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The Impact of Decentralization on Local Economic Development in the Context of Cambodia

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Abstract

Decentralization in Cambodia took a revolutionary turn in 2001. Through the decentralization policy, the direct election of Commune/Sangkat (CS) councils was accomplished by local residents in 1633 CSs. CS councils are equipped with substantial resources allocated from the central government to develop their jurisdictions. Since 2002, CS councils have undertaken extensive public investments to promote local economic development and eliminate poverty.

Against this background, this study examines whether the decentralization reform in Cambodia has contributed to local economic development using a panel dataset from the years 2007–2015. Least Square Dummy Variable regression models have been estimated. The independent variable used as a measure of decentralization is budget transfer from the central government to CSs, while proxy indicators of local economic development in CSs are used, such as the number of small businesses, the number of motor vehicles, the infant mortality rate and poverty rate in each CS. The results have shown that there is a positive link between intergovernmental fiscal transfers and local economic growth.

Keywords: Decentralization, Economy, Development

1. Introduction

Improving the people's quality of life is the overarching task of all governments of whatever type. Improvement cannot be achieved once and for all, but requires constant attention and effort. To this end, mustering the necessary resources is a key challenge, especially for sub-national governments. While decentralization supposedly brings more resources to the sub-national governments, it is still not clear whether or not it leads to a good quality of life. This paper addresses this crucial issue in the context of Cambodia's decentralization.

Decentralization is an effective means that has contributed greatly to the increase of economic efficiency in the provision of public goods and services (Oates 1993: 240). Local governments will provide better services and developmental efforts according to the preferences of their residents, because they are closer to the people and their services are purportedly based on the local needs, situations and geographic differences (ibid, p. 238).

Decentralization becomes a question when a country has certain economic resources in the hands

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of the national government; the government then considers how to allocate the revenue earned effectively (Balh & Linn 1992: 385). Central governments are no longer able to deal with economic issues alone, particularly in the developing countries in Asia (Smoke 2001: 3). Economic planning that has only been implemented by the central government cannot effectively respond to various economic problems and requires the involvement of local government (ibid).

Decentralization in Cambodia means that the national government provides the responsibility of management to the elected councils of sub-national governments. The councils have functions, power and resources to enable them to implement in response to the needs of local residents; the elected councils must especially be accountable to their own local people (Organic Law 2008). Decentralization reform in Cambodia officially started in 2001 at the Commune/Sangkat (CS) level, which is the lowest tier of sub-national government, and resources have been transferred from the central government to elected councils to enable the CS councils to manage those resources with their local residents to develop their own territory.

Much literature has focused on the link between decentralization and economic growth/development. However, the results have been mixed. Some have found positive links between decentralization and economic growth (Akai & Sakata 2000; Wall Oats 1993; Iimi 2005 and Stansel 2005), while others found negative relationships (Zhang & Zou 1998; Davoodi & Zou 1998 and Xie et al. 1999). The plausible reasons of different results are the differences in the selection of proxy indicators of decentralization, the unit of study, and the system for transferring budget (Faridi 2011: 2). Therefore, as there is no consistent result on the relationship between decentralization and economic growth, this paper empirically updates whether decentralization has a positive influence on local economic development.

There are a few out-of-date studies showing the positive impact of decentralization on local economic development in Cambodia, which include Tracey-White et al 2001; Tracey-White et al 2002 and Romeo & Spyckerelle 2003. The studies done by Tracey-White et al (2001) and Tracey-White et al (2002) were on the impact of the Seila Program, which was the predecessor program of decentralization in Cambodia. This means that official decentralization was not yet ready to be implemented in those years. In addition, the study done by Romeo & Spyckerelle (2003) was simply a case study observing the types of project CSs invested in that did not involve much empirical methodology. They argued that CS funds (CSF) contributed greatly to economic infrastructure, but it was too early to evaluate the decentralization reforms which fully started in 2002 at CS level.

Therefore, the objective of this study is to examine the links between decentralization and local economic development in the context of Cambodia. This empirical and updated study is useful because one of the main goals of decentralization in Cambodia is to promote local economic development. Therefore, this study will help the Cambodian government to review its decentralization reforms and to decide whether to continue them and/or what to improve. Specifically, this paper will examine the

relationship between CSF and local economic development by using panel data from 2007 to 2015 at the CS level; that is, regression analysis with a year dummy variable on the impact of CS funds on some other variables as proxy indicators for local economic development, such as the poverty rate, number of small businesses, number of motor vehicles, and lastly the infant mortality rate.

This study will thus provide more empirical and specific data on how much budget the central government should devolve to local governments, especially to CS administrations, to ensure that the local economy is promoted for fulfilling the local citizens' needs. Since the CSF is used as proxy indicator for decentralization in the regression analysis, decentralization here refers to fiscal decentralization.

This study was originally presented as a master's thesis in Public Management at the International University of Japan in 2013, and this is a modified and re-analyzed version. The paper will be structured in six parts, which include the introduction, background of decentralization in Cambodia, literature review, methodology, findings, and the conclusion.

2. Background of Decentralization in Cambodia

The Kingdom of Cambodia is comprised of one capital and 24 provinces. The capital is further subdivided into Khans, which are divided into Sangkats. A province is sub-divided into municipalities and districts (Srok). A municipality is divided into Sangkats. There are Communes and Sangkats (CSs) under districts. Thus, Communes and Sangkats are the lowest administrative arms of the Royal Government of Cambodia (RGC). The next sub-section will briefly describe the history of decentralization in Cambodia.

2.1. The Decentralization Effort after the Civil War

Post-conflict decentralization reforms in Cambodia was initiated firstly at CS administration, and then extended to whole sub-national administration.

2.1.1. Decentralization of Communes and Sangkats

There was a pilot project called Cambodia Reintegration and Rehabilitation (CARERE) Phase I from 1994–1995 to improve the living standard of the poor people in rural areas. The province, the highest of the sub-national governmental tiers, was selected to be involved in the project to support communes in promoting good local governance in the community through a participatory mechanism for financing and planning. The implementation of this project was regarded as the reestablishment of decentralization in Cambodia (Andersen 2004: 5).

With the implementation experience of CARERE Phase I, RGC established the Seila Program in 1996, which was to be supported by CARERE Phase II from 1996 through 2000. This program was

executed to stimulate decentralization and de-concentration reforms in Cambodia; it was operated as a mechanism to effectively distribute and bring together the aid from development partners (ibid).

There was a significant change in the decentralization efforts in 2001, which fell during the period of implementing Phase II of Seila Program led by the Seila Task Force. The Law on Administrative Management of CSs (LAMCS) in 2001 was adopted. Based on LAMCS, the CS council elections took place. The council members of CSs are elected by the local residents in the respective jurisdictions every five years by proportional representative-party close list to serve the best interests of their constituents; in other words, to promote economic status and the social welfare of the locality (LAMCS 2001). The council members were elected from different political parties.

In Chapter 7 of LAMCS, CSs must have their own financial resources and properties. The necessary financial resources are from national allocation budgets and from other resources, which include tax revenue, non-tax revenue and other service fees. Although the LAMCS stipulates that CSs can have the financial resources from taxes, they have obtained resources only from the national budget allocations (CSF) and contribution from local people and other NGOs. They are not able to collect tax yet.

In article 27 of LAMCS, the chief of each CS has the right to establish some committees to assist him/her. However, in 2008, the RGC instructed all the CSs to establish a CS Committee for Women and Children (CCWC) to take care all women and children issues in the CS's jurisdiction.

The annual budget transfer of CSF has been increasing gradually year to year since initiation in 2002. The allocated budget for CSs has steadily increased from 1.5% in 2002 to 2.80% of national current revenue in 2016. The average annual budget for the last three years (2014–2016) is approximately 272,543.33 million riels (68.14 million USD) transferred to all CSs in Cambodia. The total number of CSs nationwide is 1633, so each CS receives approximately 167 million riels (41,000.00 USD) on average (MEF 2014–2016). According to the decentralization strategy, CSs should be substantially autonomous; they can manage their resources for local development with the participation of residents.

2.1.2. Decentralization and De-concentration Reform at Province, Capital, Municipality, Khan and District Levels.

In the process of decentralization reform at the CS level, the RGC has seen that the sub-national governments are weak as a whole in effective and efficient development and service delivery to local people, which has required an administrative change at all levels of the sub-national governments (RGC 2005). In short, local government with substantial autonomy is scarce, and the RGC wants a unified administration[1] at sub-national levels. As a result, the Strategic Framework for Decentralization and De-concentration (D&D) in 2005 was approved as guidance for D&D reform in Cambodia. Subsequently, the Organic Law was also adopted in 2008 to establish a unified administration system at

sub-national levels and provide continuing support for the D&D reform in Cambodia.

With the Organic Law, the sub-national councils in the capital, provinces, municipalities, districts and Khans were indirectly elected by commune councils for the first legislative term in 2008 (and since then, every five years). Under each council of the capital/province, municipality/district/Khan, there is a board of governors (governor and deputy governors appointed by the central government). The councilors play a principal role as the citizens' representatives for the budget and development planning in their respective jurisdictions, while the board of governors implements the budget and development planning decisions by the councils.

2.2. Decentralization Effort at Commune Level to Economic Development

So, what has the CS done to promote economic development? The following discussion will mainly focus on decentralization at the CS level.

According to LAMCS, once the councilors are elected, they are required to prepare a five-year CS Development Plan (CDP) for development in their own jurisdictions. The plan is required to cover five

Table 1 Types of Projects Invested by Commune/Sangkats 2009–2015

Type of Projects	Frequency	Percent
Agriculture	449	1.59
Community Fisheries	85	0.3
Community Water Resource management	4	0.01
Community forestry	78	0.28
Domestic Sanitation	30	0.11
Education	101	0.36
Environmental Management	49	0.17
Health	4	0.01
Irrigation	2,060	7.29
Market infrastructure	4	0.01
Rural Domestic Water Supplies	290	1.03
Rural Drainage and Flood Protection	94	0.33
Rural Transport	23,366	82.69
Tourism development	30	0.11
Urban Drainage and Flood Protection	143	0.51
Urban transport	1,450	5.13
Others	20	0.07

Source: Project Information Database/NCDD

main components, which are economic, social, natural resources and environment, administrative and security, and gender.

Once the CDP is approved for five years, council members need to prepare a Commune Investment Plan (CIP) to plan the further details of project investments with the available budget on an annual basis to execute the CDP. The CIP is formulated with participation from the local residents to identify what projects should be done and the estimated cost, and then this information will be recorded for the District Initiative Workshop (DIW).[2] The participants in the DIW are the capital/provincial governor, the ministry's administrative branch directors in the capital/provinces, district/Khan/municipality governors, NGOs, donors, and other supporters (MoI & MoP 2007).

There are many project types that have been implemented by CSs in several areas as can be seen in Table 1 Among these project types since 2009–2015, CSs highly invested in rural transportation projects, which is 83% of total investment expenditures, whereas urban transportation is only 5%.

3. Literature Review

The objective of this study is to examine the impact of decentralization on local economic development in the context of Cambodia at the level of CS administration. Does decentralization really promote local economic development?

3.1. Relations between Decentralization and Economic Development

In general, it is believed that decentralization will provide positive impacts to society; that is, the economy and the quality of local people's lives should be improved through decentralization.

Also, Stansel (2005: 66) argued that decentralization is really a kind of catalyst to promote the economy. The argument was based on the study of the relationship between government structure and economic growth focusing on decentralization by using a data set of 314 metropolitan areas from 1960 to 1990 in the United States of America. In the model for analysis, two dependent variables were used to measure economic growth, which were population growth and per capita income. The reason he used population growth as a proxy for local economic growth is that the more attractive a metropolitan area becomes to people and business, the more population growth would be seen, whereas the local decentralization measurement is the number of local governments and the number of school systems per 100,000 residents.[3] The result showed a positive coefficient for the number of local governments variable.

Similar result has been found through the study done by Rodriguez-Pose & Kroijer (2009). The study found an inverse relationship between sub-national tax and economic growth; however, it happened only at the initial stage, then it gradually move from a negative to positive relationship after one year. The study employed panel data from 16 Central and Eastern European (CEE) nations which

are considered developing countries for the period 1990–2004.[4]

Furthermore, Iimi (2005: 449) confirmed that any forms of decentralization will have an effect on economic growth. He used data from both developed and developing countries for the period 1997–2001. The model which is used by Davoodi & Zou (1998) for analyzing the impact of decentralization on economic growth was applied, and Iimi added the variable of political freedom.[5] The result showed that fiscal decentralization (sub-national expenditure) had a significant and positive effect on economic growth — GDP per capita.

There have been a few studies done to examine the relationship between decentralization and economic development in Cambodia (Tracey-White et al 2001; Tracey-White et al 2002; Andersen 2004 and Romeo & Spyckerelle 2003). Andersen (2004: 2) has argued "the investments show a high rate of economic return". This assertion was based on the study "The Socio-Economic Impact of the Local Development Fund/Local Planning Process 1996–2000" by Tracey-White et al (2001) and "Review of Provincial Investments in Seila 1997–2001" by Tracey-White et al (2002). The above studies just compared the situation of the beneficiaries before and after the CS project developments based on their survey responses as qualitative indicators. For example, road projects have contributed to reduce the time and cost of travel. There has been a 40% reduction in travel time and 30% in the cost (Andersen, cited in Tracey-White et al 2001 and Tracey-White et al 2002).

In addition, Romeo & Spyckerelle (2003: 21) observed in a case study on "Local Governance on Pro-Poor Service Delivery" that budget transferred for CS from 2002–2003 was a strong contributor to CS project developments in economic infrastructure, especially for small infrastructure projects targeting roads, bridges, canals, and irrigation systems.

In contrast, some scholars found negative effects or no effects between the two variables (Davoodi & Zou 1998; Woller & Phillips 1998; Xie, et al. 1999 and Zhang & Zou 1998). For example, Woller & Phillips (1998) revealed that there is no strong correlation between fiscal decentralization and economic growth. This argument is based on their study in 23 less developed countries (LDCs) on the link between fiscal decentralization and economic growth/development from 1974–1991.

Zhang & Zuo (1998) analyzed the trend of fiscal budgets for national and local government on economic growth by using provincial panel data from 1978 to 1992. Provincial income growth rate was employed as the dependent variable and proxy indicator for economic growth, while the independent variables were investment and labor, and fiscal decentralization in terms of spending (the total expenditure of the province and central government). The result showed a negative and significant coefficient on fiscal decentralization; that is, there is an inverse link between fiscal decentralization and the growth of provincial income (Zhang & Zuo, 1998: 236).

Besides, Davoodi & Zou (1998: 244) have claimed that there was an inverse link between fiscal decentralization and growth in developing economic countries, whereas there is no correlation in developed countries. A data set from 1970–1986 of 46 countries was used for this study. Fiscal

decentralization here referred to the expenditures by sub-national government as part of total government expenditure.

Moreover, Xie et al. (1999: 228) mentioned that "further decentralization in public spending may be harmful for the growth." Their unit of study was the three tiers of government of the United States of America from 1948–1994.

However, the reason why scholars such as Zhang & Zuo (1998) and Xie et al. (1999) found negative relationships might be due to the data selected for the studies. They used data at a time that China and the United States were experiencing high economic growth, so at this time, the high tier of government would have had the main role in economic development at the early stage (Akai & Sakata 2002: 94). Also, Davoodi & Zou (1998) used cross-country data; therefore, it is difficult to examine the relationships between fiscal decentralization and economic growth, as the countries have different histories, cultures and institutional management (ibid).

Moreover, another reason that a negative relationship was found between fiscal decentralization and economic growth might be because, in their models, they have not controlled variables of political factors. When we talk about decentralization, we need to know that there are three dimensions of decentralization, such as political, fiscal, and administrative decentralization. Secondly, the limited capacity of local governments matters. This means that decentralization needs time to realize the theorized positive impact on economic growth.

3.2. Hypothesis

The hypothesis for this study is that there will be a positive effect of CSF on local economic development in certain CSs.

Based on the literature reviewed above, decentralization is supposed to be positively associated with economic development (Akai & Sakata 2002; Wall Oats 1993; Iimi 2005; Stansel 2005; White et al. 2001; Tracey-White et al. 2002; Andersen 2004 and Romeo & Spyckerelle 2003). This is because decentralization has paved the way for the central government to give more power resources to the sub-national governments that are close to citizens to respond to local preferences better and more quickly.

While there are some positive findings for this hypothesis in the previous literature, some studies also found an inverse link between decentralization and economic development (Zhang & Zou 1998; Davoodi & Zou 1998 and Xie et al. 1999). As mentioned in the literature review, they found a negative relationship, probably because they did not control for other factors such as the political situation or migration.

This paper uses a panel dataset from 2007 to 2015. During this period, the economic recession affected the world economy and more or less the economic growth of Cambodia too.

Even though Cambodia had this experience, the CSF allocation from National Current Revenue

still increased from 2.56% in 2007 to 2.80% in 2015; therefore, local governments, the CSs, play an important role in promoting their local development, while the national government was rather constrained. However, the CSF for each CS is different, and some have received more than others. The CSF for each CS is divided into two components. The first is for the administrative component, which is determined by the number of council members in each CS. The second is for developmental purposes. The share for this component is defined on the basis of three dimensions, which are equal share, the population, and the poverty rate of each CS (RGC 2002).

It is rational enough that the developmental component of CSF has a more robust impact on local economic development than the administrative component, because development component is spent on developmental investment projects, and especially on local infrastructure such as road construction, agricultural infrastructure, bridges, markets, schools, health facilities, and other related services. In contrast, the administrative component is spent on operational costs, such as salary for the CS councilors and their staff and travel costs, not on developmental project investment (ibid).

According to the hypothesis, it is expected that the CSF will contribute to local economic development through poverty reduction. Furthermore, since the majority of CSF has been spent largely on local infrastructure, it will provide spaces for more trade activities through small business development and the increase of motor vehicles for their economic activities.

4. Data and Methodology

The decentralization that most of the scholars above refer to consists of resources and autonomy which the central government devolves to the sub-national government as a whole. In the case of decentralization in Cambodia since 2002, only CSs regarded as the lowest tier of local government have received resources from the national government and have proceeded in an autonomous manner.

Therefore, the data which is going to be employed in this study will be from the CS level to examine the impact of decentralization on local economic development/growth. These data are available in the Commune Database (CDB), Commune Council Database (CCD), Census 2008 of Cambodia, Poverty rate at the CS level by the Ministry of Planning (MoP), and budget transferred or CSF which is available from the Ministry of Economy and Finance (MEF).

4.1. Variables

4.1.1. Independent Variables

This study employs the budget amount transferred every year from 2007–2015 from the national government to CSs as the main independent variable. The transferred budget is distributed in Riels (Cambodian currency, 1.00 USD＝4,000 riels). The two components of CSF are derived from the natural logarithm per capita of CSF in administrative component and in the developmental component.

This budget is utilized as a measure for the decentralization at the CS level in Cambodia, and this indicator selection is also consistent with other scholars such as Rodriguez-Pose and Kroijer (2009) who used budget transfer from the national government as one of the measures for decentralization. As mentioned above, the only revenue source of CSs is the budget transfer from the central government. The main concern for this study is the developmental CSF, as it is used for project investments which would more directly contribute to local economic development.

4.1.2. Dependent Variables

Many studies on the relations between decentralization and economic growth have used GDP per capita to measure economic growth (Iimi 2005; Stansel 2005 and Davoodi & Zou 1998). However, this is not really suitable for a developing country such as Cambodia. The reasons are that, first, GDP per capita especially at a very local level like CS cannot be reliable. Second, at the CS level, the proxy indicators that reflect local economic development are better than those directly related to daily living status. Therefore, the proxy indicators for economic development utilized for this study are the numbers of local small businesses per 1,000 people, motor vehicles per capita, the infant mortality rate, and the poverty rate in each CS.

There are reasons for selecting these as proxy indicators. First, the poverty rate is also often used as a proxy indicator of economic growth. The data on the local poverty rate is produced by the MoP. A lower poverty rate indicates that the economy in the jurisdiction performs relatively better than those in other places. Many studies report that there is a close link between poverty and economic growth (Adams 2003: 19–20 and Deininger & Squire 1996: 565).

Second, the small business variable in this study is the composition and numbers of local small-scale services and food shops per 1,000 people, such as phone services, massage, Karaoke, hairdressers, drink, food, grocery, and the like. An increase in the number of small businesses in a CS contributes to the employment of people. Employment is a main indicator that reflects economic development. Smallbone et al. (2001) argued that there is a small contribution to the employment share of small and medium enterprises (SMEs); however, it can increase employment.

Third, vehicles per capita refers to the total number of family cars used for daily transportation plus the number of motorcycles among the population in each CS. An increase in this indicator could mean that the local jurisdiction enjoys economic growth, which leads to higher incomes for the people; therefore, they may be able to purchase exclusive means of transportation for their families.

Fourth, infant mortality is actually "the number of infants dying before reaching one year of age, per 1,000 live births in a given year" (http://data.worldbank.org/indicia-tor/SP.DYN.IMRT.IN). Again, due to the limitation of data availability, the infant mortality rate at this time refers to the ratio of infants dying between 0 days to one month per 1,000 people. Hauser (1959: 101) mentioned that the "infant mortality rate is a relatively sensitive indicator of differences in level of economic development." He

continued that, historically, a country with high economic growth experiences a reduction in the infant mortality rate.

4.1.3. Control Variables

To make the result of regression more reliable and reduce the effect of other factors, other variables have been added as control variables. They include the illiteracy rate and population. These two variables have been used by many scholars (Rodriguez-Pose & Kroijer 2009 and Akai & Sakata 2002) as controls when studying the effect of decentralization on economic growth. The illiteracy rate here refers to the number of illiterate people among the population in each CS, whereas the population variable is derived from the natural logarithm of the population. Furthermore, an urban and rural distinction has been used for this analysis. In this data, if the CS is in an urban area, it is coded as 1, and otherwise 0. Urbanization also affects economic development. The determinants of urban

Table 2 Variable Description

Variables	Description	Sources
Independent Variables		
Administrative component	The natural logarithm per capita of CSF in Administrative component	MoEF
Development component	The natural logarithm per capita of CSF in developmental component	MoEF
Dependent Variables		
Small businesses	The numbers of small scaled services and food shops in CS per 1,000 people.	CDB
Motor vehicles	Total number family cars plus the number of motorcycles in the CS among the population in each CS.	CDB
Infant mortality rate	Ratio of infants dying between 0 days to one month to per 1,000 people.	CDB
Poverty rate	Local poverty rate which is produced by the Ministry of Planning.	MoP
Control Variables		
Council men	The number of councilors per 1,000 people	NEC
Council control	Political control of the council. If the chief of council is from the ruling party, the variable is coded as 1, and 0 if from the opposition party.	NEC
Urban	Urban area is coded as 1, and otherwise 0	CDB
Population	Natural logarithm of population.	CDB
Illiteracy rate	Number of illiterate people among the population in each CS.	CDB

areas are based on three considerations: i) a population density more than 200 per km2; ii) a male employment rate in the agriculture sector of less than 50%; and iii) a population of more than 2,000 (MoP 2008: 19).

Also, the number of councilors per 1,000 inhabitants in each CS is included. The more councilors, the more local residents' needs are addressed by their representatives on council. This can contribute to promote the economic status of local residents.

Moreover, Schneider (2003: 41) regards municipal elections and other elections at the sub-national level as a kind of political decentralization. Iimi (2005) argues that if some scholars found negative relationships between economic growth and decentralization, it was because they ignored the political indicators of political decentralization. In order to respond to this criticism, one variable is also included as a control variables to capture political decentralization. If the chief of the council in a CS is from the ruling party, the variable is coded as 1, and 0 if from the opposition party. It is believed that if the CS is controlled by a council from the ruling party, the national government is more willing to support its affiliate at the local level through adopting more supportive policies and regulations.

Furthermore, the one-year lag of each dependent variable is used for each model as a control variable. The idea to include this variable is to offset a plausible auto-correlation in each CS, meaning a looped feedback might exist for each CS which might create heteroscedasticity. Lastly, every independent variable is one-year lagged.

4.2. Econometric Models

To examine the impact of decentralization on local economic development in the CSs, OLS with year dummy variables known as Least Square Dummy Variables (LSDV) is utilized, and the three models for the study are as follows:

$$Y_{it} = \beta'_0 + \beta'_1 X'_{it-1} + \beta'_2 Z_{it} + \beta'_3 Y_{it-1} + \beta'_4 YD_{it} + \varepsilon'_{it} \quad (1)$$

$$Y_{it} = \beta''_0 + \beta''_1 X''_{it-1} + \beta''_2 Z_{it} + \beta''_3 Y_{it-1} + \beta''_4 YD_{it} + \varepsilon''_{it} \quad (2)$$

$$Y_{it} = \beta'''_0 + \beta'''_1 X'''_{it-1} + \beta'''_2 Z_{it} + \beta'''_3 Y_{it-1} + \beta'''_4 YD_{it} + \varepsilon'''_{it} \quad (3)$$

Where

Y_{it}: Economic development/growth which is measured by dependent variables.

Y_{it-1}: One-year lag of dependent variables.

X'_{it}: Decentralization which is measured by total CSF.

X''_{it}: Decentralization which is measured by the administrative component of CSF.

X'''_{it}: Decentralization which is measured by the development component of CSF.

Z_{it}: Group of control variables.

YD_{it}: The year dummy represented by year2007, year2008, year2009 and year2010, year2011, year2012, year2013, year2014 and year2015.

Again, the hypothesis of this study is that fiscal decentralization in Cambodia will have a positive effect on economic growth; that is, the total CSF will have a positive relationship to the number of small businesses and the number of motor vehicles, whereas there will be a negative relationship between CSF and the infant mortality and poverty rates. Furthermore, since the development component is spent on development project investments in the CS jurisdictions and the administrative component is used for the operational costs, the development component will demonstrate more impacts on local economic development than the administrative one.

5. Findings

The results of running the LSDV are as follows:

5.1. Poverty Rate

Based on the model run with total CSF, model (1), the result is consistent with the hypothesis

Table 3 Results of LSDV between CSF and Poverty Rate

Variable	Estimation of Poverty Rate with		
	CSFt	CSFa	CSFd
Total CSF	−1.203***	—	—
	(0.203)	—	—
Administrative transfer	—	−0.329***	—
	—	(0.128)	—
Development transfer	—	—	−1.689***
	—	—	(0.239)
Councilors	0.024	−0.055	0.042
	(0.058)	(0.059)	(0.056)
Population	−0.927***	−0.289***	−1.382***
	(0.154)	(0.089)	(0.199)
Council control	0.230	0.222	0.194
	(0.212)	(0.213)	(0.209)
Urban	−2.158***	−2.180***	−2.083***
	(0.135)	(0.134)	(0.134)
Illiteracy rate	6.468***	6.173***	6.669***
	(0.782)	(0.762)	(0.796)
One-year lag of Poverty	0.873***	0.874***	0.872***
	(0.005)	(0.005)	(0.006)
One-year lag of CSF, CSFa or CSFd	−0.109	−0.022	−0.130
	(0.083)	(0.083)	(0.081)
R-squared	0.8919	0.8917	0.8920
F statistic	11942.49	11689.76	11680.73

Note: $^{*}p < 0.1$, $^{**}p < 0.05$ and $^{***}p < 0.01$, and robust standard errors are reported in the parentheses.

that there is negative relationship between total CSF and the poverty rate in CSs that is statistically significant at the 1% level. This OLS estimation indicates that if the per capita CSF transfer is increased by 1%, the poverty rate at the CS will decrease by 0.012 (1.203/100) percentage points.

To check the different effects between the administrative and development components, models (2) and (3) were run separately using OLS regression with a year dummy variable. The result showed that both components of CSF are negatively associated with the poverty rate and statistically significant at 1%. If per capita administrative transfer increases by 1%, the poverty rate will decrease by 0.003 (=0.329/100) percentage points. In addition, if per capita development transfer to CSs goes up by 1%, the poverty rate will decline 0.017 (1.689/100) percentage points.

5.2. Small Business

As anticipated, the total CSF is positively associated with number of small businesses in the CSs; however, it is not statistically significant.

Similar to the regression result between the number of small business and total CSF, by running

Table 4 Result of LSDV between CSF and Small Business

Variable	Estimation of Number of Small Businesses with		
	CSFt	CSFa	CSFd
Total CSF	2.63	—	—
	(3.881)		—
Administrative transfer	—	0.405	—
	—	(2.053)	—
Development transfer	—	—	4.269
	—	—	(4.621)
Councilors	8.976**	9.244**	8.865**
	(4.922)	(4.823)	(4.884)
Population	6.390***	4.900**	7.793***
	(2.481)	(2.944)	(2.917)
Council control	− 0.644	− 0.571	− 0.566
	(1.958)	(1.958)	(1.951)
Urban	5.499***	5.484***	5.340***
	(0.799)	(0.815)	(0.770)
Illiteracy rate	3.817	4.239	3.072
	(9.019)	(8.641)	(9.349)
One-year lag of # Small business	0.074***	0.076***	0.073
	(0.077)	(0.078)	(0.075)
One-year lag of CSF, CSFa or CSFd	− 0.193	− 0.541	0.001
	(0.970)	(1.103)	(0.949)
R-squared	0.1275	0.1272	0.1278
F statistic	16.16	14.86	19.62

Note: *p < 0.1, **p < 0.05 and ***p < 0.01, and robust standard errors are reported in the parentheses.

OLS with year dummy variable from 2007 to 2015 for models (2) and (3), the result shows that there are positive correlations with both the administrative and development components of CSF; however, neither are statistically significant.

5.3. Motor Vehicles

The result in model (1) confirmed the hypothesis that decentralization has a parallel relationship with local economic development. This is because there is a strong association between number of motor vehicles and total CSF with statistical significance at 1%; that is, there is a positive effect on total per capita CSF and motor vehicles per capita in the CS jurisdictions. The result from OLS regression indicates that if the total CSF per capita grows by 1%, motor vehicles per capita would rise to 0.0018 (0.182/100) units by holding other variables constant.

As for models (2) and (3), it is illustrated that both components of CSF have positive effects on the numbers of motor vehicles and both are statistically significant at the 1% level. In model (2), it is indicated that if the administrative component of CSF per capita is increased by 1%, motor vehicles

Table 5 Result of LSDV between CSF and Motor Vehicle

Variable	Estimation of Number of Motor Vehicle with		
	CSFt	CSFa	CSFd
Total CSF	0.182***	—	—
	(0.046)	—	—
Administrative transfer	—	0.114***	—
	—	(0.018)	—
Development transfer	—	—	0.214***
	—	—	(0.065)
Councilors	0.085***	0.090***	0.084***
	(0.023)	(0.023)	(0.023)
Population	0.117***	0.065***	0.151***
	(0.025)	(0.013)	(0.042)
Council control	0.011	0.012**	0.014**
	(0.007)	(0.009)	(0.006)
Urban	0.103***	0.104***	0.099***
	(0.016)	(0.016)	(0.014)
Illiteracy rate	− 0.045	− 0.026	− 0.058
	(0.084)	(0.082)	(0.088)
One-year lag of # Motor Vehicle	0.351***	0.366***	0.343***
	(0.043)	(0.042)	(0.045)
One-year lag CSF, CSFa or CSFd	-0.079***	-0.093***	-0.074***
	(0.014)	0.017	(0.013)
R-squared	0.2842	0.2819	0.2845
F statistic	203.00	202.91	202.53

Note: *p < 0.1, **p < 0.05 and ***p < 0.01, and robust standard errors are reported in the parentheses.

per capita would go up by 0.0011 (0.114/100) units. Simultaneously, motor vehicles per capita would increase by 0.002 (0.214/100) if the development component of CSF per capita is increased by 1%.

5.4. Infant Mortality Rate

Lastly, the OLS regression on infant mortality rate illustrated the inverse effect of total CSF; however, it is not statistically significant.

Observing the different effects of administrative and development components, it is found that their effects have a different direction of effect on the infant mortality rate, i.e., while the administrative component of CSF has a parallel relationship and is statistically significant at 1%, the development component has an inverse association and is statistically significant at 1%. The result of models (2) and (3) reveals that if the administrative component increases by 1%, infant mortality per 1,000 people would increase by 0.0005 (0.059/100). In contrast, infant mortality would decrease by 0.0007 (0.071/100) if the development component of CSF increases by 1%.

Table 6 Result of LSDV between CSF and Infant Mortality Rate

Variable	Estimation of Infant Mortality Rate with		
	CSFt	CSFa	CSFd
Total CSF	−0.007	−	−
	(0.025)	−	−
Administrative component	−	0.059***	−
	−	(0.013)	−
Development component	−	−	−0.071***
	−	−	(0.032)
Councilors	0.039***	0.031*	0.044***
	(0.019)	(0.018)	(0.019)
Population	−0.072***	−0.031**	−0.122***
	(0.016)	(0.015)	(0.020)
Council control	−0.032	−0.036	−0.034
	(0.037)	(0.037)	(0.037)
Urban	−0.045***	−0.044***	−0.039***
	(0.009)	(0.009)	(0.009)
Illiteracy rate	1.264***	1.249***	1.286***
	(0.207)	(0.204)	(0.208)
One-year lag of Infant Mortality Rate	0.136***	0.137***	0.136***
	(0.025)	(0.025)	(0.025)
One-year lag CSF, CSFa or CSFd	−0.041***	−0.033***	−0.044***
	(0.012)	(0.012)	(0.012)
R-squared	0.1852	0.1853	0.1861
F statistic	66.68	65.76	66.45

Note: *$p < 0.1$, **$p < 0.05$ and ***$p < 0.01$, and robust standard errors are reported in the parentheses.

5.5. Discussion

5.5.1. Total CSF

From the results of the regression analysis, CSF has negative effects on the poverty and infant mortality rates; however, it is not statistically significant for the relationship between total CSF and infant mortality. However, if we examine the different effects of the administrative and development components of CSF on the infant mortality rate, the effects go in different directions. That is, while administrative component per capita has a positive effect on the infant mortality rate, there is negative effect between the development component of CSF and infant mortality.

Simultaneously, there are positive links between total CSF and the numbers of small businesses and motor vehicles; however, it is not statistically significant for the relationship between total CSF and the number of small businesses.

5.5.2. The Difference between Administrative and Developmental Components of CSF

When examining details by checking the different effects of the administrative and development components of CSF on local economic development, it was found that the development component of CSF has had more impacts on local economic development than the administrative one. This is also consistent with the hypothesis.

While the coefficient of the effect of administrative component per capita on the poverty rate is 0.329, the coefficient of the effect of the development component is 1.203. Similarly, while the coefficient of influence administrative component per capita on the number of small businesses per 1,000 inhabitants is only 0.405, that of the development component per capita is 4.269. However, both effects are not statistically significant.

On the other hand, when running OLS separately with a year dummy variable to study the effect of administrative and development CSF per capita on the number of motor vehicles per capita, it indicates both components have a positive impact on the number of motor vehicles and are statistically significant at 1%. However, it is still observed that the effect of the development component is stronger than that of administrative component; that is, 0.114 versus 0.214.

For the OLS estimation of the effects of the administrative and development components of CSF on the infant mortality rate, the result is rather different from others. While both components have the same direction when running OLS with the poverty rate, the number of small businesses and the number of motor vehicles, it has a different direction of effect for both components of CSF. That is, while administrative component per capita has a positive effect on the infant mortality rate per 1,000 people, there is a negative effect between the development component of CSF per capita with infant mortality per 1,000 inhabitants.

The development component of CSF has contributed to a decline in the infant mortality rate. As indicated in Table 1 about the projects initiated by CSs from 2009–2015, CSs also invest in the health

sector; however, the proportion of this sector's investment is very small.

It is so doubt with the finding that administrative component has parallel effect with the infant mortality rate which needs to be further investigated why it is so. However, one of the possible reasons is that the CS council is required to have a Committee for Women and Children (CCWC). This committee has played a role in caring for children and women in the CS. Its roles are to ensure that the issues of women and children will be on the agenda of CS councils; that is, all issues related to women and children will be included in the CIP (NCDD 2008). This committee has used the administrative component of CSF for their operations, but it is not convenient for this committee to utilize this budget for their activities (Urashima and Tong 2014: 7–8).

The finding above reflects that three of four proxy indicators of local economic development (poverty rate, number of motor vehicles and infant mortality rate) empirically have a strong relationship with the CSF, especially the development fund. With the results, it can be argued that the budget transfer from the central government to the CSs contributes to local economic development through poverty reduction and the improvement of the quality of life of the citizens in CSs. This phenomenon may be caused by the contribution of CSF to the improvement of local infrastructure (Andersen 2004: 11) that provide good conditions for people running their economic activities to increase their incomes. In addition, the local infrastructure in the CS can contributes to the improvement of health care, since the CSs' project investments also focus on health and improving hygiene and sanitation. This finding is consistent with studies done by many scholars (Oates 1993; Iimi 2005; Rodriguez-Pose & Kroijer 2009; Stansel 2005; Romeo & Spyckerelle 2003 and Andersen 2004).

6. Conclusion

From the findings described above, the decentralization reform which has been proceeding since 2002 in Cambodia through budget transfer from the central government seems to be functioning as expected to promote local economic development and eliminate poverty. The empirical analysis in this study has revealed that the CSF has contributed to promoting economic growth in the CS jurisdictions. The development component of CSF has contributed more to the advancement of the economic status of CS jurisdictions than the administrative one. This means the more developmental funds are allocated to the CSs, the higher economic growth they experience. This finding is consistent with this study's hypothesis and the arguments by many scholars that decentralization is positively associated with economic growth.

However, as we know, the current main revenue of CSs is only the allocated budget from the central government, which is not large enough to rapidly boost economic development. Rodriguez-Pose and Kroijer (2009) recognized that a sub-national tax has a positive impact on economic development. If the CSs are able to have their own revenue through tax collection in addition to the transfers from the

central government, CS councils will have larger revenue and can expand development programs for their jurisdictions. As shown by this study, this will expedite economic growth in Cambodia.

The RGC should make a greater commitment to continuously implement the decentralization policy, because this fund genuinely raises the economic status of the people through the improvement of local infrastructure as well as the wellbeing of residents in the CSs. Simultaneously, the central government should provide more authority for CS councils to earn their own revenues to expand development initiatives at the local level to pull Cambodian people out of poverty.

Finally, there are some limitations to the study which need to be deeply considered in the future. First, elite capture is known to be one of the main issues of decentralization reforms, and it is not included in the study. It might reduce the positive outcomes of decentralization. Second, the study simply checks the average effects of decentralization on local economic development, but not the diverse effects among the localities. Checking the differences among the localities might shape the local policies to be more effective and responsive to the context.

Notes

1 According to the Organic Law, a unified administration (administrative jurisdiction) is the system of intergovernmental relations where councils at the sub-national level maintain authority to manage their finance, revenue, staff, and assets. They are to be equipped with the ability to effectively coordinate public service delivery and developments in the jurisdiction in responding to the needs of their local residents.

2 DIW is the mechanism to mobilize the resources from various sources to support the CS's project investments (with a limited budget, CS need to find from the other sources) which have been recorded in CIP, and to guide all the CS's project investments will comply with the policies of national and provincial level.

3 Also, some control variables are included into the model to run the OLS regression, which are population growth from 1950–1960, population in 1960, real per capita GDP in 1959, unemployment rate in 1960, share of the manufacturing sector to total employment, population whose age is 25 or older in1960 with 16 or more years of school and state dummy variables.

4 The fixed effect is utilized in running regression of the model $Y = \alpha + \beta_1 X + \beta_2 Z + \varepsilon$; Where Y is GDP per capita, X is a cluster of control variables, namely growth of population, GDP per capita in the initial period, proportion of investment to GDP, growth deflator, computer numbers per 1,000 inhabitants and human capital (secondary school enrollment) and Z is fiscal decentralization measurement.

5 "$gi = \theta 0 + \theta 1 \tau i + \theta 2 FDi + \theta 3 PFi + \theta 4 FDi * PFi + \theta 5 ni + \theta iXi + \varepsilon i$" (p. 453) where g: is the growth rate, τ i: tax rate, FDi: Sub-national government share of total government spending, ni: Population growth rate, Xi: control variable group and PFi: measures of political freedom. With this model, the dependent variable refers to GDP per capita over the five years.

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