



Dynamics of Poverty, Inequality and Thai Government Provincial Budget Allocations

Areeporn Asawinpongphan*

Abstract

This article examines the impact of government budget allocations (in per capita units) on inequality and poverty by single household level covered in 75 provinces. The study was based on in-depth analysis of the dynamics of government expenditures and other factors such as inflation, gross provincial product (GPP) and unemployment to the two main welfare indicators (inequality and poverty). The study applied panel data analysis on the provincial level. The results showed that government budget allocations per capita from each ministry can alleviate inequality to some extent; likewise, they can also reduce the poverty rate. Also, if other factors are considered, higher inflation in Thailand leads to higher inequality. This study can serve as guidance for the Thai government; research in more depth and detail could serve as a starting point for determining which government expenditures and programmes should be focused on more as investments to relieve inequality and poverty.

Keywords: *Inequality, Poverty, Government Budget Expenditure*

* Ph.D. candidate in Economics, School of Development Economics, National Institute of Development Administration
118 Moo 3, Sereethai Road, Klong-Chan, Bangkok 10240, THAILAND.
E-mail: a.areeporn@grads.nida.ac.th

การศึกษาการจัดสรรงบประมาณภาครัฐต่อความไม่เท่าเทียม และความยากจนรายจังหวัดในประเทศไทย

อารีพร อัสวินพงศ์พันธ์*

บทคัดย่อ

บทความนี้จะตรวจสอบผลกระทบของการจัดสรรงบประมาณของรัฐบาล (ทั้งหมดในหัวต่อหน่วย) ต่อความไม่เท่าเทียมกันและความยากจนในระดับครัวเรือนที่ครอบคลุมใน 75 จังหวัดของประเทศไทย (ยกเว้นกรุงเทพมหานครและบึงกาฬ) การศึกษาเป็นการวิเคราะห์ในเชิงลึกแบบไดนามิกของค่าใช้จ่ายของรัฐบาลและปัจจัยอื่น ๆ เช่น อัตราเงินเฟ้อผลิตภัณฑ์มวลรวม (GPP) และการว่างงานต่อสองตัวชี้วัดหลัก นั่นคือ ความไม่เท่าเทียมกันและความยากจน ผลการศึกษาแสดงให้เห็นว่าบางส่วนของ การจัดสรรงบประมาณของรัฐบาลจากแต่ละกระทรวงสามารถบรรเทาความไม่เท่าเทียมกันเช่นเดียวกัน นอกจากนี้ ยังสามารถลดอัตราความยากจน นอกจากนี้ หากพิจารณาปัจจัยอื่น ๆ เช่น อัตราเงินเฟ้อที่สูงขึ้นในประเทศไทยจะนำไปสู่ความไม่เท่าเทียมกันที่สูงขึ้น การศึกษาครั้งนี้สามารถเป็นคำแนะนำสำหรับรัฐบาลไทยในศึกษาเพิ่มเติมในรายละเอียดเชิงลึกของการใช้จ่ายภาครัฐที่ควรจะเน้นมากขึ้นในการลงทุนที่จะบรรเทาความไม่เท่าเทียมกันและความยากจน

คำสำคัญ: ความไม่เท่าเทียม ความยากจน รายจ่ายภาครัฐ

* นักศึกษาปริญญาเอกคณะพัฒนาการเศรษฐกิจ สถาบันบัณฑิตพัฒนบริหารศาสตร์
118 หมู่ 3 ถนนเสรีไทย แขวงคลองจั่น เขตบางกะปิ กรุงเทพมหานคร 10240
เมล: a.areeporn@grads.nida.ac.th

Introduction

Recently, rising income inequality and poverty are a growing concern for policymakers. High inequality can be a powerful obstacle to development and prosperity. First, given average income levels, higher income inequality means higher poverty; this can result in development traps, which prevent the poor from contributing to growth due to financial market imperfections and institutional constraints. Second, higher inequality shows the negative effect of aggregate income growth on poverty: the more inequality in income distribution, the faster the growth rate required to meet a given reduction rate in poverty. Thus, inequality lies at the core of stagnation. Third, high inequality can also cause conflicts over distribution and social tension, which can undermine the stability of policies and institutions. This definitely discourages investment and growth. As a result, many policymakers view more equal income distribution and poverty reduction as a desirable goal. One of the fiscal tools that the Thai government uses to distribute and transfer income is public spending; pending priorities must be well defined. It is often desirable to target social transfers to those beneficiaries whose needs are most urgent, such as the poor.

Inequality and Poverty in Thailand

The Thai government has focused on poverty reduction by using the country's public financial management and optimizing public services. However, the results show that the government has been successful in overall poverty reduction, but inequality continues to be an issue.

Figure 1 shows that Thailand's economic growth rate has developed successfully during 1988-2009. The rate of economic growth has improved continuously, and as a result, the poverty level has dropped. However, the inequality rate has remained very high. In the last 20 years, statistics show that the average rate of economic growth of the country has been 5.1%, and in the same period, the poverty rate fell from 40% in 1990 to approximately 10% in 2009. If the inequality rate is measured by the GINI index, it was constant at 0.49 in 1990 and 0.48 in 2009, reflecting the fact that although poverty rates dropped significantly, the disparity still exists.

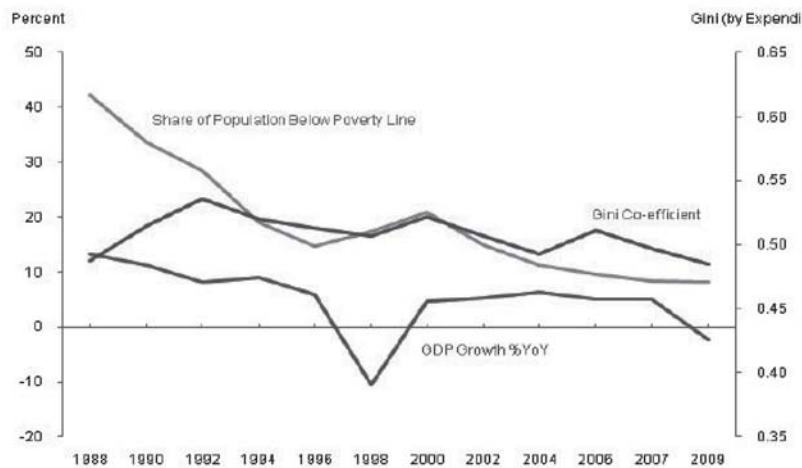


Figure 1: History of Economic Growth, Poverty and Income Disparity

Source: Vimolsiri, P. 2011: 42.

Many developed countries have been successful in alleviating inequality and poverty by restructuring government and authorizing local government to give funds directly to the poor.

For Thailand case, if considered in terms of the budget allocation per capita in each province or region, inequality has not been reduced. Some provinces and regions have been allocated a high budget per capita in a specific year and for a specific objective.

Table 1: Inequality of Government Budget Distribution per Capita to Each Region (THB)

Region	2006	2007	2008	2009	2010	2011	Total
Central	3363.0	3793.7	4091.1	1586.4	1398.8	4291.4	3087.4
North	3855.8	4848.5	5672.3	3157.6	2782.3	5120.7	4239.5
Northeast	3198.1	3112.6	3822.9	2182.6	1811.8	3302.6	2905.1
South	3579.9	4584.1	5566.2	2815.8	2215.5	4473.7	3872.5

Table 1 shows the budget allocation to the northeastern region was the lowest, even though this region had the highest poverty and high inequality. Also, as per national budget allocation, the government's large investments in education, transportation and agriculture sector.

The point is made that different budget allocations in each year and in each province from each ministry can effectively alleviate inequality and poverty, or not.

Objective of the Study

To examine the extent of how Thai government budget is allocated by provinces; and specifically to test the hypotheses that government social spending are, by and large, pro-poor and alleviate the inequality.

Literature Review

Hyun H. Son (2006) did study by using 1998 Socio-Economic survey in Thailand. She derived the poverty elasticity for the general class of poverty and proposed the pro-poor index that can be used to assess government expenditure and tax policies. The pro-poor index from the study suggests that while there are any government subsidies, it will benefit the poor more than the non-poor and achieve the maximum reduction in poverty.

There are many researches trying to explore some public expenditure to income inequality and poverty below are examples:

Sylwester (2000a) conducted cross-country studies in OECD countries, Latin America, East Asia and Africa from 1970 to 1990. The results show that countries with more invest in public education as a percentage of GDP had lower income inequality, even though the effects were slow to be realised. Sylwester used the change in income inequality as a measurement to limit the potential for reverse causation:

$$\Delta \text{INEQ}_i = \alpha X_i + \beta \text{GEE6069}_i + \gamma Z_i + \varepsilon_i$$

Where:

- 1) $\Delta \text{INEQ} = \text{INEQ90} - \text{INEQ70}$
- 2) GEE6069: Average ratio of education expenditures to GDP from 1960-1999
- 3) X: Control variables
- 4) Matrix Z: Other control variables to determine the robustness of earlier findings

The result is shown in Table 2 below.

Table 2: The Relation of Inequality with Other Variables (Least Square Regressions, Dependent Variables is DINEQ)

Column	(1)	(2)	(3)	(4) OECD	(5) LDC
Constant	149.4668 (91.0719)	112.9233 (93.8924)	124.5366 (101.9735)	37.7607 (54.4581)	2.0402 (11.7877)
LGDP70	-34.2342 (22.5008)	-25.3216 (22.6339)	-27.7465 (25.0802)	-5.8436 (6.2898)	-0.5526 (1.6607)
HUM70		1.6807*** (0.5545)	1.6392*** (0.5510)	3.0048*** (0.6379)	1.7100* (0.9714)
GEE6069	-142.1178** (66.9226)		-146.3729* (84.9644)	-148.9432* (76.9261)	-105.2817 (87.9737)
EASIA	3.1569 (2.0003)	2.2458 (1.9392)	2.4003 (2.0378)		-0.9532 (3.0488)
AFR	10.7436** (4.6119)	10.1712* (5.2300)	10.1691* (5.1922)		17.1505*** (2.6229)
LAAM	-1.5639 (2.1519)	-1.8973 (2.3183)	-2.3603 (2.3431)		-2.8244 (2.5389)
OECD	-1.3358 (2.7399)	-2.9520 (2.6232)	-2.3968 (4.8232)		
POP70	-0.9363 (0.6649)	-0.8090 (0.7339)	-0.8508 (0.6920)		
BMP7074	4.5729*** (1.3341)	4.5837*** (1.3108)	4.5489*** (1.2825)	-126.8236 (152.1656)	4.4272*** (0.7724)
POL7274	-0.6256 (0.4900)	-0.8222 (0.5311)	-0.7713 (0.5341)		
PIN7074	-6.0384 (15.0739)	-5.8993 (14.5028)	-7.0247 (14.7956)		
SQLGDP70	2.0479 (1.4619)	1.7061 (1.5074)	1.6001 (1.6060)		
GDE6069	36.1985 (35.4874)	18.2226 (34.4124)	22.2417 (34.4125)		
GVX6069	11.2788 (15.5683)	7.4622 (14.8763)	10.8165 (14.3383)		
ASEC70	0.2604*** (0.0775)				
AHIGH70	-0.0532 (0.2192)				
LGEE6069		-4.5578* (2.2510)			
OGEE6069			-11.6364 (112.6134)		
INF6089				-0.7548 (0.6546)	-0.2600*** (0.0960)
STINF6089				1.0743 (0.8477)	0.1265*** (0.0439)
R ²	0.6533	0.6268	0.6292	0.6910	0.6440
Number of observations	50	50	50	19	30

* All regressions use White's correction for heteroskedasticity.

* Statistically significant at the 10% level.

** Statistically significant at the 5% level.

*** Statistically significant at the 1% level.

Source: Sylwester, 2000(a): 47.

The results show a negative relation between the changes in income inequality and education expenditure. The table also separates the effect of education expenditure in OECD and Non-OECD countries; for OECD countries, the coefficient of public education expenditures is -149, and significant at ten per cent confidence intervals. Conversely, in less developed countries, the coefficient shows -105, with less magnitude compared to developed countries; there is no significance at the ten per cent interval.

Van Doorslaer (1997) studied income-related inequalities in health in industrialised countries. The results suggested that although it was not necessarily true that income-related health inequality was closely related to income inequality, there does appear to be a correlation between the ill-health concentration index

and the GINI coefficient for disposable equivalent income. However, the correlation is not perfect. Sweden and the United Kingdom (UK) are interesting outliers. In contrast to the UK, Sweden shows a lower health inequality than would be expected if considered on its given income inequality. The study also explored additional factors that might affect some of the variation in health inequality not explained by income inequality; however, these variables were jointly insignificant in a regression explaining cross-country differences in health inequality.

Leal, Dayton, Demery and Mehra (2000) studied public subsidies on health care in terms of efficiency and equity in African countries, using the benefit incidence of public spending on curative health care as a measurement. The model is shown below:

$$x_j = \sum_{i=1}^3 \frac{H_{ij}}{H_i} \left(\frac{S_i}{S} \right) \equiv \sum_{i=1}^3 b_{ij} s_i$$

Where:

- 1) X_j : Value of the total health subsidy to group j
- 2) H_{ij} : Number of health visits of group j to health facilities at level i
- 3) H_i : Total number of visits across all groups
- 4) S_i : Government net spending on health care at level i

The result was as below:

Table 3: Benefit Incidence of Public Spending on Health in Selected African Countries

Country	Quintile shares of								Total subsidy as % of per capita expenditure	
	Primary facilities		Hospital outpatient		Hospital inpatient		All health			
	Poorest	Richest	Poorest	Richest	Poorest	Richest	Poorest	Richest	Poorest	Richest
Africa										
Côte d'Ivoire (1995) ^a	14	22	8	39			11	32	2.0	1.3
Ghana (1992)	10	31	13	35	11	32	12	33	3.5	2.3
Guinea (1994) ^a	10	36	1	55			4	48		
Kenya (1992) ^{a, b}	22	14	13	26			14	24	6.0	1.1
Madagascar (1993) ^a	10	29	14	30			12	30	4.5	0.5
United Republic of Tanzania (1992–93)	18	21	11	37	20	36	17	29	NA ^c	NA
South Africa (1994) ^a	18	10	15	17			16	17	28.2	1.5
Others										
Indonesia (1990)	18	16	7	41	5	41	12	29	1.0	0.5
Viet Nam (1993)	20	10	9	39	13	24	12	29	2.1	0.9

^a Hospital subsidies combine inpatient and outpatient spending.

^b Rural only.

^c NA = not available.

Source: Leal, Dayton, Demery and Mehra, 2000: 70.

From Table 3 above, two messages are delivered. Firstly, curative health spending in Africa was not well targeted to the poorest. Subsidies flowing to the poorest were approximately 20 per cent less than the flow to the richest. Secondly, health spending was progressive; subsidies to the poorest group amounted to a higher share of that group's total household expenditures than did the subsidy to the richest quintile, especially in South Africa. This means that with other factors being constant, if the government provided all households with an annual income transfer (not in health subsidy), the income expenditure distribution would be improved.

Redistributive Policy

The government redistributes social welfare from different group for equality purpose. This happened when the government provides benefits to people by social programs.

“One premise of redistribution is that money should be distributed to benefit the poorer members of society, and that the rich have an obligation to assist the poor, thus creating a more financially egalitarian society” (Mayank Singhal, 2011) Ke-young Chu, Hamid Davoodi and Sanjeev Gupta (2000) studied the income

distribution in developing countries which impacted by tax and government social spending, main results surprisingly show that on average, income inequality in developing countries is lower than in industrial countries. However, many developing countries have experienced an increase in income inequality based on pre and post-tax income measurement. The developed countries improve the distribution effectively by taxes and government specific budget while the developing countries do not have adequate **redistributive program** to achieve a post-tax, post transfer income equality. Furthermore, in general, Education, health and transfer program in developing countries had a progressive incidence but not well targeted.

Edwin Goni, Humberto Lopez and Luis Servin (2008) mentioned In Latin America, the big difference in income inequality between Latin America and the more developed countries bases not so much from market forces but in the **redistributive power of state**. The gap between these regions in terms of income inequality is much bigger after taxes and public transfers than before the redistribution.

Median Voter Theorem

The median voter theorem holds that as income distributions are skewed to the right, the preferred amount of redistribution is a function of the relative position of the median voter on the income scale. “The greater the distance between the median voter’s income and society’s average income, the greater is society’s preferred amount of redistribution. The preferred amount of redistribution should be that which brings the median income in line with the average income.” (Oren M. Levin-Waldman, Ph.D., 2014)

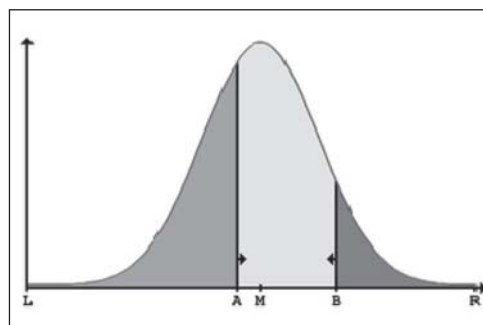


Figure 2: Median Voter Theorem

Scope of the Study

The scope of this empirical study was limited to the relationships between provincial poverty and inequality measures and government spending, using annual data for 2006 to 2011. There were at least two reasons to focus on this period: First, since the 1997 Constitution was enacted, there has been a significant increase in government social expenditures due to constitutional mandates (stipulated in the Constitution as “Fundamental State Policies”). Second, this study focused on government social expenditures (such as education, health, and social welfare); during the study period, the GFMS (government financial management information system) was fully utilized, which provides classification by ministry (20 units). However, this study chose to drop some ministries (e.g., Defence and Science and Technology) due to their characteristics of being “pure public goods.”

Accordingly, this article used government budget allocations from nine ministries and local funds: Public Health (with health insurance fund), Education, Social Development and Human Security, Office of the Prime minister, Agriculture and Cooperatives, Transport Commerce, Interior and Industry.

Hypothesis, Methodology and Model

The hypothesis to be tested was that at the provincial level, government budget allocations from each interested ministry can alleviate income inequality and poverty. (Study time frame: 2006 to 2011).

This was done by:

1. Collecting independent variables from each province, which were:

Independent Variables	Source
Ministries' budget allocation	Bureau of the Budget
Gross provincial product (manufacturing and agriculture)	the National Economics and Social Development Board
Unemployment	The National Economics and Social Development Board
Inflation	The National Statistics Organization

2. Collecting dependent variables from each province, which were:

Dependent Variables	Source
GINI	Thailand Socio-Economic Survey 2006-2011
Poverty rate	The National Economics and Social Development Board

This article used the following general equation to evaluate the effect of government expenditure on provincial inequality and poverty ratios:

$$(Y_1, Y_2) = F(G1t, G2t, X_{it})$$

Or:

$$Y_{it} = \beta X_{it} + \alpha G_{it} + \mu$$

Where:

- 1) Y = social indicator reflecting public spending and other socioeconomic indicators, which are provincial GINI and poverty ratio
- 2) G_{it} = Per capita budget allocations (9 ministries and 1 local fund)
- 3) X_{it} = Other variables such as GPP, unemployment and inflation.

Theoretically, an increase in government budgets allocation is the critical means of improving the distribution of human capital and earning capacity (lower poverty and increasing the equality).

Regression was applied to test which method to use in the analysis, fixed effect or random effect by using Hausman test. Setting the null hypothesis with the preferred model as random effects and the alternative fixed effects.

After testing, the models were fitted with the fixed effect method because:

- 1) They focus only on analysing the effect of variables that vary over time, which analyses the relationship between independent variables and outcome variables within an entity (country, province and region).
- 2) Each entity has its own individual characteristics that may or may not influence other independent variables (endogeneity).

Results and Analysis

1. Effect on Income Inequality

**Table 4: The Effect of Government Spending to the GINI Coefficient in Thailand (by Province)
by Fixed Effect Method, 2006-2011**

GINI	Coef.	Robust Std. Err.	t	P> t
educap	3.49E-06	2.82E-06	1.24	0.22
healthcap	-0.00039	0.0000416	-9.46*	0
socialcap	0.000156	0.0002311	0.68	0.501
pmcap	0.00118	0.0002036	5.8*	0
agricap	0.000035	8.04E-06	4.36*	0
transcap	1.95E-05	0.0000113	1.72	0.089
comcap	-2.1E-05	0.0000415	-0.51	0.614
intcap	9.63E-05	0.0000193	4.99*	0
indcap	-0.00034	0.0004348	-0.78	0.438
localcap	-4.98E-06	6.80E-06	-0.73	0.467
unemploy	-0.01116	0.0070937	-1.57	0.12
inflation	0.486768	0.1006035	4.84*	0
gppmcap	-0.00048	0.0002065	-2.3*	0.024
gppacap	0.000604	0.0011168	0.54	0.59
_cons	1.057105	0.0696365	15.18	0

Number of observations: 375; * Significance at 5%

Table 5: The Effect of Government Spending to the GINI Coefficient in Thailand (by Province)
by Random Effect Method, 2006-2011

GINI	Coef.	Robust Std. Err.	z	P>z
educap	5.25E-07	1.78E-06	0.3	0.768
healthcap	-0.00017	0.0000298	-5.63*	0
socialcap	-0.00028	0.0000828	-3.41*	0.001
pmcap	0.000992	0.0001857	5.34*	0
agricap	3.91E-05	7.11E-06	5.51*	0
transcap	-1.4E-05	0.0000102	-1.41	0.159
comcap	-1.3E-05	0.0000426	-0.31	0.758
intcap	0.000121	0.0000208	5.83*	0
indcap	-0.0005	0.0005949	-0.83	0.404
localcap	-2.9E-05	5.49E-06	-5.29*	0
unemploy	-0.00079	0.0068994	-0.12	0.908
inflation	0.364574	0.0752308	4.85*	0
gppmcap	-0.00023	0.0001135	-2.01*	0.045
gppacap	-4.4E-05	0.0002567	-0.17	0.865
_cons	0.85843	0.0601366	14.27	0

Number of observations: 375; * Significance at 5%

2. Effect on the Poverty Ratio

**Table 6: The Effect of Government Spending on the Poverty Ratio in Thailand (by Province)
by Fixed Effect Method, 2006-2011**

pr	Coef.	Robust Std.Err.	t	P>t
educap	0.00023	0.0002604	0.88	0.38
healthcap	-0.01851	0.0035691	-5.19*	0
socialcap	-0.02767	0.0112903	-2.45*	0.017
pmcap	0.002597	0.0138661	0.19	0.852
agricap	-0.00068	0.0008601	-0.79	0.43
transcap	-0.00057	0.000789	-0.72	0.475
comcap	-2.1E-05	0.0091744	0	0.998
intcap	-0.00344	0.0012082	-2.85*	0.006
indcap	0.010459	0.015121	0.69	0.491
localcap	-0.00085	0.0004655	-1.83**	0.071
unemploy	0.707701	0.9525354	0.74	0.46
inflation	-3.98753	10.82776	-0.37	0.714
gppmcap	0.016592	0.0127896	1.3	0.199
gppacap	0.03366	0.0705565	0.48	0.635
_cons	53.64082	5.421591	9.89	0

Number of observations: 375; * Significance at 5%, ** Significance at 10%

**Table 7: The Effect of Government Spending on the Poverty Ratio in Thailand (by Province)
by Random Effect Method, 2006-2011**

pr	Coef.	Robust Std. Err.	z	P>z
educap	-8.6E-05	0.0002395	-0.36	0.721
healthcap	-0.00704	0.0031211	-2.25*	0.024
socialcap	-0.00837	0.0084707	-0.99	0.323
pmcap	0.018932	0.0133418	1.42	0.156
agricap	4.35E-05	0.0007674	0.06	0.955
transcap	-0.00182	0.0008943	-2.03*	0.042
comcap	-0.00074	0.0081153	-0.09	0.927
intcap	-0.00114	0.0012832	-0.88	0.376
indcap	-0.01044	0.0251142	-0.42	0.678
localcap	-0.00207	0.0005019	-4.13*	0
unemploy	1.121176	1.019719	1.1	0.272
inflation	7.478175	10.58171	0.71	0.48
gppmcap	-0.03124	0.0104046	-3*	0.003
gppacap	-0.09583	0.041801	-2.29*	0.022
_cons	48.5826	6.544574	7.42	0

Number of observations: 375; * Significance at 5%

The results show that Thai fiscal policies to alleviate income inequality and poverty were effective and pro-poor to some extent.

For the impact on inequality, considering fixed effect method, government expenditures that can reduce inequality are from Public Health including the Health Insurance Fund, which on average was 1400 THB per head.

However, considering the inequality reduction policy, some government budget allocations from this study have been shown to exacerbate inequality. These are from the Ministry of the Office of the Prime Minister, the Ministry of Interior and the Ministry of Agriculture and Corporate. Even the budget allocation from the Ministry of Agriculture was a bit high (an average of 550 THB per head). This might be because during the study years, the government focus on expanding the irrigation system did not focus directly on the poor or on solving inequality.

Neutral budget allocations were from the Ministry of Education, the Ministry of Industry and the Ministry of Commerce. This implies that even the government's focus on investing huge amounts in education (the average per-capita budget was 3500 THB) did not directly help the poor, and this budget may have needed to absorb other incurred costs, such as those for transportation and stationery. Likewise, the Ministry of Commerce did not effectively roll out the program of consumer pricing.

The statements above are also supported by the information that in 2011, provinces that had received a higher budget allocation were the big provinces in each region, such as Ayutthaya, Phuket, Chiang Mai, and Songkhla. However, among provinces with a low government allocation per capita (less than 11,001 THB), most were from the northeastern region (Table 8). As a result, this fiscal tool might not be fully effective in terms of inequality reduction.

Table 8: Number of Provinces and Government Budget Distribution per Capita Disaggregated by Region and Province in 2011 (THB)

Region	Less than 10,000	10,001- 11,000	11,001- 12,000	12,001- 16,000	16,001- 18,000	18,001- 20,000	20,001- 30,000
Central		5	2	10	4	2	2
North			4	8	2	1	2
Northeast	4	7	1	6		1	
South			1	10	1		2
Total	4	12	8	34	7	4	6

For the effect on inflation, higher inflation leads to higher inequality. This result is also supported by Galli and Hoeven (2001). During low inflation rate if the country conducted the restrictive monetary policy, it will increase the inequality.

From the study years, considering fixed effect method, we can see that pro-poor government expenditures came from the Ministry of Public Health (with the health insurance fund), the Ministry of Social Development and Human Security and the Ministry of Interior.

From the summarized poverty table below, we can see that in 2006, there were 27 provinces in Thailand with poverty ratios lower than 20 or counted as non-

poor provinces. This number increased over the time of this study to 57 provinces in 2011. For provinces counted as moderately poor (with a poverty ratio in the range of 20-39.99), there were 40 in 2006 and only 16 in 2011. Likewise, eight provinces were extremely poor (with a poverty ratio higher than 40) in 2006 and only three in 2011. This means that the poverty reduction program in Thailand was conducted successfully.

Table 9: Summary of Poverty Rate Category in Thailand

Category	Poverty Rate	Year	
		2006	2011
Non-poor	0-19.99	27	57
Moderately poor	20-39.99	40	16
Extremely poor	40 and above	8	3

Conclusions

Rising income inequality and poverty are now a focus for policymakers. They are powerful obstacles to development and prosperity. High economic growth does not always ensure improvements in income distribution and reduction of the poverty rate. In fact, sometimes the process of growth cannot avoid increasing inequality, at least in the early stages. Accordingly, interest in the role of fiscal policy as a redistributive instrument in the short and long term is highlighted.

This article mainly focused on per capita government budget allocations. The results showed that at the provincial level, Thai fiscal policies to alleviate income inequality and poverty were effective and pro-poor to some extent. The result is further study from Hyun H. Son (2006) who mentioned that while there are any government subsidies, it will benefit the poor more than the non-poor and achieve the maximum reduction in poverty. However, if consider by each type of social spending, only some budget allocation can reach the target of poverty and inequality reduction.

From the literature reviews which show that budget to support education can alleviate the inequality and poverty, the article can see that for Thailand case, the budget allocation from the Ministry of Education cannot alleviate on these

purpose. However, for the budget flow from the Ministry of Public Health, can reduce the inequality and poverty effectively which is opposite from the relevant studies in the past.

As a result, sound economic and social policies help to limit or improve unfair income distribution and reduce the poverty rate. Using non-budgetary government spending might also might help income distribution and poverty reduction.

Some interesting points warrant further study. Firstly, when studying the implications of inequality, one should also expand the scope of the study, not just based on income but also wealth distribution, which can benefit social welfare overall. Secondly, this study focuses only on the flow of government expenditures to each province from each ministry. This expenditure by each ministerial department does not address the problem of poverty and inequality. As a result, future studies should point out horizontal government expenditures or area-based budgeting including three possible budget channels: provinces, local administrative organizations, and citizens.

As well, in the near future, the Parliamentary Budget Office will be formed to assist parliament members with budget allocation, and equalization budgeting is likely to be a topic for reform. Finally, future studies should also expand the scope for fiscal tools, especially for taxation, which can benefit social distribution. A study from Patmasiriwat (2006) mentions that 2006 statistics show that earmarking property taxation schemes can form a part of pro-poor government spending, as they entail income redistribution from rich households to poor households and therefore a social welfare gain.

Acknowledgements

This article could not have succeeded without the invaluable support of Professor Direk Patmasiriwat, Professor Nattapong Thongpakde and Assistant Professor Amornrat Apinunmahakul.

This paper was edited by Proof Reading services.com

References

- Burgess, R. (2001). *Halving Global Poverty*. London: London School of Economics.
- Cardoso, E. (1992). *Inflation and Poverty*. Cambridge MA: National Bureau of Economic Research.
- Chu, K.Y., Davoodi, H. and Gupta, S. (2000). *Income Distribution and Tax and Government Social Spending Social Spending Policies in Developing Countries*. Washington DC: International Monetary Fund.
- Doorslaer, V. (1997). Income-Related Inequalities in Health: Some International Comparisons. *Journal of Health Economics*. 16(1), 93.
- Elbers, C., Fujii, T., Lanjouw, P., Ozler, B. and Yin, W. (2004). *Poverty Alleviation through Geographic Targeting: How much Does Disaggregation Help?* Washington DC: World Bank.
- Galli, R. and Hoeven, V.R. (2001). *Is Inflation Bad for Income Inequality: The Importance of the Initial Rate of Inflation*. Geneva: Employment Sector, International Labour Office.
- Goni, E., Lopex, H.J. and Servén, L. (2008). *Fiscal Redistribution and Income Inequality in Latin America*. Washington DC: The World Bank Development Research Group Macroeconomics and Growth Team.
- Leal, C.F., Dayton, J. and Mehra, K. (2000). Public Spending on Health Care in Africa: do the Poor Benefit? *World Health Organization*. 78(1), 66-74.
- Mocan, N.H. (1999). Structural Unemployment, Cyclical Unemployment, and Income Inequality. *The Review of Economics and Statistics*. 81(1), 122-134.
- Singhal, M. (2011). *The Redistributive Policy*. Retrieved March 22, 2014 from <https://prezi.com/ygt0xi23hm92/distributive-and-redistributive-policies/>
- Son, H.H. (2006). *Assessing the Pro-Pooriness of Government Fiscal Policy in Thailand*. Brazil: United Nations Development Program, International Poverty Centre, Brazil.
- Sylwester, K. (2000a). Income Inequality, Education Expenditures and Growth. *Journal of Development Economics*. 63(2), 379-398.
- Vimolsiri, P. (2011). *Economic Outlook in 2011 and the Draft 11th National Economic and Social Development Plan*. Bangkok: The National Economic and Social Development Board. 2011(42).

Waldman, M, L, O. (2014). *Rising in Income Inequality, the Minimum Wage and the Median Voter Theorem*. Retrieved March 22, 2014 from <http://laborpress.org/oren-levin-waldman/3337-rising-income-inequality-the-minimum-wage-and-the-median-voter-theorem>

Appendix

Table 10: Thailand Provincial Level per Capita Budget Allocations 2006-2011 (in THB)

Year	Educap	Socialcap	Healthcap	Pmcap	Agricap	Transcap	Comcap	Intcap	Indcap	Localcap
2006	3314.1	47.3	1120.0	0.7	311.8	436.0	7.7	777.0	4.4	4347.5
2007	3792.6	51.2	1282.3	1.4	516.4	317.3	4.5	1043.6	4.6	4745.6
2008	4505.7	43.4	1417.6	1.0	523.0	358.6	10.9	601.3	8.8	5022.5
2009	2178.0	55.8	1486.4	1.8	494.4	623.8	8.0	502.4	6.9	5088.6
2010	3143.8	46.2	1621.0	2.5	261.3	578.1	7.0	568.5	6.1	5180.9
2011	4109.6	66.8	1721.9	2.1	550.6	986.7	7.1	634.6	8.7	5912.5
Total	3507.3	51.8	1441.5	1.6	442.9	550.1	7.5	687.9	6.6	5049.6

Where:

- Educap = budget allocation from the Ministry of Education/total number of students
- Healthcap = budget allocation from the Ministry of Public Health with health insurance fund/total population
- Socialcap = budget allocation from the Ministry of Social Development and Human Security/total population
- Pmcap = budget allocation from the Office of the Prime Minister/total population
- Agricap = budget allocation from the Ministry of Agriculture and Cooperatives/total population
- Transcap = budget allocation from the Ministry of Transport/total population
- Comcap = budget allocation from the Ministry of Commerce/total population
- Intcap = budget allocation from the Ministry of Interior/total population
- Indcap = budget allocation from the Ministry of Industry/total population
- Localcap = local government budget allocation/total population