351	1.081793	-0.41	0.685	-2.558626	1.681924
lnemp_lag	1.023623	.5404412	1.89	0.058	-.0356219	2.082869
lninvest_lag	.0146897	.0117727	1.25	0.212	-.0083844	.0377638
_cons	12.18001	1.557124	7.82	0.000	9.128104	15.23192

sigma_u	0					
sigma_e	.06021933					
rho	0	(fraction of variance due to u_i)				

Hausman Test

. hausman fe re

	Coefficients		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) fe	(B) re		
lnfdauto	3.820177	2.673323	1.146855	.
lninitialg~p	.7509381	.0615819	.6893562	.0990919
lnpop_lag	-1.039684	-.438351	-.6013332	.
lnemp_lag	.6575043	1.023623	-.3661192	.
lninvest_lag	.0065511	.0146897	-.0081386	.

b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(5) = (b-B)'[(V_b-V_B)^(-1)](b-B)
 = 38.58
 Prob>chi2 = 0.0000
 (V_b-V_B is not positive definite)

Appendix 4 STATA result pf Panel Data for Fiscal Decentralization Indicator of Revenue (FD 2)

Ordinary Least Square (OLS)

```
. reg lngdrp_l lnfdrev_l lninitialgdrp_l lnpop_l lnemp_l lninvest_l
```

Source	SS	df	MS			
Model	.031490903	5	.006298181	Number of obs =	40	
Residual	.010186513	34	.000299603	F(5, 34) =	21.02	
				Prob > F =	0.0000	
				R-squared =	0.7556	
				Adj R-squared =	0.7196	
Total	.041677416	39	.001068652	Root MSE =	.01731	

lngdrp_l	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
lnfdrev_l	-1.084501	.4581581	-2.37	0.024	-2.01559	-.1534115
lninitialg~l	.2043522	.0868031	2.35	0.024	.0279471	.3807574
lnpop_l	-1.171735	.1330863	-8.80	0.000	-1.442199	-.9012715
lnemp_l	.1899644	.0721538	2.63	0.013	.0433301	.3365986
lninvest_l	.0027232	.001554	1.75	0.089	-.0004349	.0058814
_cons	.0432649	.0042296	10.23	0.000	.0346693	.0518606

Fixed Effect

```
. xtreg lngdrp_l lnfdrev_l lninitialgdrp_l lnpop_l lnemp_l lninvest_l, fe
```

Fixed-effects (within) regression
Group variable: id

Number of obs = 40
Number of groups = 4

R-sq: within = 0.7466
between = 0.8339
overall = 0.7243

Obs per group: min = 10
avg = 10.0
max = 10

corr(u_i, Xb) = 0.2855

F(5,31) = 18.27
Prob > F = 0.0000

lngdrp_l	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
lnfdrev_l	-.8472219	.394445	-2.15	0.040	-1.651698	-.0427459
lninitialg~l	.0236507	.0886075	0.27	0.791	-.1570655	.2043669
lnpop_l	-1.066639	.1205939	-8.84	0.000	-1.312592	-.8206861
lnemp_l	.1993238	.0613963	3.25	0.003	.0741052	.3245424
lninvest_l	.0024553	.0013222	1.86	0.073	-.0002413	.005152
_cons	.0449785	.0036253	12.41	0.000	.0375847	.0523723

sigma_u = .01318786
sigma_e = .01469778
rho = .44601178 (fraction of variance due to u_i)

F test that all u_i=0: F(3, 31) = 5.38 Prob > F = 0.0042

Random Effect

```
. xtreg lngdrp_l lnfdrev_l lninitialgdrp_l lnpop_l lnemp_l lninvest_l, re
```

Random-effects GLS regression
Group variable: id

Number of obs = 40
Number of groups = 4

R-sq: within = 0.7188
between = 0.9026
overall = 0.7556

Obs per group: min = 10
avg = 10.0
max = 10

Random effects u_i ~ Gaussian
corr(u_i, X) = 0 (assumed)

Wald chi2(5) = 105.11
Prob > chi2 = 0.0000

lngdrp_l	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
lnfdrev_l	-1.084501	.4581581	-2.37	0.018	-1.982474	-.1865274
lninitialg~l	.2043522	.0868031	2.35	0.019	.0342213	.3744832
lnpop_l	-1.171735	.1330863	-8.80	0.000	-1.43258	-.9108911
lnemp_l	.1899644	.0721538	2.63	0.008	.0485455	.3313833
lninvest_l	.0027232	.001554	1.75	0.080	-.0003226	.005769
_cons	.0432649	.0042296	10.23	0.000	.034975	.0515549

sigma_u = 0
sigma_e = .01469778
rho = 0 (fraction of variance due to u_i)

Result Hausman Test

. hausman fe re

	Coefficients		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) fe	(B) re		
lnfdrev_l	-.8472219	-1.084501	.2372789	.
lninitialg~l	.0236507	.2043522	-.1807015	.0177907
lnpop_l	-1.066639	-1.171735	.1050965	.
lnemp_l	.1993238	.1899644	.0093594	.
lninvest_l	.0024553	.0027232	-.0002679	.

b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(5) = (b-B)'[(V_b-V_B)^(-1)](b-B)
 = 25.79
 Prob>chi2 = 0.0001
 (V_b-V_B is not positive definite)

Appendix 5 STATA result of Panel Data for Fiscal Decentralization Indicator of Expenditure (FD 3)

Ordinary Least Square (OLS)

```
. reg lngdrp lnfdexp lninitialgdrp lnpop_l lnemp_l lninvest_l
```

Source	SS	df	MS			
Model	.202064061	5	.040412812	Number of obs =	40	
Residual	.656713597	34	.019315106	F(5, 34) =	2.09	
Total	.858777658	39	.02201994	Prob > F =	0.0904	
				R-squared =	0.2353	
				Adj R-squared =	0.1228	
				Root MSE =	.13898	

lngdrp	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
lnfdexp	1.378568	3.847135	0.36	0.722	-6.43975	9.196887
lninitialg-p	.0195042	.102779	0.19	0.851	-.189368	.2283763
lnpop_l	-.3280402	1.130303	-0.29	0.773	-2.625092	1.969012
lnemp_l	1.030596	.5662042	1.82	0.078	-.1200694	2.181261
lninvest_l	.015957	.0125959	1.27	0.214	-.009641	.0415549
_cons	14.30466	1.678978	8.52	0.000	10.89256	17.71675

Fixed Effect

```
. xtreg lngdrp lnfdexp lninitialgdrp lnpop_l lnemp_l lninvest_l, fe
```

Fixed-effects (within) regression

Group variable: id

R-sq: within = 0.7066
between = 0.1405
overall = 0.1197

corr(u_i, Xb) = -0.9695

Number of obs = 40
Number of groups = 4
obs per group: min = 10
avg = 10.0
max = 10

F(5,31) = 14.93
Prob > F = 0.0000

lngdrp	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
lnfdexp	5.081669	2.978306	1.71	0.098	-.9926258	11.15596
lninitialg-p	.6335443	.182248	3.48	0.002	.2618471	1.005241
lnpop_l	-1.003409	.5886216	-1.70	0.098	-2.203911	.1970925
lnemp_l	.7069907	.2994199	2.36	0.025	.0963197	1.317662
lninvest_l	.0060975	.0067049	0.91	0.370	-.0075774	.0197723
_cons	1.405172	1.943448	0.72	0.475	-2.558516	5.368861
sigma_u	.5750171					
sigma_e	.0717651					
rho	.98466257	(fraction of variance due to u_i)				

F test that all u_i=0: F(3, 31) = 32.17 Prob > F = 0.0000

Random Effect

```
. xtreg lngdrp lnfdexp lninitialgdrp lnpop_l lnemp_l lninvest_l, re
```

Random-effects GLS regression

Group variable: id

R-sq: within = 0.2887
between = 0.1616
overall = 0.2353

Random effects u_i ~ Gaussian
corr(u_i, X) = 0 (assumed)

Number of obs = 40
Number of groups = 4
obs per group: min = 10
avg = 10.0
max = 10

wald chi2(5) = 10.46
Prob > chi2 = 0.0632

lngdrp	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
lnfdexp	1.378568	3.847135	0.36	0.720	-6.161677	8.918814
lninitialg-p	.0195042	.102779	0.19	0.849	-.1819391	.2209474
lnpop_l	-.3280402	1.130303	-0.29	0.772	-2.543393	1.887313
lnemp_l	1.030596	.5662042	1.82	0.069	-.0791438	2.140336
lninvest_l	.015957	.0125959	1.27	0.205	-.0087305	.0406445
_cons	14.30466	1.678978	8.52	0.000	11.01392	17.59539
sigma_u	0					
sigma_e	.0717651					
rho	0	(fraction of variance due to u_i)				

Hausman Test

. hausman fe re

	Coefficients		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) fe	(B) re		
lnfdexp	5.081669	1.378568	3.7031	.
lninitialg~p	.6335443	.0195042	.6140401	.1505018
lnpop_1	-1.003409	-.3280402	-.675369	.
lnemp_1	.7069907	1.030596	-.3236053	.
lninvest_1	.0060975	.015957	-.0098595	.

b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(5) = (b-B)'[(V_b-V_B)^(-1)](b-B)
 = 11.75
 Prob>chi2 = 0.0384
 (V_b-V_B is not positive definite)