DOES POVERTY MATTER FOR INTERGOVERNMENTAL TRANSFERS TO LOCAL GOVERNMENTS? Evidence from Cambodia

BY

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Abstract of the Thesis

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From the beginning of decentralization system in Cambodia, the Commune/Sangkat Funds was introduced as an intergovernmental transfer (IGT) mechanism in order to support the subnational administration and development. Although the adoption of a general formula of IGT allocation seems fair, equitable, and efficient, the fact of the matter is that with the implementation of this allocation, some of the rural communes appear to receive smaller amount of transfers than others. Thus, this research attempts to empirically look into determinants of intergovernmental transfers other than the said formula. Specifically, this study examines how local poverty rate affects IGT allocation that a commune/Sangkat has received from the national government between 2009 and 2010. It also investigates how political factors of subnational governments affect the transfer distribution in the context of Cambodian decentralization. The analysis reveals that the poverty rate is related with the administrative and total transfers but the relationship is not linear but curvilinear. The study also reports that the poverty has actually a negative effect on the development transfers. Furthermore, the analysis shows that the number of council persons and political control factors have a positive impact on the IGT allocation from the central government.

Keywords: Intergovernmental Transfer Allocation; Poverty; Political Control; Commune/Sangkat Funds

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List of Abbreviations

CHP	Nationalism Party
CPP	Cambodia People's Party
CSES	Cambodia Socio-Economic Survey
CSF	Commune/Sangkat Funds
DOLA	Department of Local Administration
FUN	National United Front for an Independent, Neutral, Peaceful, and Co-operative Cambodia
GDP	Gross Domestic Product
GRPD	Gross Regional Product Domestic
HDI	Human Development Index
HDP	Hang Dara Democratic Movement Party
IDPoor	Identification of the Poor Households
IGTs	Intergovernmental Transfers
LCU	Local Currency Units
MOP	Ministry of Planning
NCDD	National Committee for Sub-National Democratic Development
NSDP	National Strategy Development Planning
RGC	Royal Government of Cambodia
SRP	Sam Rainsy Party

Chapter 1 Introduction

1.1 Motivation

Cambodia has implemented decentralization system since 2002; it has been supported by allocation of the intergovernmental transfers, which is called Commune/Sangkat Funds (CSF), to the lowest of subnational structure, communes or Sangkats. The CSF provides a potentially effective mechanism for fiscal transfers and local level capacity building. It is believed that the allocation of CSF is an efficient and equitable system of fiscal transfers in Cambodia, in which a general formula for the distribution of the CSF is adopted. It is the fact that after implementation of this allocation, some of the rural communes appear to receive smaller amount of transfers. The general formula includes poverty level as one of three main determinants of transfer allocation.

This presents an interesting question of how much CSF fund transfers the high poverty local jurisdictions get from the national government as intended by the distribution formula. Hence, my research attempts to contribute to the empirical literature in this area of determinants of intergovernmental transfers. It seeks to explain the interaction between poverty rate and allocation of transfers at the commune/Sangkat government level. I explicitly introduce the intergovernmental transfer indicators to assess the marginal effect of poverty on the transfers.

1.2 Cambodia, Cambodian Government System, and Decentralization

Cambodia extends over 181,035 km2 and her population was 13.4 million inhabitants (MOP, 2008). According to World Bank‘s estimation, Cambodia is a low income country; whose GDP per capita was about US$750 in 2010; whose literacy rate is

78 % of people ages 15 and above in 2008; and whose poverty headcount ratio at national poverty line is 30.1% of population in 2007. The country's poverty rate has been on decrease over the last two decades largely due to key development policies. The Royal Government of Cambodia has implemented Rectangular Strategy (2008), which is to strengthen good governance, and National Strategic Development Plan (2006). As a result, Cambodia experienced the two digit economic growth between 2004 and 2007, which led to reduce poverty rate from 34.7% to 30.1% in 2007 (NSDP, 2010). In addition, Poverty headcount fell from 45-50 % to 35 % from 1994 to 2004 by comparing the difference between analyses of the Cambodia Socio-Economic Survey (CSES) (MOP, 2004).

Since 1993, Cambodia is a constitutional monarchy after establishment of constitution, where the king appoints the prime minister, while the prime minister candidates come from the national election every five year. There are 123 seats at the National Assembly. The country has adopted a bicameral system in 1999 with an amendment of her Constitution; there are 61 seats at the Senate of six-year term. The bureaucracy of the Royal Government of Cambodia is a two tier government system: the central and subnational government system. The central government is the center and source of fiscal and political power. The subnational governments are subordinated under the central government. There are three levels of subnational governments: province or municipality, which consists of 23 provinces and one municipality; district or city or

Khan[1], which consists of 159 districts, 26 cities, and eights Khans; and communes or Sangkats, which consists of 1417 communes and 204 Sangkats (MOP, 2008).

In the course of decentralizing the government system, Cambodia held the first and second commune council elections in 2002 and 2007, respectively. The third one will be held in 2012. In addition, there was the first provincial and district council election in 2009. However, this paper studies only the commune/sangkat level during the period of 2009 and 2010, which falls on the second term[2] 2007-2012 of commune/Sangkat councils. In this second term of commune council election, there are totally 11,284 councilors from five different parties. The 2007 commune/Sangkat election result shows that the Cambodia People's Party (CPP) is the leading and ruling party, which occupied 7,951 council seats. The Sam Rainsy Party (SRP) is one of the opposition parties, to which 2,635 council seats belong. Two alliance parties are the National United Front for an Independent, Neutral, Peaceful, and Co-operative Cambodia (FUN) with 270 council seats; and the Nationalism Party (CHP) with 427 councilors. The smallest party is the Hang Dara Democratic Movement Party (HDP) with only one council seat. As a result, there are only four parties whose members occupy positions of the chief, first deputy, and second deputy councilors of communes or Sangkats. The CPP occupies 1,583 chief positions; the SRP 27 chiefs, and the FUN 2 chiefs.

According to the provincial and district council election law, the elections of provincial and district council persons are a non-universal election. It means that there

[1] Khan is an urban district that consists of Sangkats. Sangkat is an urban commune at the lowest local government.
[2] The second commune council election is available at http://db.ncdd.gov.kh/ccd/home/index.castle (Retrieved on December 2011).

are only commune/Sangkat council persons and 123 law-makers of the National Assembly who have the right to join this election. It is also the same as the Senator election. In Cambodia, there are only Commune/Sangkat council election and law-makers of the National Assembly election that is universally or generally joined by all the Cambodian people.

By election, the councils of sub-national governments are formed, which is referred to as a decentralized system in this thesis. At the initial stage, there is only political decentralization at the subnational government (Comfrel, 2007). As a result, the lateness and initial development of administrative and fiscal decentralization have allowed the subnational governments to obtain intergovernmental transfers or Commune/Sangkat Funds in order to build as a foundation of the Cambodian decentralization since 2002.

Before implementing the decentralization, the government and other 11 international financing agencies developed and funded the Seila Program, which is known as "foundation stone". Its purpose is to initially establish a pilot transferring of power and decision making to the subnational governments and local citizens on a number of local project developments. The purpose of Seila program was to develop the communes based on local preferences and needs that include infrastructure, agricultural skills training, health care services, voice, freedom, and accessibility to water (Seila, 2003; Seila, 2004; Seila, 2005; Seila, 2006).

The development of Seila program was divided in two phases. During the period of 1996-2000, the first phase of the program covered 220 communes in the six Northern provinces and spent over US$ 70 million (Smoke & Kim, 2003). In the same line,

over 500 communes were covered in the second phase between 2000 and 2005. In addition, there is a one-year-extended Seila program in 2006, which covered all the communes. The second and extended phase spent about US$205 million. However, the Commune/Sangkat Fund has yearly covered 36% of the Seila program spending during period of 2001-2006 (Seila, 2006).

Decentralization reforms in Cambodia have been pursued for more than a decade. It's getting a little bit slower to implement administrative decentralization and fiscal decentralization that were yet to be clearly designed. The consequence of an absence of a clear and coherence policy, and strategy framework for decentralization reform led to the ad hoc nature of initiatives, a lack of consistency, and problematic sequencing (Comfrel, 2007).

However, the accountability of commune councilors and citizen's engagement in local decision making has been improved by decentralization. A number of projects have been implemented in each commune. Rural infrastructure was covered by most of these projects that are commonly believed to produce more opportunities for local citizens in several different sectors; for instance, transportation of agricultural products, health care services, and better local economy. Again, decentralization has brought a feeling that local households have better access to hospitals, markets, and other services; transportation of goods and services delivery are more useful and suitable (Comfrel, 2007).

1.3 Intergovernmental Transfers and Poverty

It is believed in the literature that the presence of intergovernmental transfers' formula does not assure that the allocation of resources is objective, fair, efficient, or stable.

However, the intergovernmental transfers to local government appear to reduce poverty (Bjornestad, 2009; Sepulveda & Martinez-Vazquez, 2010; Yao, 2007). The local government expenditure to serve public services which the poor can consume may be more likely to reduce poverty (Arze et al., 2003; Ravallion, 2004). In short, another main purpose of the transfers is to serve the poor; Ansolabehere et al. (2002) suggest that many state spending programs of the transfers were focused on the poor or low-income citizens.

The poor is mainly considered as one among main determinants of local expenditure needs and revenue capacity factors which heavily have attracted larger transfers to a jurisdiction. The results of the international studies show that the local expenditure needs and revenue capacity have globally a positive impact on the level of intergovernmental grants that a jurisdiction receives (Boex & Martinzez-Vazquez, 2004).

In addition, the empirical studies of IGTs appear to suggest that the use of IGTs has been made by politicians at the central and subnational governments in order to partially serve their own self-interests for reelection (Alperovich, 1984; Grossman, 1994; Wright, 1974). The distribution of IGTs by democratically elected politicians leads to serve the preferences of the median voter in order to maximize reelection possibilities (Boex & Martinez-Vazquez, 2004). At the same time, the transfers would be allocated differently. In evidence of political determinants of intergovernmental grants in Argentina, Porto and Sanguinetti (2001) claim that the allocation of federal grants could be associated with political variables such as the political representation of jurisdictions at Congress.

1.4 Objective and Organization of the Study

Building up one of the key findings of the empirical studies of the determinants of IGTs that an impact of higher poverty rate leads to larger intergovernmental transfer of a jurisdiction, this thesis examines how poverty rate affect allocation of IGTs that a commune/Sangkat receives from the central government between 2009 and 2010 using models developed by Boex and Martinez-Vazquez (2004). In addition, it examines how political capital factors of local governments affect the distribution of CSFs in the context of Cambodian decentralization.

This paper is composed of five main chapters. The second chapter will illustrate its conceptual framework and review of related literatures. Then, the third chapter will discuss the methodology of determinants of intergovernmental transfers that include description of data and explanatory variables. After that, the result of data analysis and discussion section will be provided in chapter fourth. The last chapter is set aside for conclusion and recommendations.

Chapter 2 Conceptual framework and Review of Empirical Studies

2.1. Definition and Measure of Intergovernmental Transfer

Decentralization is generally defined as empowerment of local governments through local citizens by election and participation. It means that administrative, political, and fiscal functions are delegated or authorized to local governments, who decide what to do and to serve local preferences and needs. Indeed, fiscal decentralization is divided into assignment of expenditures, revenues sources including fees and taxes, allocation of intergovernmental transfers or grants, and local borrowing.

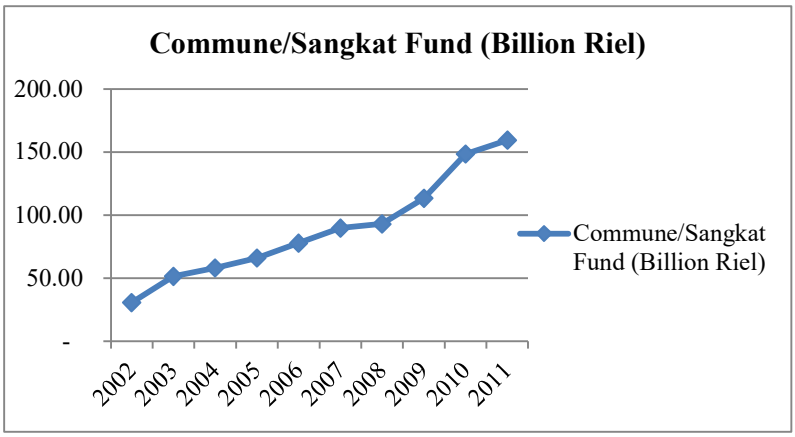
As a part of fiscal decentralization, intergovernmental transfers play an important role in order to provide sufficient revenues to local governments in order to fund their expenditure responsibility. This transfer is usually funded by the central government in order to support local governments' activities. In Cambodia, the intergovernmental transfers have been used to fund the lowest level of government (known as commune or Sangkat) since 2002. The transfers are called Commune/Sangkat Funds or CSF, which is at an initial stage of Cambodian decentralization. All communes or Sangkats have received the intergovernmental transfers to support administrative functions and local development expenditures including infrastructure, education systems, health clinics, and other socio-economic activities (See Appendix 3 and Appendix 4). Based on the local preferences and needs, local citizens have been encouraged to participate freely and have votes in the local development budgets.

In 2002, Commune/Sangkat councils were newly elected and the Royal Government of Cambodia established the Commune/Sangkat Fund (CSF) under a sub-decree[3] in order to strengthen local good governance and to develop local community. The purpose of CSF is to provide the councils with minimum resources for increasing responsibilities of local administration and development, to gradually balance different natural resources, and to use CSF as incentives to strengthen local governance and performance.

According to the data from the Ministry of Interior, Cambodia, total amount of CSF has increased moderately from 30.69 billion Riel to 159.40 billion Riel during the period of 2002-2011 (Figure 1). Figure 2 shows that at the initial stage of decentralization, the CSF took only up less than 0.2% of GDP (constant LCU), but as of 2010, it is about 0.5% of GDP which has been more than doubled during the period. Accordingly, the CSF was less than 0.2% of GDP (current LCU), but it is about 50% increase to more than 0.3% of GDP (Figure 2). The national revenue increased moderately from 2369.51 billion Riel to 6610.81 billion Riel during the period of 2002-2009 (Figure 3). In contrast, the CSF was 2.42% of the national revenue in 2003 and the CSF as percentage of the national revenue decreases to 1.71% in 2009 (Figure 4). This figure poses an interesting reality that local governments' expenditures have not expended as rapidly as those of the national government spends less than 1% of its budgets for strengthening local governments. It implies that the local autonomy and initiatives in its developmental policies may be jeopardized.

[3] The sub-decree (Anukret) 16/ANK/BK on the establishment of Commune/Sangkat Funds (RGC, 2002)

Figure 1: Total amount of CSF between 2002 and 2011



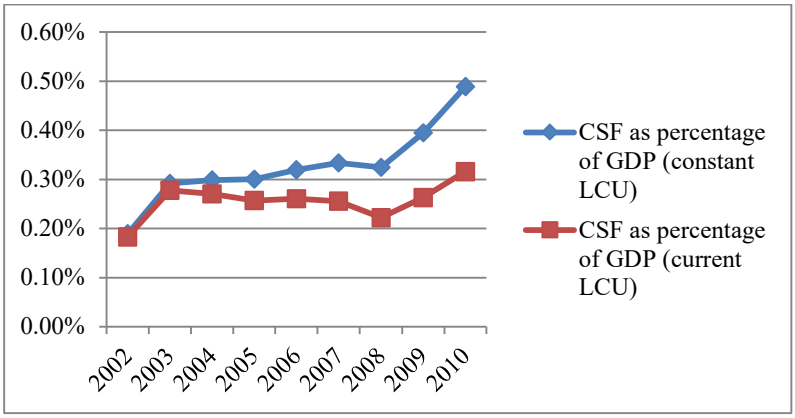
Data source: Department of Local Administration, Ministry of Interior, available at http://moi-dola.gov.kh/kh/cspage/csfinance/csfundincome/ (Retrieved on October 2011)

Table 1: CSF (Billion Riel) and its Growth Rate between 2002 and 2011

Year	$CSF^{(i)}$	Changes of CSF	$Growth\ Rate^{(ii)}$
2002	30.69		
2003	51.42	20.73	67.56%
2004	58.00	6.58	89.00%
2005	66.10	8.10	115.39%
2006	77.81	11.71	153.57%
2007	89.55	11.74	191.81%
2008	93.03	3.48	203.13%
2009	113.34	20.32	269.33%
2010	148.57	35.23	384.15%
2011	159.40	10.83	419.42%

Note: (i) Commune/Sangkat Funds (Billion Riel) and (ii) Growth rate of CSF

Figure 2: CSF as Percentage of GDP



Data source: World Data Bank, available at http://databank.worldbank.org/ddp/home.do?Step=3&id=4 (Retrieved on February 2012).

Figure 3: Cambodian National Revenue (2003-2009)

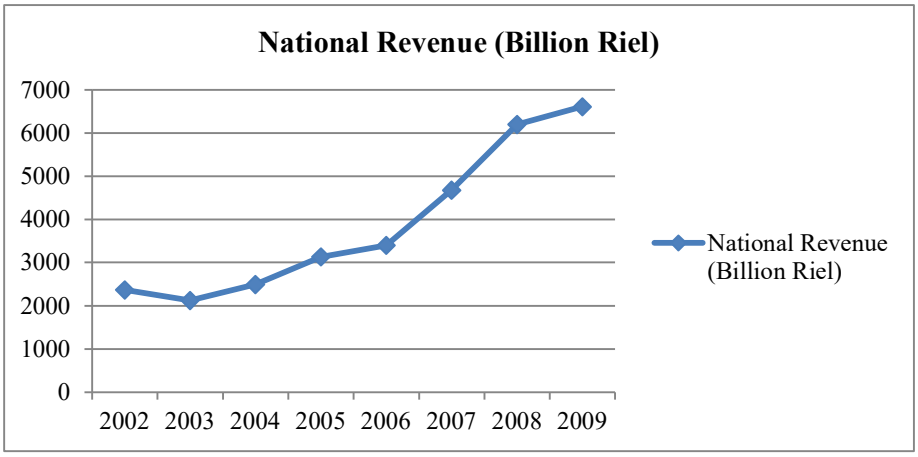
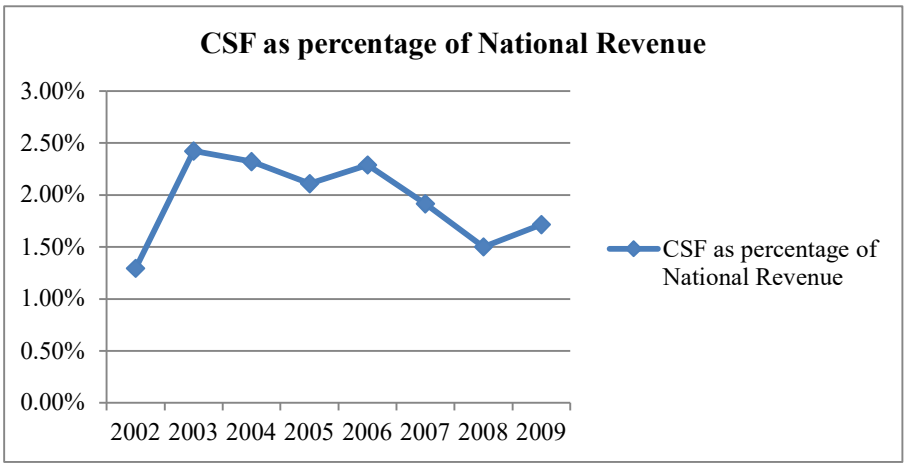


Figure 4: CSF as Percentage of National Revenue



Data source: IMF Statistics Databases: Government Financial Statistics (GFS), 2011

Measure of Intergovernmental Transfers

The CSF (T_i) has been allocated to each commune by two main components: the general administration (T_1), which is less than one third of the total transfers and the local development (T_2), which is not less than two thirds of the total CSFs. First, the amount of general administration (T_1) is defined in proportion to the number of commune/Sangkat council persons. Second, the portion of the local development (T_2)

comprises of three components: 1) equal share across all local jurisdictions, which is about 35% of T_2; 2) proportional to population, which is about 35% of T_2; and 3) proportional to poverty, which is about 30% of T_2 (RGC, 2007; RGC, 2010). Remeo (2001) suggests the detail formula of the allocation of CSF as follows:

$$T_i = [T_1 * (n_i/\sum n_i)] + \left[\propto \frac{T_2}{N_1} + \beta T_2 * \left(\frac{p_i}{\sum p_i}\right) + \gamma T_2 * (\pi_i p_i/\sum \pi_i p_i)\right]$$

Where:

T_i= Amount of Commune/Sangkat Fund transferred to commune/Sangkat (i)

T_1= Share of the CSF earmarked to support the general administration expenditures of the C/S councils

T_2= Share of the CSF earmarked to support the local development expenditures of the C/S councils

n_i= Number of councilors in commune/Sangkat (i)

N_1= Number of communes/Sangkats classified in category 1[4]

p_i= Population of commune/Sangkat (i)

π_i= Poverty index of commune/Sangkat (i)

α = Percentage (35%) of the local development expenditure of the CSF to be distributed as an equal share to all communes/Sangkats in category 1

[4] Category 1 shall include all the Communes/Sangkats that the Fund Board deems capable of making effective and efficient use of the Fund transfers designated for development expenditure (See Appendix 3).

β= Percentage (35%) of the local development expenditure of the CSF to be distributed in proportion to population of the communes/Sangkats in category 1.

γ= Percentage (30%) of the local development expenditure of the CSF to be distributed in proportion to population-weighted poverty index of the communes/Sangkats in category 1.

In short, the formula can be presented as follows:

$T_1 * (n_i / \sum n_i)$ = Amount of general administrative expenditure for commune (i)

$\propto \frac{T_2}{N_1}$ = Amount of the equal share of the local development expenditure for commune (i)

$\beta T_2 * \left(\frac{p_i}{\sum p_i}\right)$ = Amount of proportion of population size of the local development expenditure for commune (i)

$\gamma T_2 * (\pi_i p_i / \sum \pi_i p_i)$ = Amount of proportion of the poor of the local development expenditure for commune (i)

In addition, the poor as proportion of the local development expenditure of a commune or Sangkat can be measured by the number of the poor people divided by the total poor people of the whole country. It indicates that the CSF distribution is not dependent upon the absolute number of people in the commune but on the relative size of the people under poverty out of total number of the poor.

This formula aims to avoid vertical and horizontal fiscal imbalances in the distribution. In other words, the CSF of commune (i) has been allocated based on number of councilors, equal share, population size, and poverty index of commune (i).

Even though there was a general formula for the intergovernmental transfer allocation, the actual intergovernmental transfer allocation was not fixed. For instance, the amount of general administrative expenditure for commune (i) covered allowances to a number of councilors, salaries of local staff and other personnel expenses, and operational administrative expenditures. Furthermore, the IGT on development expenditures was distributed based on the Council for development of local infrastructures and the delivery of local economic and social services. This council is called the National League of Communes/Sangkats in Cambodia. This development expenditure was included construction, reparation, and maintenance of roads, bridges, markets, educational and health care facilities, irrigation networks and structures, and other agricultural storage facilities (RGC, 2002). This means that the intergovernmental transfer was varied from what it should be in the formula to what it is in the actual allocation.

2.2. Definition and Measure of Poverty

Generally, poverty is understood in terms of low income level, uncertainty in the future, vulnerability, powerlessness, lack of voice, freedom, being at risk, and inability to get basis of needs including education, health, and social and public services. One dollar ($1) a day (PPP$) is internationally considered as a poverty line comparison reference (World Bank, 1990; 2001).

In Cambodia, the poverty line is estimated to be about $0.5 a day (PPP$[5]) (MOP, 2004; UNDP, 2007). However, this thesis uses the IDPoor (Identification of the Poor Households) to measure poverty rate on the basis of visible fact criteria including sorts of occupation, main income source, owning assets and raising animals, number of dependent persons, and children education (MOP & DOLA, 2010). In addition, the NCDD used this IDPoor and Commune Data Base in order to generate the predicted family poverty rate at village level by using a statistical model which is called a robust multilevel mixed effect regression.

In order to produce an IDpoor, "Procedures for Identification of Poor Households" was implemented in rural areas. There is a participatory and consultative process to identify people under the poverty line by subnational government structures including chiefs of villages and of communes or Sangkats, and community representatives. The poor have been assessed into two categories: Poor Level 1, which refers to the very poor and the most vulnerable; Poor Level 2, which points to those who are normally poor. It is the fact that the poverty level in Cambodia is categorized based on questionnaire scores with its specific cut-off points and special circumstances of the households. The combination of Poor Levels 1 and 2 is the overall poverty rate of each commune. As a result, on average one third of each commune's population is identified as being poor.

The IDPoor has its strengths and weaknesses. The purpose of the IDPoor Program is indirectly to build capacity of local government structures and village representatives and to enhance sustainability of local democratic development. In addition, the

[5] Cambodian poverty line is well understood as Purchase Power Parity (PPP$) which is about $0.5 a day. In 2004 prices, the poverty line is estimated at Riel 2,351 (US$ 0.59) in Phnom Penh, Riel 1,952 (US$ 0.49) in other urban areas, and Riel 1,753 (US$ 0.44) in rural areas (MOP, 2004).

IDPoor is a social methodology to be used as a means to protect the targeted poor. On the web page of the Ministry of Planning, the poor households are offered "free or discounted medical services (e.g. through Health Equity Funds or Social Health Insurance), scholarships or other financial support to poor school pupils and students, rural development and agriculture-related services, allocation of social concession land to the poor, and many other uses" (MOP, Paragraph 6th, 2011).

Out of 13,848 villages of the whole country, MOP and DOLA (2010) reveal that the IDPoor covers only 7,114 villages from 2007 to 2009, 6,460 villages in 2010, and 4,198 villages in 2011. In other words, the poverty rate of communes/Sangkats was surveyed for the only mentioned jurisdiction (villages). However, the poverty rate of the rest of communes/Sangkats was estimated based on geographical regions that include the mountainous regions and surrounding Tonle Sap river region (MOP, 2010).

According to the history of Cambodia[6], the poverty was largely a result of the civil war (1970-1974), the genocide (1975-1979), and the long civil war (1980-1999), which dramatically destroyed the country's education, infrastructure, economy, human capital, and health service.

2.3. Review of Intergovernmental Transfers Studies

It is believed that the presence of intergovernmental transfers' formula does not necessarily assure that the allocation of resources is objective, fair, efficient or stable. The central government has an ultimate power to change yearly the allocation formula of the transfers in order to make an effective distribution of grant resources.

[6] The war and unstable politics history was extracted from the US Department of State, source: http://www.state.gov/r/pa/ei/bgn/2732.htm (Retrieved on February 2012)

Moreover, the formula is not fixed forever because the national government may have an intension to change the transfer allocation outcome in order to satisfy the government agenda. Therefore, the formula is not relevant in some case. Boex and Martinez-Varquez (2001) reveals that the existing horizontal allocation formula of Russia's equalization fund did not produce politically desirable results. In addition to the flexible formula, the equalization formula can be "neutralized" in case of Indonesia in 2001. The formula was irrelevant for the politicians, so that there is only a small fraction of the pool of equalization funds was used (Brodjonegoro & Martinez-Vazquez, 2004).

The main reasons of IGTs for each jurisdiction are the following: to share a part of national revenue among different jurisdictions, to explicitly allocate resources across subnational jurisdictions, to correct external factors of each jurisdiction, to substitute a part of local tax revenues, and to improve efficiency of fiscal decisions (Fisher, 2007; Von Hagen, 2007). IGTs can be used as a measure to achieve vertical and horizontal equalization of fiscal capacity as well as more efficient resource allocation.

Furthermore, it is believed that the intergovernmental transfers to local government appear to reduce poverty (Bjornestad, 2009; Sepulveda & Martinez-Vazquez, 2010; Yao, 2007). Since local governments are closer to taxpayers or citizens in terms of preferences and needs, it is more likely that local governments provide public services more effective than the central governments do (Martinez-Vazquez, 1994). In addition, Mikesell (1994) suggests that government responsibility and function at the lowest level of government can make efficiently the delivery of local services. Therefore, the local government expenditure to serve public services which the poor can consume

may be more likely to reduce poverty (Arze et al., 2003; Ravallion, 2004). In short, another main purpose of the transfers is to serve the poor. Ansolabehere et al. (2002) suggests that many state spending programs of the transfers are directed toward the poor or low-income citizens.

The poor are mainly considered as one factor among main determinants of local expenditure needs and revenue capacity factors which heavily have attracted larger transfers to a jurisdiction. The results of the international studies show that the local expenditure needs and revenue capacity have globally a positive impact on the level of intergovernmental grants that a jurisdiction receives (Boex & Martinzez-Vazquez, 2004).

Population size of a jurisdiction is one among main factors of the transfer determinants, which attract larger allocation of transfers. In other words, populous local government receives larger transfers (Alm & Boex, 2001; Boex & Martinez-Vazquez, 2004). The more population means a more secure resource to attract political support of subnational representatives and senators. Again, the economically dependent population is also relevant in determining local expenditure needs that attract larger transfers in order to improve education of the school-aged population and health care of elderly population (Ansolabehere et al., 2002).

However, the empirical studies of IGTs appear to suggest that the use of IGTs has been made by politicians at the central and subnational governments in order to partially serve their own self-interests for reelection (Alperovich, 1984; Grossman, 1994; Wright, 1974). In addition, transfers are used as a strategic tool in order to achieve the interest of politicians (Veiga & Pinho, 2007).

Moreover, the concept of political capital or political resources was introduced, which can be defined as resources through which a politician can get support from other politicians and/or voters in order to achieve policy and political interests (J. Kim, 2012). Political capital can be expressed in party alliance between the central and subnational government level; the population size of a jurisdiction is used as a proxy of the political capital (Grossman, 1994).

Political control between two levels of government is one among relevant factors of political capital for subnational politicians. The political control can be defined by legislative seats held by the same party who controls the central legislature (Grossman, 1994). At the same time, the political control is considered as the controlling of the same politicians at both central and subnational level, who are supposed to bring more amounts of transfers to the subnational jurisdiction. Another relevant factor of political capital is per capita representation of the subnational jurisdiction at the higher legislative body; the purpose of per capita representation is to secure intergovernmental transfers as grants (Ansolabehere et al., 2002; Knight, 2008; Porto & Sanguinetti, 2001). In evidence of political determinants of intergovernmental grants in Argentina, Porto and Sanguinetti (2001) claim that the allocation of federal grants could be associated with political variables such as the political representation of jurisdictions at Congress.

The distribution of IGTs by democratically elected politicians leads to serve the preferences of the median voter in order to maximize reelection possibilities (Boex & Martinez-Vazquez, 2004).

Given all of the political variables, the allocation of IGTs also depends on average household income, human development index, or gross regional domestic product (GRPD), which are considered as indicators of higher fiscal capacity (Boex & Martinez-Vazquez, 2004). In contrast, the study of IGTs of Canada depends on per capita personal and corporate income, shows different results (Vaillancourt, 2010).

In short, the intergovernmental transfers' formula is not vitally objective, fair, efficient or stable because the political capital and the central government's power appear to change the outcome of the transfer distribution in order to achieve their goals such as reelection. However, the poverty is one among determinants of local expenditure needs and revenue capacity that attract the larger transfer allocation. This research will examine the relation between the poor and the transfer allocation in empirical analysis chapter.

Chapter 3 Data and Methodology

This paper examines the potential effect of poverty on intergovernmental transfers (IGTs) of administrative and development components that a local jurisdiction receives from the central government in Cambodia. That is, the main objective of this study is to identify determinants of the intergovernmental transfers (IGTs) of administrative and development components with a special focus on the poverty level of each jurisdiction (commune/Sangkat). The study employs a 2009-2010 panel data;

data were taken from the Commune Data Base[7], Commune/Sangkat Fund Allocation[8], National Census 1998 and 2008, and the Identification of the Poor (IDPoor)[9]. The results from this paper can provide an insightful look at the intergovernmental transfers and the poor, thus informing the implementation of such transfers in the country. This will be a critical contribution for Cambodian policy and decision makers who will be better equipped with appropriate understanding of fiscal decentralization in the future and empowerment of local citizens, especially the poor.

3.1 Strengths and Limitations of Data

The sample of 2009-2010 dataset has both strengths and weaknesses which should be kept in mind when the results of this analysis are interpreted. There are three main strong features of data collection. First, the samples are the half of entire commune and Sangkats randomly selected from the whole population. Second, the surveys through which the information is collected employ standardized, well-tested procedures that include rigorous interviewer training, field supervision, and data processing procedures, for instance, IDPoor program, Commune Data Base, and Census 1998 and 2008. In addition, Commune/Sangkat Fund has been allocated by a general formula, which shows that there exists high certainty. Finally, the data for both years were collected and encoded in a consistent manner and contained comprehensive background information about the identification of the poor, political

[7] The Commune Data Base (CDB) were taken at the NCDD Databases at http://db.ncdd.gov.kh/cdbonline/home/index.castle (Retrieved on January 2012)

[8] The intergovernmental transfer or Commune/Sangkat Fund (CSF) and number of councilor are available from 2003 to 2011 at the Department of Local Administration of Ministry of Interior http://moi-dola.gov.kh/kh/cspage/csfinance/csfundincome/ (Retrieved on October 2011)

[9] Identification of the poor is percentage of poverty by commune, which is conducted *by* Ministry of Planning and the National Committee for Sub-National Democratic Development (NCDD) in 2009. Available at http://www.ncdd.gov.kh/en/resources/documents/district-and-provincial-data-books (Retrieved on November 2011)

affiliation, population, and number of council persons of a jurisdiction. In short, the data are very reliable and easy to analyze.

Nonetheless, there are four main limitations of the data. First, the Identification of the Poor (IDPoor) has been completed only half of the whole country population. In other words, the rest of commune/Sangkat poverty rates were estimated by a variation formulation on the basis of geographic region and socio-economic data. In addition, the poverty rates of the IDPoor did not study in all Sangkats of Phnom Penh, the capital city of the country. Thus, the paper examines the mentioned objectives throughout the whole country except Phnom Penh. Third, the 2010 data has not yet officially published by NCDD. Finally, there are a dozen missing data of poverty rate and land square area of remote communes in the Northern provinces. Therefore, the resulting data set used in our study is a typical unbalanced panel data, for which my empirical estimation is accordingly adjusted. The detail of definition of all variables, data sources summary, and summary statistics is provided in tables 2 and 3.

Table 2: Description of Variables and Data Source

Variables	Description	Data Source
Per capita Development Transfers	Per capita development transfers are measured by Intergovernmental transfers on development component which is divided by population size of each jurisdiction. The amount of the development transfers is measured by local currency, Riel.	Department of Local Administration, Ministry of Interior, Cambodia. http://moi-dola.gov.kh/kh/cspage/csfinance/csfundincome/ (Retrieved on October 2011)
Per capita Administrative Transfers	Per capita administrative transfers are measured by Intergovernmental transfers on administration component which is divided by population size of each jurisdiction. The amount of the administrative transfers is measured by local currency, Riel.	
Per capita total CSF	Per capita total CSF are the sum of per capita development and administrative transfers.	
Council persons	This represents the number of council persons per 1,000 population of the commune.	
Poverty Rate	Poverty rate is measured by IDPoor (Identification of the Poor), which identifies the poor as poor 1 and poor 2. The measurement of poverty rate is on the basis of visible fact criteria including sorts of occupation, house, furniture, and means of transportation.	Provincial Data Book, National Committee for Sub-National Democratic Development (NCDD) http://www.ncdd.gov.kh/en/resources/documents/district-and-provincial-data-books (Retrieved on October 2011)
Poverty square	Poverty square is measured by the square of poverty rate.	
Urban*Poverty	An interaction term between Urban and Poverty rate	
Urban[10]	The urban is used to distinguish between urban and rural area. It's urban jurisdiction if "urban" equal one. It is rural jurisdiction if "urban" equals zero.	1998 and 2008 General Population Census of Cambodia, Ministry of Planning
Land area (Km^2)	The land area of a jurisdiction is measured as kilometer square.	
Political Control	The political control is measured by all the political affiliation of chief, first deputy, and second deputy, who are in the same ruling party. It is coded as 1 if all of the commune council chief, first deputy, and second deputy are from the ruling party. Otherwise, it is coded as 0.	Commune Council Data Base, NCDD http://db.ncdd.gov.kh/ccd/home/index.castle (Retrieved on October 2011)
Population	The population resides in a commune or Sangkat.	Commune Data Base, NCDD

[10] In addition to the General Population Census, Urban status was updated by Royal decree on transferring city-to-province, change of administrative border between Phnom Penh and Kandal, and cutting two districts from Koh Kong to Preah Sihanouk; and Sub-decrees on Creation of Cities, Change of administrative border, and Transferring district-to-city, Department of Local Administration, Ministry of Interior, Cambodia, 2008 and 2009 http://moi-dola.gov.kh/kh/law-regulation/royal-decree/ ; http://moi-dola.gov.kh/kh/law-regulation/sub-decree/ (Retrieved on October 2011)

Dependent Population	The percentage of dependent population represents population between age of 0-17 and age of over-60; they are not working population.	http://db.ncdd.gov.kh/cdbonline/home/index.castle (Retrieved on October 2011)

Table 3: Description of statistic variables

Variables	Obs	Mean	Std. Dev.	Min	Max
PC Administrative Transfers	1,590	2,996.19	1,339.25	357.88	10,272.80
PC Development Transfers	1,590	8,579.91	4,918.34	2,461.88	36,661.44
PC Total Transfers (CSF)	1,590	11,576.10	6,133.61	2,819.76	46,893.54
Poverty Rate	1,590	28.22	9.38	0	54.02
Urban	1,590	0.11	0.32	0	1.00
Councilors per 1000 population	1,590	1.00	0.55	0.14	4.27
Population	1,590	8,661.20	5,175.51	1,172.00	78,315.00
% of Dependent Population	1,590	49.03	5.13	28.80	94.62
Political Control	1,590	0.11	0.32	0	1.00
Land Area (Km^2)	1,590	114.24	197.92	0.64	2,219.35

3.2 Econometric Model

To test the effect of poverty on the intergovernmental transfers, I employ the general formulation of panel data model used throughout this study as following:

$$Y_{it} = \beta X'_{it} + u_{it}; \quad i = 1, \dots, N \quad t = 1, \dots, T;$$

Where Y_i represents per capita administrative transfers, per capita development transfers, and per capita total CSF as the dependent variables; β represents the vector parameters to be estimated; X'_i represents the vector of explanatory independent variables; and u_{it} represents the random disturbance. In addition, N is the number of cross-sectional units (communes/Sangkats) and T is the number of time periods (years).

3.3 Dependent Variables

I employ three dependent variables: per capita amount of IGTs for administrative purposes, per capita amount of IGTs for the development component, and per capita amount of total IGTs. According to the formula of Commune/Sangkat Fund allocation, IGTs on administrative component, which are used as per capita administrative transfers, are determined by the number of councilors who represent different political parties. In addition, the size of population determines the number of councilors which are between five and 11. IGTs on development expenditures, which are used as per capita development transfers, are determined by three bases: equal share, proportion to population size, and proportion to the number of the poor. The last dependent variable is per capita total IGTs (Commune/Sangkat Fund), which is a sum of per capita administrative transfers and per capita development transfers. The unit of IGTs on administration and IGTs on development is a Riel, which is the local currency.

3.4 Independent Variables

This paper uses poverty rate, the number of council persons per 1,000 people, population size, percentage of dependent population, and size of land area as square kilometers of each jurisdiction (see Tables 2 and 3). Poverty rate is measured by the IDPoor (Identification of the Poor). The measurement of poverty rate is on the basis of visible fact criteria of a household, which includes sorts of occupation, house, furniture, and means of transportation. Along with the number of council persons, the political control is also a proxy of political capital of the local jurisdiction, which is measured by the political affiliation of chief, first deputy, and second deputy, who are in the same ruling party. This political control is used as a dummy variable in order to test the effect of different political party in charge of the local council.

In addition, the analysis also includes a dummy "urban", the square of poverty rate, and an interaction term between urban and poverty which is called urban*poverty. Urban*Poverty is used in order to test the effect between urban and rural locations of the jurisdiction on IGTs for administrative and developmental purposes. This is, it is intended to see if there is any difference in the effect of poverty rate between rural and urban jurisdictions. The square term of poverty rate is included to examine whether the effect of poverty rate is linear or curvilinear.

3.5 Econometric Problems

There is a main econometric issue: the omitted variables, which resulted from the unchanged value of variables in time variance such as urban value, number of council persons, land square area, and political control. Thus, a fixed group effect model could not be used. In short, this concern of omitted variables is admittedly a potential weakness of this study.

The data is a typical short panel data that covers 795 communes/Sangkats over two year period. With a small number of years, OLS regression is inappropriate due to its temporal and spatial correlation of the disturbances. There are serially correlated and heterogeneous across the panels.

3.6 Hypotheses Framework

Hypothesis 1: Holding everything else constant, as the poverty rate increases, the per capita transfer amount will increase as well;

Hypothesis 2: As the number of council persons increases, the per capita transfer amount will increase as well, ceteris paribus;

Hypothesis 3: The jurisdictions that are controlled by the ruling party will receive more transfers, ceteris paribus;

Hypothesis 4: As the percentage of dependent population increases, the per capita transfer amount will increase as well, ceteris paribus; and

Hypothesis 5: As the population size increases, the per capita transfer amount will decrease, holding everything else constant.

3.7 Model Specifications

To test these five hypotheses, this thesis uses three models. Each model employs three different dependent variables of per capita IGTs: per capita administrative transfers, per capita development transfers, and per capita total CSF. The three models are 1) the basic model, 2) the model with square term of poverty, and 3) the model with interaction term of urban and poverty. The hypotheses are tested using one-way random effect group model.

Model 1: Basic Model

$$(PC\ IGTs)_{it} = \beta_0 + \beta_1(Poverty)_{it} + \beta_2(Urban)_{it} + \beta_3(Councilor)_{it} + \beta_4(Population)_{it} + \beta_5(Dependent\ Pop)_{it} + \beta_6(Political\ Control)_{it} + \beta_7(Land\ Area)_{it} + \varepsilon_i \quad \textbf{(3.1)}$$

Model 2: Model with Square Term of Poverty

$$(PC\ IGTs)_{it} = \beta_0 + \beta_1(Poverty)_{it} + \beta_2(Poverty\ Square)_{it} + \beta_3(Urban)_{it} + \beta_4(Councilor)_{it} + \beta_5(Population)_{it} + \beta_6(Dependent\ Pop)_{it} + \beta_7(Political\ Control)_{it} + \beta_8(Land\ Area)_{it} + \varepsilon_i \quad \textbf{(3.2)}$$

Model 3: Model with interaction term of urban and poverty

$$(PC\ IGTs)_{it} = \beta_0 + \beta_1(Poverty\ rate)_{it} + \beta_2(Urban)_{it} + \beta_3(Urban\ Poverty)_{it} +$$

$$\beta_4(Councilor)_{it} + \beta_5(Population)_{it} + \beta_6(Dependent\ Pop)_{it} +$$

$$\beta_7(Political\ Control)_{it} + \beta_8(Land\ Area)_{it} + \varepsilon_i \quad \textbf{(3.3)}$$

Chapter 4 Empirical Analysis and Discussion

The objective of this chapter is to report the empirical results derived from the three econometric models regarding the impact of poverty on the allocation of IGTs. According to the basic model, the relationship between IGTs and the poverty rate is not at any significance level (see tables 4, 5 and 6), which is suspicious, so that the models 2 and 3 are introduced. The model with the square term of poverty (model 2) is introduced in order to investigate a potential curvilinear relationship. The model with interaction term of urban and poverty (model 3) is used in order to examine a relationship between urban poverty and the IGTs. Furthermore, this thesis uses three dependent variables over three models in order to analyze the effect of poverty on the different transfer allocation.

4.1 Per capita Administrative Transfers

The result of the effect of poverty on per capita administrative transfers is provided in table 4. The model 1 shows that the relationship between the poverty and the per capita administrative transfers is not at any significance level, which is suspicious. To further examine the relationship, the models 2 and 3 were introduced with either a squared term or an interaction term. The model 2 shows that the relationship is not linear but curvilinear. The poverty rate (with a positive sign) and the square of poverty (with a negative sign) are all significant at the 0.01 level. The result of model 2 can be interpreted that as poverty rate increases up to 29.68 %[11], then the transfer allocation increases as well at a decreasing rate. Beyond 29.68% of poverty rate, the per capita administrative transfers decrease at an increasing rate. This result of the

[11] Model 2 suggests a poverty function as curvilinear: f (p) = 36.21p – $0.61p^2$, then the derivative $f(p)'$ = 36.21- 1.22p. Thus, at the optimal point, p=$\frac{36.21}{1.22}$=29.68.

curvilinear relationship is not completely consistent with Hypothesis 1 since it indicates that depending upon the level of poverty rate its effect on administrative portion of the transfer changes.

In addition, the result of model 3 shows that the coefficient on the interaction term of poverty and urban is at the 0.01 significance level with a positive sign, which is consistent with Hypothesis 1. It indicates that on average poverty increases by one percent, the per capita administrative transfers will increases by 17.29 Riel for the communes/Sangkats in the urban area, ceteris paribus. However, it is also true that the urban jurisdiction still get smaller amount of the per capita administrative transfers, compared to rural ones, holding everything else constant. For the rural jurisdictions, the poverty rate does not have any significant relationship with the per capita administrative transfer amount. It seems that only for urban jurisdictions, the prediction by Hypothesis 1 holds.

Furthermore, the number of council persons and political control are at the 0.01 and 0.05 significance level, respectively, with the positive sign. It means that the more politicians the jurisdiction has, the more transfers it would receive. The communes/Sangkats that are controlled by the ruling party have better chance to get higher per capita transfers. They are also consistent with Hypotheses 2 and 3. However, the result also shows that the percent of dependent population lowers the amount of administrative portion of the transfer, which is not consistent with Hypothesis 4. However, as predicted by Hypothesis 5 and by the literature, the population size itself has a negative impact of the transfer amount.

Table 4: Results of per capita Administrative Transfers

	Model 1	Model 2	Model 3
Poverty	3.4844	36.2148***	0.4726
	(2.8712)	(9.9542)	(3.0922)
Poverty square	n.a	-.6081***	n.a
		(0.1774)	
Urban	-318.6557***	-262.1947***	-682.7648***
	(70.6388)	(72.1999)	(155.794)
Urban * Poverty	n.a	n.a	17.2912***
			(6.5923)
Councilor ratio	1962.904***	1988.913***	1973.571***
	(49.7303)	(50.0911)	(49.7555)
Population	-0.0215***	-0.0217***	-0.0207***
	(0.005)	(0.0050)	(0.0051)
Dependent population	-11.9205***	-11.1335***	-11.5692***
	(4.1128)	(4.1041)	(4.1061)
Political Control	152.7461**	164.8027**	161.998**
	(72.3117)	(72.0751)	(72.1857)
Land area (km2)	-0.0299	0.0858	-0.0038
	(0.1211)	(0.1252)	(0.1211)
R-square (between)	0.825	0.8266	0.826
Wald chi-square	3246.69	3287.53	3272.71
Prob > chi-square	0.0000	0.0000	0.0000
N	795	795	795

Note: Standard errors in parenthesis; Statistical significance: * <.1; ** <.05; ***<.01

4.2 Per capita development transfers

The result of the effects of key independent variables on per capita development transfers is provided in table 5. The model 1 shows that the poverty rate is at the 0.1 significance level with the negative sign. Holding everything else constant, on average adding one percent of poverty rate leads to decrease the per capita development transfers by -12.46 Riel. It means that this result is obviously not consistent with Hypothesis 1.

However, the result from model 3 shows that urban poverty is at the 0.05 significance level with a positive sign. Adding a percent of poverty in the urban jurisdictions increases per capita development transfers by 36.93 Riels, ceteris paribus. It means

that the positive relationship between poverty rate and development IGTs exists for the urban Sangkats. However, for the rural Communes, one percent increase in poverty rate lowers transfer amount by almost 20 Riels. It seems that only for urban jurisdictions, Hypothesis 1 holds.

In addition, the number of council persons per 1,000 residents is found to be a very important contributor to how much transfer the jurisdiction gets. From those three models, one additional council person adds more than 720 Riels to the per capita developmental transfers. The political control of the council by the ruling party members is also relevant such that those communes/Sangkats get as much as 853 Riels more than otherwise. These findings are also consistent with Hypotheses 2 and 3. The result also shows that the dependent population is at the 0.05 significance level with a positive sign, which is consistent with Hypothesis 4. Furthermore, the population size is also consistent with Hypothesis 5 since it is significant at the 0.01 level with a negative sign. The results from three models show that the population size is meaningfully negative effect on the per capita development transfers.

Table 5: Results of per capita Development Transfers

	Model 1	Model 2	Model 3
Poverty	-12.4613*	36.7522	-19.2296***
	(7.0996)	(24.2702)	(7.6513)
Poverty square	n.a	-0.9275**	n.a
		(0.4374)	
Urban	249.3481	331.5233**	-530.3849
	(164.2715)	(168.6053)	(369.8811)
Urban * Poverty	n.a	n.a	36.9332**
			(15.7028)
Councilor ratio	7257.33***	7298.219***	7281.322***
	(119.2176)	(120.6374)	(119.4834)
Population	-0.1270***	-0.1274***	-0.1252***
	(0.0118)	(0.0118)	(0.0118)

Dependent population	22.4120**	24.4694**	23.5372**
	(11.3021)	(11.3313)	(11.2961)
Political Control	853.0322***	871.8187***	872.8336***
	(167.9141)	(167.9627)	(167.8853)
Land area (km2)	0.5631**	0.7468***	0.6222**
	(0.2823)	(.295)	(0.283)
R-square (between)	0.9492	0.9495	0.9496
Wald chi-square	8736.97	8760.77	8767.53
Prob > chi-square	0.0000	0.0000	0.0000
N	795	795	795

Note: Standard errors in parenthesis; Statistical significance: * <.1; ** <.05; ***<.01

4.3 Per capita total CSF

The regression results on the determinants of per capita total CSF is provided in table 6. The result from model 1 shows that the relationship between poverty and per capita total CSF is not significant, indicating at least that there is no significant linear relationship between the two. However, with either an interaction term or a squared term of poverty, we can observe a little bit different relationship. The model 2 shows that the relationship is not linear but curvilinear. The poverty rate (with a positive sign) and the squared poverty (with a negative sign) are all significant at the 0.01 level. It can be interpreted that as poverty rate increases up to 26.82 %[12], then CSF allocation increases as well at a decreasing rate. Beyond 26.82% of poverty rate, it decreases at an increasing rate. This result reveals that the relationship between poverty and transfer amount is not that straight-forward. From the descriptive statistics table, the mean of poverty rate is 28%. The result indicates that the jurisdictions with relatively lower poverty rates get more per capita transfers, compared to those with higher poverty rates. If the poverty rate is low, then a marginal increase in the poverty rate is positively related with transfer amount. In

[12] Model 2 suggests a poverty function as curvilinear: f (p) = 78.30p – 1.46p^2, then the derivative $f(p)'$ = 78.30- 2.92p. Thus, at the optimal point, p= $\frac{78.3}{2.92}$ = 26.82.

addition, the result of model 3 shows that the coefficient on the interaction term of poverty and urban is at the 0.01 significance level with a positive sign. It indicates that in the urban jurisdictions as poverty increases by one percent, the per capita total CSF will increases by 51.39 Riel, ceteris paribus. However, the urban jurisdiction still gets smaller amount of the per capita transfers, compared to rural ones holding everything else constant. For the rural jurisdictions, poverty rate does not have any significant relationship with per capita total CSF amount. It seems that only for urban jurisdictions, Hypothesis 1 holds true.

Moreover, the relationships reported in the previous sub-sections between other key independent variables and the total transfer amount are found true in general to per capita total transfers: Political control of the council and the number of council persons are positively to higher transfer amounts, whereas the population size itself lowers the amount. The percent of dependent population does not particularly increase total per capita transfer amount. For the administrative portion of the transfers, the relationship was negatives. It seems that for the total transfers, those two effects have cancelled out each other.

Table 6: Results of per capita Total CSF

	Model 1	Model 2	Model 3
Poverty	0.9748	78.3011***	-8.4437
	(8.3921)	(28.6573)	(9.0381)
Poverty square	n.a	-1.4574***	n.a
		(0.5165)	
Urban	7.138	136.2548	-1077.903**
	(194.1765)	(199.0818)	(436.9212)
Urban * Poverty	n.a	n.a	51.3945***
			(18.5489)
Councilor ratio	9229.593***	9293.839***	9262.979***
	(140.9207)	(142.4434)	(141.1395)

Population	-0.1467***	-0.1473***	-0.1442***
	(0.014)	(0.0139)	(0.014)
Dependent population	7.8111	11.0438	9.3768
	(13.3596)	(13.3795)	(13.3435)
Political Control	973.3448***	1002.863***	1000.9***
	(198.4822)	(198.3231)	(198.3142)
Land area (km2)	0.356	0.6446*	0.4382
	(0.3337)	(0.3483)	(0.3343)
R-square (between)	0.9568	0.863	0.9573
Wald chi-square	9903.84	9955.37	9953.32
Prob > chi-square	0.0000	0.0000	0.0000
N	795	795	795

Note: Standard errors in parenthesis; Statistical significance: * <.1; ** <.05; ***<.01

4.4 Discussion

Poverty is one among the main determinants of local expenditure needs and revenue capacity factors, which may require larger transfers to the subnational jurisdictions of high poverty rate. However, the results reveal that their relationship is more complicated than at first glimpse. The relationship is curvilinear and different between rural and urban local jurisdictions. For example, per capita administrative transfers increase at a decreasing rate up to 29.68 percent poverty rate, while such relationship is not observed for the development mechanism of the transfer. The result of development transfers points to a negative relationship between poverty rate and transfer amount, especially for the rural jurisdiction, which is not consistent with Hypothesis 1 and other literatures (Boex, 2003; Boex & Martinzez-Vazquez, 2004; Brodjonegoro & Martinez-Varquez, 2004).

In addition, the interaction term between urban and poverty reveals that the effect of poverty rate is discriminative between urban Sangkats and rural communes, especially for the development portion of the transfers. For urban jurisdictions, the relationship is as expected from the literature, but for the rural jurisdictions, higher poverty

communes get smaller developmental CSF transfers. This is especially flying in the face of the policy objectives of the CSF itself. The results about the poverty factor may imply that the formula to distribute the CSF is not as perfect as it should be. For example, the poverty factor is considered in a way that a relative number of the people under poverty counts, while the number of the poor itself is irrelevant. That is why the rural communes with high poverty rate do not get more per capita transfers since the number of poor people in such jurisdictions is relatively small, compared to urban Sangkats.

The political control by the ruling party is supposed to attract more transfers to the subnational jurisdiction in the purposes of reelection and assurance of per capita representation. The results show that the number of council persons and the political control factor are significant in the determination of the transfer amount, which is consistent with what other studies have reported (Ansolabehere et al., 2002; Boex &Martinez-Vazquez, 2004; Knight, 2008; Porto & Sanguinetti, 2001).

The hypothesis about percent of dependent population (Alperovish, 1984; Boex & Martinez-Vazquez, 2004) finds supports only with the development transfers, which we believe makes sense since the administrative portion of CSF does not explicitly this factor. The literature argues that the dependent population requires more local expenditure needs, which strengths the needs to attract more transfers in order to improve education of the school-aged population and health care of elderly population (Ansolabehere et al., 2002).

Finally, population size of a jurisdiction is one among many transfer determinants, which attracts smaller per capita allocation of transfers. The results indicates that

population size is marginally small effect on the transfers with a negative sign, which is consistent with what other literatures reported (Alperovish, 1984; Alm & Boex, 2002; Boex, 2003; LGFC, 2003; Porto & Sanguinetti, 2001; Treisman, 1996)

Chapter 5 Conclusion

Since the beginning of decentralization reform in Cambodia, the Commune/Sangkat Funds has been utilized as the intergovernmental transfers in order to support the subnational administration and economic development. The adoption of a general formula of IGT allocation seems fair, equitable, and efficient. However, after implementation of this allocation, some of the rural communes appear to receive smaller per capita amount of transfers. This presents an interesting question of how much CSF fund transfers the high poverty local jurisdictions get from the national government as intended by the distribution formula. Hence, this thesis attempts to contribute to the empirical literature of determinants of intergovernmental transfers. It seeks to explain the relationship between poverty rate and allocation of transfers at the commune/Sangkat government level.

This study aims to examine how poverty rate affects IGT allocation that a commune/Sangkat has received from the national government between 2009 and 2010. The extended study also investigates how political factors of subnational governments affect the transfer distribution in the context of Cambodian decentralization, using models developed by Boex and Martinez-Vazquez (2004). The results reveal that the relationship poverty and the administrative and total transfers are not linear but curvilinear. In other words, the administrative transfers and total transfers increase at decreasing rate up to a certain level of poverty, but beyond such a critical peak, the transfers get decreased. The study also claims that the poverty has a negative effect on the development transfers, which is just the opposite of what the distribution formula intends to achieve. Fortunately, however, the study reveals that only the urban poverty

has a positive effect on all types of the transfers. Furthermore, the political control factor is supposed to attract more transfer amount to the subnational jurisdiction given the purposes of reelection and assurance of per capita representation. The results show that the number of council persons and political control factors have positive impacts on the IGT allocation which is the same as what other scholars have reported (Ansolabehere et al., 2002; Boex &Martinez-Vazquez, 2004; J. Kim, 2012; Knight, 2008; Porto & Sanguinetti, 2001).

The study highlights that the current allocation IGT formula may have some points of improvement to be more objective, fair, and efficient, given that the higher poverty communes in the rural areas have received smaller per capita amount of transfers. Therefore, the general formula of IGT allocation should prioritize the rural communes by adding higher proportion to the rural poverty of the subnational jurisdictions.

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APPENDIX 1: CLASSIFICATION OF URBAN AREAS

In order to investigate the impact of decentralization on poverty, the author distinguished between urban and rural area based on the classification of census 2008 and the Royal decree and Sub-decree on the creation and change of province and district border in 2008 and 2009. By census 2008, urban come to light as the following criteria:

- All provincial town (which were whole districts)
- Four districts of Phnom Penh Municipality (the other three were considered rural)
- The entire provinces of Sihanoukville, Kep, and Pailin, were called Krongs.

By the Royal decree and sub-decree of the Royal government of Cambodia in 2009, new towns were created such as Krong Bavet, Krong Poy Paet, and Krong Sourng which are out of the provincial towns. Below table is listed the urban town in Cambodia.

Table 7: List of City of Provinces

N.	Province/Municipality	Cities
1	Banteay Meanchey	Poay Paet; Serei Sorphorn
2	Battambang	Battambang
3	Kampong Cham	Kampong Cham; Sourng
4	Kampong Chnang	Kampong chnang
5	Kampong Speu	Chbar Mon
6	Kampong Thom	Stuoeng Sen
7	Kampot	Kampot
8	Kandal	Takmao
9	Koh Kong	Khemarakphumint
10	Kratie	Kracheh
11	Mondul Kiri	Senmonourom
12	Phnom Penh	(Capital city)
13	Preah Vihear	Preah Vihear
14	Prey Veng	Prey Veng
15	Pursat	Pursat
16	Ratanak Kiri	Ban Lun
17	Siem Reap	Siem Reap
18	Preah Sihanouk	(the whole province is urban)
19	Stung Treng	Stung Treng
20	Svay Rieng	Svay Rieng; Bavet
21	Takeo	Doun Keo
22	Oddar Meanchey	Samraong
23	Kep	(the whole province is urban)
24	Pailin	(the whole province is urban)

Data Source: Royal decree on transferring city-to-province, change of administrative border between Phnom Penh and Kandal, and cutting two districts from Koh Kong to Preah Sihanouk; and Sub-decrees on Creation of Cities, Change of administrative border, and Transferring district-to-city, Department of Local Administration, Ministry of Interior, Cambodia, 2008 and 2009 http://moi-dola.gov.kh/kh/law-regulation/royal-decree/ ; http://moi-dola.gov.kh/kh/law-regulation/sub-decree/ (Retrieved on October 2011)

APPENDIX 2: STATISTIC DESCRIPTION OF DATA

Table 8: Correlation Matrix of Selected Variables

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
(a)	1									
(b)	0.8834 (0.0000)	1								
(c)	0.9267 (0.0000)	0.9948 (0.0000)	1							
(d)	0.3584 (0.0000)	0.305 (0.0000)	0.3229 (0.0000)	1						
(e)	-0.0883 (0.0004)	-0.0015 (0.9527)	-0.0205 (0.4145)	-0.3355 (0.0000)	1					
(f)	0.872 (0.0000)	0.9118 (0.0000)	0.9216 (0.0000)	0.3272 (0.0000)	-0.0065 (0.7944)	1				
(g)	-0.5835 (0.0000)	-0.6313 (0.0000)	-0.6336 (0.0000)	-0.2575 (0.0000)	0.0963 (0.0001)	-0.5988 (0.0000)	1			
(h)	0.2038 (0.0000)	0.2363 (0.0000)	0.234 (0.0000)	0.5421 (0.0000)	-0.1881 (0.0000)	0.2355 (0.0000)	-0.1642 (0.0000)	1		
(i)	0.3579 (0.0000)	0.3985 (0.0000)	0.3977 (0.0000)	0.2241 (0.0000)	-0.0135 (0.5895)	0.3756 (0.0000)	-0.2783 (0.0000)	0.1785 (0.0000)	1	
(j)	0.233 (0.0000)	0.2611 (0.0000)	0.2603 (0.0000)	0.4666 (0.0000)	-0.0988 (0.0001)	0.2685 (0.0000)	-0.1193 (0.0000)	0.3075 (0.0000)	0.2044 (0.0000)	1

Variables Definitions

(a) Per capita Administrative Transfers

(b) Per capita Development Transfers

(c) Per capita Total Transfers (CSF)

(d) Poverty Rate

(e) Urban

(f) Number of councilor persons per 1000 population

(g) Population

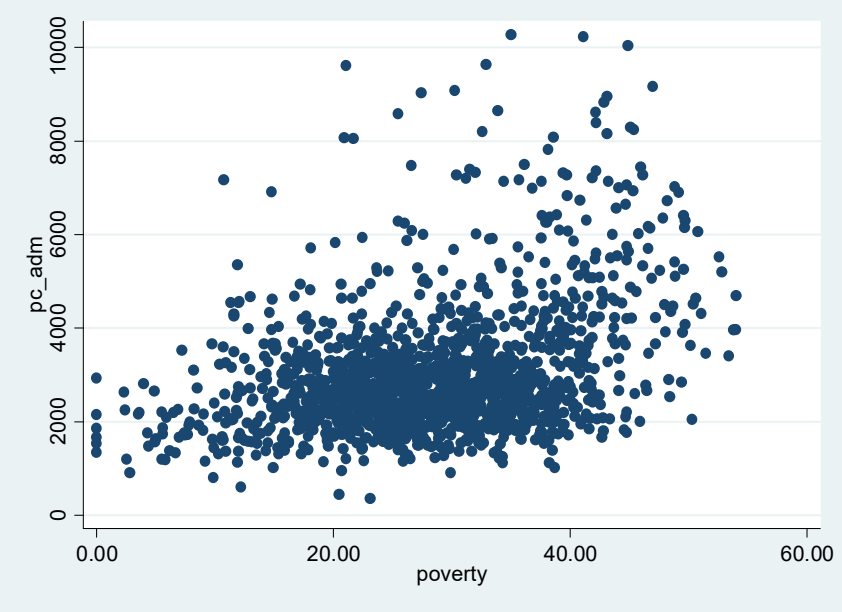
(h) Percentage of Depedent Population

(i) Political Control

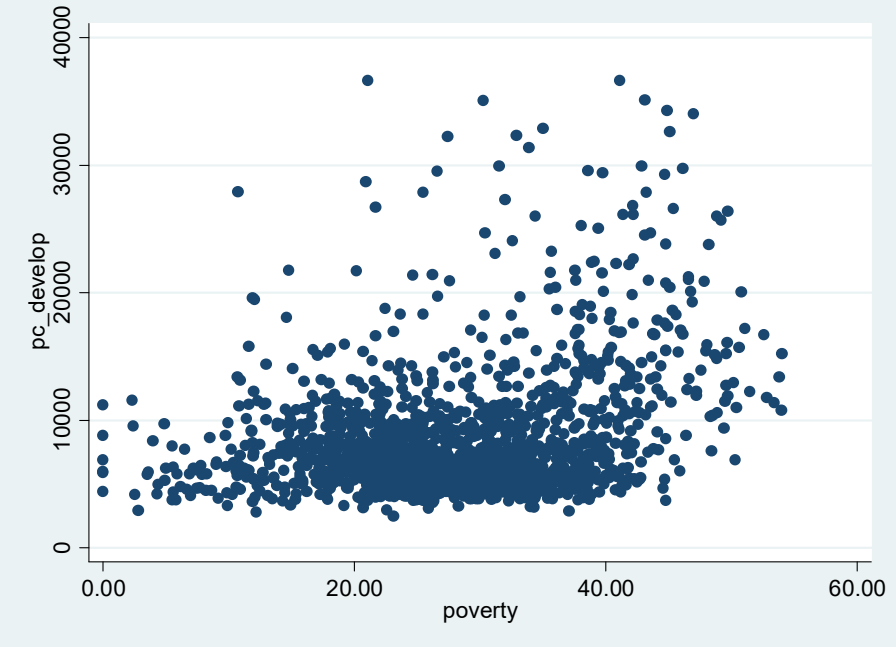
(j) Kilometer Square of Land Area of a commune

Note: P-value in the parentheses.

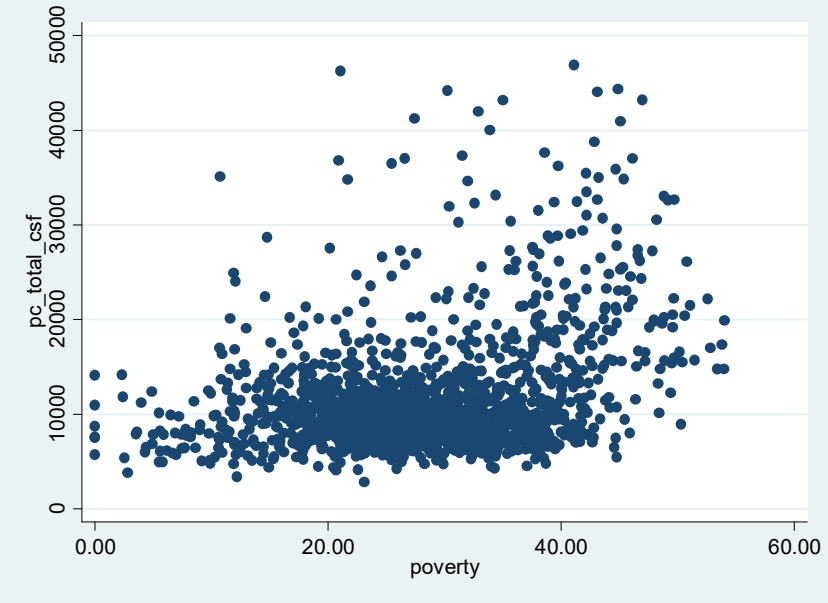
Graph 1: Illustration of the link between Per capita administrative transfers and poverty rate during the period of 2009-2010.



Graph 2: Illustration of the link between Per capita development transfers and Poverty rate during the period of 2009-2010.



Graph 3: Illustration of the link between Per capita total CSF and Poverty rate during the period of 2009-2010.



APPENDIX 3: LAW ON THE ESTABLISHMENT OF COMMUNE/SANGKAT FUNDS[13]

Based on the Sub-decree of Commune/Sangkat Fund, the administrative and development expenditure are allocated.

Article 13 states that the Fund Board shall establish a classification of the Commune/Sangkat in two categories.

[13] RGC. (2001). *Sub-decree (Anukret) 16/ANK/BK on the establishment of the Commune/Sangkat Fund.* Phnom Penh: The Royal Government of Cambodia

- Category 1 shall include all the Communes/Sangkats that the Board deems capable of making effective and efficient use of the Fund transfers earmarked for development spending.
- Category 2 shall include all other Communes/Sangkats

The Fund Board shall prepare and approve a multi-year plan for the gradual inclusion of all Communes/Sangkat Councils in Category 1. Based on the above plan and not later than the 1st October of each year, the Fund Board shall determine the number of the Communes/Sangkats to be included in category 1 in the next fiscal year.

Article 14 states that resources under the two components of the Fund shall be distributed and used according to the following provisions.

a) Resources of General Administration Components:
   - Shall be accessed by all Councils in categories 1 and 2
   - Shall be shared in proportion to the number of elected Commune/Sangkat councilors.
   - May be applied by the recipient Councils to any eligible administration or development expenditures as defined in article 15 below.

b) Resources of Local Development Component:
   - Shall be accessed by all Councils in category 1
   - Shall be distributed in three shares: an equal share, a share proportional to the population of the Commune/Sangkat and a share proportional to a poverty index, weighted by the population of the Commune/Sangkat.
   - May be applied by the recipient Councils only to development expenditures as defined in article 15 below.

The Ministry of Planning shall, not later than the 1st of September of each year, provide the Fund Board with updated official estimates of the followings:

- The total population of all Communes/Sangkats
- The poverty index of each Commune/Sangkat.

Article 15 states that transfers from the Commune/Sangkat Fund may be used by Commune/Sangkat Council to cover, in full or in part, any recurrent and investment expenditure that is reflected in the Council's approved budget and does not violate the Commune Law or any other law and regulation issued by the RGC.

"Administration expenditures" are recurrent and investment expenditures incurred by the Councils in the performance of their general administrative duties. They may cover the cost of:

- Allowances to Councilors
- Salaries of local staff and other personnel expenses
- Purchase or rental of Council's premises,
- Furniture and office equipment for the Council's or administration's facilities
- Repair and maintenance of administrative facilities
- Utility charges
- Purchase or rental of vehicles
- Fuel, lubricants and vehicles maintenance
- Other consumables and miscellaneous

"Development expenditures" are recurrent and investment expenditures incurred by the Council for the development of local infrastructures (with the exception of administrative facilities) and the delivery of local economic and social (but not administrative) services.

They may include:

- The survey, design, construction, repair and maintenance of roads, bridges, markets, educational and health care facilities, community centers, irrigation networks and structures, agricultural storage facilities, water and power supply and other economic and social infrastructure.
- Personnel and other recurrent costs associated with the operation of the local infrastructure and the delivery of related services.
- Support of community development programs managed by local NGOs and community-based organization, including local education and information campaigns for women and youth, environmental protection and natural resources management and other programs impacting on the welfare of local population.

Detailed instructions shall be issued by the Ministry of Finance, in conjunction with the regulation of the Commune/Sangkat budget to reconcile the "administration" and "development" categories with the classification of expenditures in the budget.

APPENDIX 4: LAW ON THE ADMINISTRATION AND MANAGEMENT OF COMMUNE/SANGKAT[14]

- **Article 42** states that commune/Sangkat shall have two types of roles, i) the roles to serve local affairs for the interests of commune/Sangkat and its residents; ii) the roles as an agent to represent the state under the appointment or delegation of power by the state authority.

- **Article 43** states that commune/Sangkat shall have duties in order to serve local affairs: i) maintain security and public orders; ii) arrange necessary public services and be responsible for the good process of those affairs; iii) encourage the creation of contentment and well-being of the citizens; iv)promote social and economic development and upgrade the living standards of the citizens; v) protect and conserve the environment, natural resources and national culture and heritage; vi) reconcile concepts of citizens have mutual understanding and tolerance; and vii) perform general affairs to meet the needs of citizens.

[14] **Source:** Law on the Administration and Management of Commune/Sangkat, 2001

-**Article 44** states that the commune/Sangkat shall have duties to comply with laws, Royal decrees, Sub-decrees, proclamations and other concerned legal instruments in order to play the roles as an agent to represent the state. In this case the state authority may delegate powers to the commune/Sangkat, together with the increase of capacity and providing with means, materials and budgets for implementation. The above delegation of powers shall be applied to the collectivity of Commune/Sangkat Council only.