



## Urban-rural inequality in Thailand: Differences in characteristics or returns?

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### Abstract

This paper examined urban-rural inequality in Thailand using three socioeconomic surveys from 1988, 1998, and 2007. Household consumption expenditure was used as a welfare measure. The quantile regression technique was employed to investigate urban-rural inequality in different quantiles. The Machado-Mata decomposition approach was then applied to decompose the urban-rural gap into two components: Differences were identified between urban and rural household characteristics and in the returns to household characteristics. The decomposition results suggested that in 1988, the urban-rural gap was primarily due to the return differential between urban and rural households. In 1998, the top urban households were better off due to superior characteristics whereas in the lowest quantiles, the gap was predominantly due to differences in the returns to characteristics. In 2007, urban households were better off than their rural counterparts because of superior endowments. Improving rural household endowment such as educational attainment would potentially reduce the gap between the rural and urban sectors.

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### Introduction

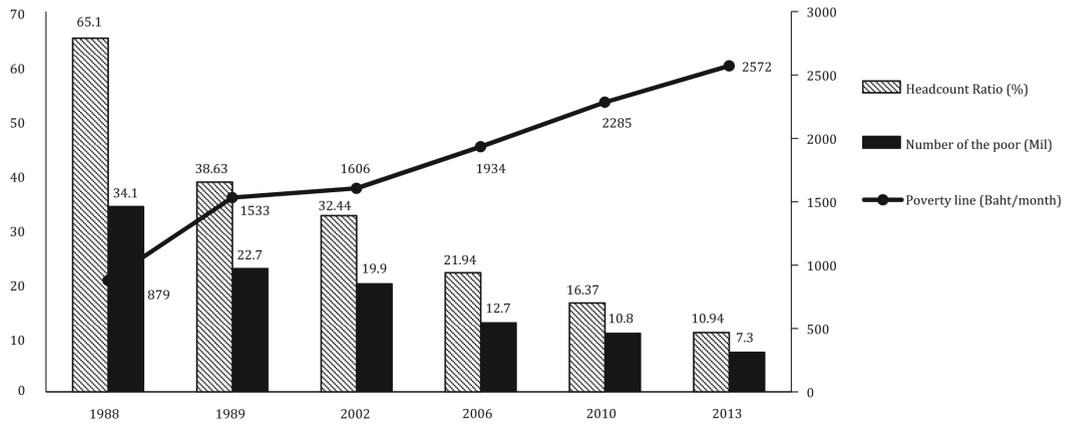
A number of developing countries have witnessed extraordinary economic growth in the past few decades. It is commonly believed that economic growth helps alleviate poverty incidence although the extent of the effect is rather debatable. As well as poverty, the issue of inequality has been a focus of both governments and scholars. There is empirical evidence suggesting that even during an episode of strong economic growth, high levels of initial inequality are detrimental to poverty reduction (Fosu, 2011). If high growth rates were to be accompanied by higher inequality, inclusive growth and long-term welfare improvement would be difficult to accomplish. Since urban-rural inequality is a common feature in less-developed countries, understanding the sources of this gap between the urban and rural situations has implications for implementing effective policies to address it.

In the late 1980s up to mid-1990s, Thailand realized remarkably strong economic growth, with an average of 8–9 percent annually. It is interesting on its own to see how that growth translated into a reduction in poverty and inequality. Figure 1 presents the numbers of the poor, headcount ratios, and poverty lines in Thailand from 1988 to 2013. In 1988, an incredibly large proportion of the population (65.1%) was below the poverty line, but over time, the incidence of poverty declined significantly to 10.94 percent in 2013, with the number of poor falling from 34.1 million to 7.3 million. After recovery from the crisis in 1997, which was believed to have adverse effects on poverty reduction, the headcount ratios and number of the poor have steadily declined, starting from 2002 onwards.

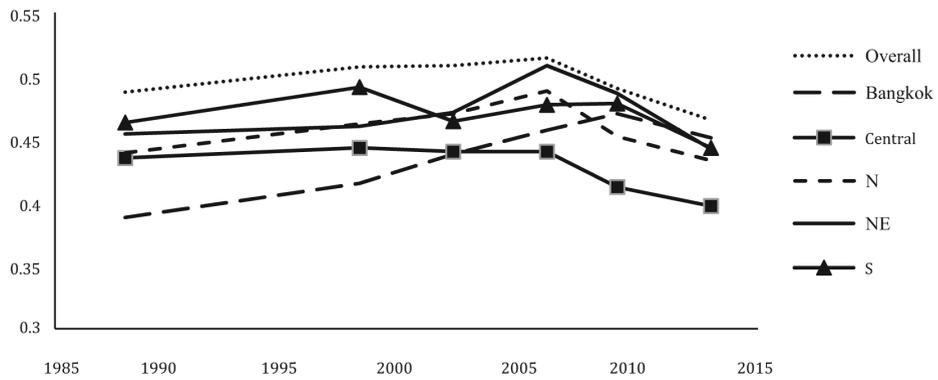
Figure 2 shows the income Gini coefficients in Thailand during 1988–2013. The Gini coefficient measures inequality, with a higher value indicating greater inequality. Despite a substantial decline in poverty incidence over the past two decades, the overall Gini coefficient has decreased only slightly, from 0.487 in 1988 to 0.465 in 2013. Thus, alleviation of inequality was not as successfully achieved as was poverty reduction. In terms of regional inequality, Bangkok has experienced a worsened inequality situation, while other regions have witnessed a marginal reduction in inequality.

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**Figure 1** Number of the Poor, Headcount Ratio, and Poverty  
**Source:** Office of the National Economic and Social Development Board (2016)



**Figure 2** Regional Gini coefficients, 1988–2013  
**Source:** Office of the National Economic and Social Development Board (2016)

Table 1 displays the proportions of income for each quintile during 1988–2013. Incomes in the poorest quintile (Q1) range from 3.84 percent to 4.58 percent of aggregate income whereas incomes in the richest (Q5) account for 54 percent to 56 percent. The ratio of Q5 income to Q1 remains around 12–14 over the entire period. In spite of reasonably strong economic growth, inequality among different quintiles does not seem to decrease to a noticeable extent. This presents a dismaying picture of income disparity in Thailand.

By and large, the figures suggest that the incidence of poverty in Thailand has declined substantially over the past two decades. However, considering the country as a whole, the issue of inequality remains a topic of concern, as the Gini indices have only marginally decreased over time. This situation could indeed be problematic, as greater inequality could potentially hamper poverty reduction in the long run. Since urban-rural disparity is a significant component of overall inequality in Thailand, comprehensive study of the roots of this particular gap will certainly be valuable in dealing successfully with the issue of inequality overall.

The key objective of this study was to examine the

inequality between rural and urban areas in Thailand using household consumption expenditure as a measure of welfare. The National Statistical Office's socio-economic surveys were used to investigate welfare disparity in urban and rural areas.

The contribution of this paper is two-fold. This study analyzes the rural-urban disparity using consumption expenditures rather than income data since expenditure better reflects well-being of households. Secondly, the Machado-Mata decomposition technique based on quantile regressions has been adopted instead of a standard Oaxaca-Blinder method. The Machado-Mata approach is superior in the sense that it can shed light on the disparity across the entire distribution, allowing us to examine the gaps between the urban and rural sectors more thoroughly.

The remainder of this paper is organized as follows. A discussion of related studies will be presented in the next section. Section 3 discusses the data and variables and two techniques employed to investigate the urban-rural gap (the quantile regression and the Machado-Mata decomposition approach). Section 4 presents the quantile regression and decomposition results. Lastly, section 5 concludes the study.

**Table 1**  
Income ratios by quintile, 1988–2013

Year	1988	1998	2002	2006	2009	2013
Quintile 1 (poorest)	4.58	4.30	4.23	3.84	4.42	4.16
Quintile 2	8.05	7.75	7.72	7.67	8.25	9.00
Quintile 3	12.38	12.00	12.07	12.12	12.66	13.47
Quintile 4	20.62	19.82	20.07	20.08	20.27	20.80
Quintile 5 (richest)	54.37	56.13	55.91	56.29	54.39	52.58
Q5/Q1	11.88	13.06	13.23	14.66	12.31	12.64

Source: Office of the National Economic and Social Development Board (2016)

## Literature Review

Deolalikar (2002) examined the effect of economic growth and that of income inequality on poverty reduction in Thailand during 1992–1999. While economic growth was found to have a positive effect on poverty reduction, income inequality had a significant negative effect. A high initial level of inequality lowered future growth rates, thus hindering poverty reduction that would have happened with strong economic growth. Thus inequality, as well as poverty, needed to be tackled, and tackled simultaneously. Nearly a decade later, Bird, Hattel, Sasaki, and Attapich (2011) pointed out that Thailand's Gini coefficient of 0.51 was among the highest in Southeast Asia whereas Indonesia, Malaysia, and Viet Nam had Gini coefficients below 0.40. Thailand's Gini coefficient was similar to some of those in Latin American countries, where the richest quintile possesses more than 70 percent of the total household financial assets.

Urban-rural disparity is considered a key component of overall inequality in less-developed countries. Sicular, Ximing, Gustafsson, and Shi (2007) argued that urban-rural gaps have possibly been overestimated because some differences such as in the cost of living and in household characteristics are unaccounted for. Taking characteristic differences into consideration, Nguyen, Albrecht, Vroman, and Westbrook (2007) investigated the urban-rural inequality in Viet Nam during 1993–1998 using Household Living Standards Surveys and the Machado and Mata (2005) decomposition approach. In 1993, the difference between urban and rural residents was primarily due to differentials in household characteristics whereas in 1998 the urban-rural inequality was predominantly due to differentials in returns to household characteristics in most of the distribution except in the lowest quintile. Takahashi (2007) investigated the determinants of regional income inequality in rural Viet Nam during the period 1993–1998, emphasizing the role of education and land assets. Unlike Nguyen et al. (2007), Takahashi employed the Oaxaca-Blinder decomposition instead. The findings revealed the dominant role played by return differentials in explaining inequality among three different rural regions. These results were fairly consistent with those of Nguyen et al. (2007).

Qu and Zhao (2008) examined the urban-rural disparity in China from 1988–2002. Consumption disparity was greater in lower quantiles. Additionally, the gaps between urban and rural areas were attributed to differences in returns to household characteristics. The results also suggested that

improvement in rural educational attainment and rural-urban migration would be likely to reduce the urban-rural inequality.

## Methodology

Urban-rural inequality was examined using three waves of the Household Socio-Economic Survey (SES) (1988, 1998, and 2007). The 1988 SES covered 11,045 households, whereas the coverage in 1998 had increased to 23,549 households, and in 2007, 51,970 households were included in the survey.

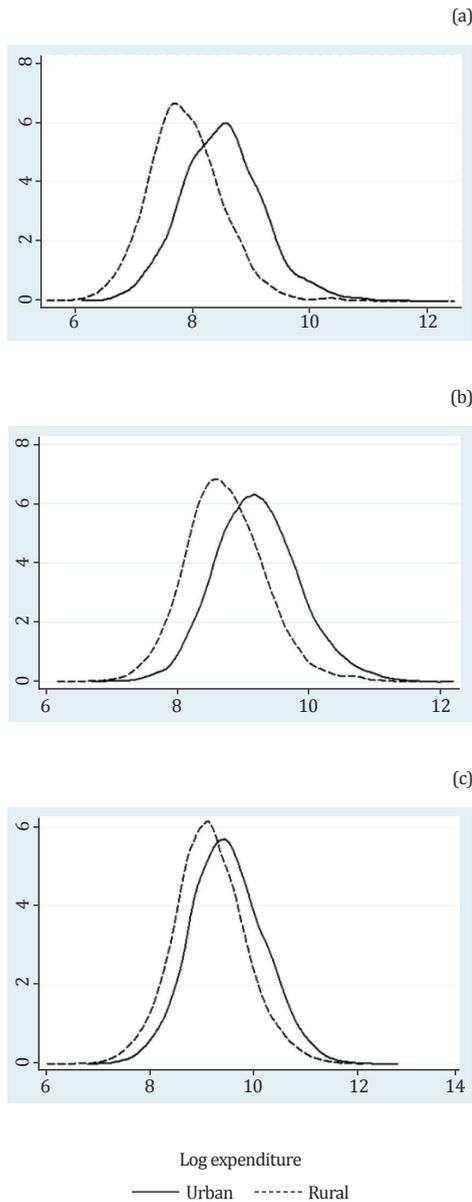
Incomes are often underreported (Barrett & Reardon, 2000; Glewwe, Grangnolati, & Zaman, 2000). In addition, the Thailand Labor Force survey in 2012 indicated that more than half of Thai workers were engaged in self-employment activities, including farming. As such, income data tend to fluctuate to a large degree, making household income an inaccurate welfare measure. Thus, household consumption expenditure was used as an alternative measure of welfare in this study because consumption expenditure better reflects long-term well-being (Deaton, 1997; Nguyen et al., 2007). The household consumption expenditure included various items such as expenditures on food and beverages, clothing, education, medical and health care.

The dependent variable was the natural logarithm ( $\log$ ) of household consumption expenditure ( $\log exp$ ). Household characteristics included the number of household members ( $hhsz$ ), the gender of the household head ( $gend = 1$  for male), the age of the household head and the age squared divided by 100 ( $age, asq$ ). The level of human capital of the household head was measured as the number of schooling years obtained ( $edu$ ). There were also dummy variables indicating the industry of the household head's employment,  $agri = 1$  for agriculture,  $manu = 1$  for manufacturing, and  $ser = 1$  for services.<sup>1</sup> An urban dummy variable ( $u$ ) was also included to indicate whether a household was in an urban area ( $u = 1$  for urban). We also included a variable to specify whether a household was located in Greater Bangkok Metropolitan area ( $bkk = 1$  for Greater Bangkok area).<sup>2</sup>

Figures 3(a), 3(b), and 3(c) display the kernel densities of log household consumption expenditure for 1988, 1998, and 2007, respectively. In all years, the urban densities were to the right of the rural densities, suggesting expenditure disparity between urban and rural households. The rural-urban gap in 1998 remained approximately the same as in 1988 but the gap became slightly smaller in 2007.

<sup>1</sup> The employment sector classification followed the Thailand Standard Industry Classification (TSIC). Industries were grouped as follows: agriculture, forestry, and fishing; mining; construction; manufacturing; transportation, communication, electric, gas and sanitary services; wholesale trade; retail trade; finance, insurance, and real estate; services; and public administration.

<sup>2</sup> The Greater Bangkok Metropolitan area consists of Bangkok, Pathumthani, Nontaburi and Samutprakarn.



**Figure 3** Kernel density of log household consumption expenditure: (a) 1988; (b) 1998; and (c) 2007

Tables 2, 3, and 4 present the quintile means for some variables in 1988, 1998, and 2007, respectively. In summary, household size and household head education appear to be positively correlated with household consumption expenditure. The average level of household head education increases across quantiles in both rural and urban areas and was higher in urban areas in every quintile. Age of household head did not seem to be associated with consumption expenditure.

In terms of methodology, this paper followed Nguyen et al. (2007) by using the quantile regression technique. The method of least square results in estimates that approximate the conditional mean of the dependent variable given values of the

explanatory variables while quantile regression yields estimates that approximate any quantile of the dependent variable (see details in Koenker & Hallock, 2001; Nguyen et al., 2007). Quantile regression enabled us to determine the relationship of consumption expenditure and a vector of X variables across the entire distribution. Equation (1) was used to estimate a series of quantile regressions across the distribution:

$$Q_\theta[y | X, u, bkk] = \alpha_\theta^0 + u\gamma_\theta^0 + bkk\delta_\theta^0 + X\alpha_\theta + u \cdot X\gamma_\theta + bkk \cdot X\delta_\theta + u \cdot bkk\lambda_\theta^0 \quad (1)$$

where  $y$  is the log monthly consumption expenditure,  $Q_\theta[y | X, u, bkk]$  is the  $\theta$ th conditional quantile of  $y$ ,  $\alpha_\theta^0$  is the regression intercept,  $u$  is the urban dummy,  $bkk$  is the greater Bangkok dummy,  $X$  is the covariate matrix including all explanatory variables except  $u$  and  $bkk$ ,  $u \cdot X$  is the matrix of interactions between the urban dummy and all covariates,  $bkk \cdot X$  is the matrix of interactions between the  $bkk$  dummy and all covariates, and  $u \cdot bkk$  is the interaction between *urban* and *bkk* dummies. The coefficients  $\alpha_\theta$  are the returns to characteristics for households at the  $\theta$ th quantile.

After the quantile regressions were obtained, the Machado-Mata decomposition technique was applied. This decomposition technique enabled us to decompose the urban-rural differences into two components: differences in the distribution of household characteristics and those in the returns to those characteristics. The approach is essentially based on the construction of the counterfactual distribution of rural log expenditure. This counterfactual distribution is the distribution of log expenditure that would have prevailed if the rural households had urban characteristics but received the rural returns to those characteristics (for details, see Machado & Mata, 2005; Nguyen et al., 2007). The decomposition compares the counterfactual distribution with the rural and urban log expenditure distributions. The difference between the  $\theta$ th quantile of the urban and rural distribution is given by Equation (2).

$$y_u(\theta) - y_r(\theta) = [y_u(\theta) - y_c(\theta)] + [y_c(\theta) - y_r(\theta)] \quad (2)$$

where  $y_u(\theta)$ ,  $y_r(\theta)$ , and  $y_c(\theta)$  denote the urban, rural, and counterfactual distributions, respectively.

The first term on the right-hand side is the returns effect; it captures the contribution of the differences in returns to the urban-rural log expenditure gap at a particular  $\theta$ th quantile. The second term is the covariate effect; it captures the contribution of differential characteristics to the urban-rural gap at the  $\theta$ th quantile.

## Results

Table 5 presents the first set of regressions that include only the intercept, the urban, and Greater Bangkok dummy variables. This “baseline” regression represents the benchmark case, which is a rural household located in a non-Bangkok area.

**Table 2**

Quintile means of variables for urban and rural areas in 1988

Variable	Urban expenditure quintile (n = 3,937)					Rural expenditure quintile (n = 7,108)				
	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5
logexp	7.58	8.14	8.51	8.86	9.53	7.06	7.55	7.86	8.20	8.83
age	39.97	40.96	43.02	43.61	43.96	46.47	45.53	46.23	46.34	46.44
asq	18.73	19.02	20.64	21.11	21.26	24.41	22.94	23.58	23.45	23.42
gend	0.65	0.72	0.75	0.75	0.79	0.75	0.79	0.81	0.83	0.83
hhsz	2.52	3.24	3.74	4.02	4.35	3.28	3.91	4.13	4.43	4.60
edu	6.66	7.14	7.39	7.76	7.90	3.90	4.10	4.24	4.61	5.59

**Table 3**

Quintile means of variables for urban and rural areas in 1998

Variable	Urban expenditure quintile (n = 7,405)					Rural expenditure quintile (n = 16,144)				
	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5
logexp	8.36	8.88	9.21	9.54	10.16	7.94	8.42	8.71	9.04	9.64
age	44.09	43.55	44.79	45.92	48.23	52.89	48.83	48.35	48.30	48.66
asq	22.40	21.18	22.29	23.00	24.92	30.62	25.97	25.42	25.31	25.46
gend	0.60	0.66	0.69	0.72	0.76	0.65	0.76	0.78	0.79	0.79
hhsz	2.18	2.92	3.31	3.82	4.48	2.76	3.59	3.95	4.15	4.54
edu	6.78	7.77	8.80	9.76	11.16	3.67	4.44	5.07	5.90	7.32

**Table 4**

Quintile means of variables for urban and rural areas in 2007

Variable	Urban expenditure quintile (n = 26,494)					Rural income quintile (n = 16,561)				
	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5
logexp	8.54	9.12	9.48	9.87	10.54	8.22	8.80	9.14	9.50	10.16
age	54.90	49.55	47.51	48.09	50.13	57.56	52.19	50.90	50.09	49.09
asq	32.94	27.00	24.66	25.02	26.67	35.58	29.40	27.90	26.97	25.68
gend	0.56	0.63	0.66	0.68	0.71	0.59	0.69	0.71	0.72	0.75
hhsz	2.25	2.94	3.21	3.46	3.81	2.36	3.20	3.64	3.86	4.05
edu	5.47	6.73	7.92	9.35	11.56	4.44	5.03	5.55	6.25	8.28

**Table 5**

Urban-rural gap at various quintiles

Year	Coef	OLS	5th	25th	50th	75th	95th
1988	base	7.90	6.91	7.47	7.86	8.29	8.97
	p	.00	.00	.00	.00	.00	.00
	urban	0.46	0.37	0.45	0.50	0.47	0.47
	p	.00	.00	.00	.00	.00	.00
	bkk	0.35	0.32	0.30	0.34	0.39	0.52
1998	base	8.73	7.80	8.33	8.70	9.10	9.74
	p	.00	.00	.00	.00	.00	.00
	urban	0.38	0.35	0.37	0.40	0.41	0.39
	p	.00	.00	.00	.00	.00	.00
	bkk	0.49	0.41	0.44	0.50	0.53	0.56
2007	base	9.15	8.05	8.70	9.12	9.57	10.32
	p	.00	.00	.00	.00	.00	.00
	urban	0.30	0.26	0.26	0.29	0.33	0.32
	p	.00	.00	.00	.00	.00	.00
	bkk	0.47	0.57	0.49	0.44	0.45	0.42
p	.00	.00	.00	.00	.00	.00	

Overall, the coefficients for the urban dummy were positive and statistically significant. In 2007, the gap became narrower in comparison to the gaps in 1988 and 1998. The urban-rural gap seemed to have increased across quintiles except at the top of the distribution, where the gap became slightly smaller. The gap between the Greater Bangkok area and the rest of Thailand was larger in higher quintiles. In addition, the gaps became larger across time except for the top quintiles in 1998, when the gaps were greater than in 2007.

In what follows, the household characteristics and their interactions with the urban and *bkk* dummies are presented in the model. Tables 6, 7, and 8 display the quantile regression results in 1988, 1998, and 2007, respectively.

Generally, the coefficients for the urban dummy were not statistically significant in most cases. The results suggested that

the urban-rural gaps were almost entirely explained by household characteristics. Those people in the Greater Bangkok area were better off than those living in other regions, and the gaps between the Greater Bangkok area and other regions became smaller over time once the household characteristics were controlled.

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**Table 6**  
Quantile regressions, 1988

Variable	5th	25th	50th	75th	95th
u	-0.471	-0.290*	-0.255	-0.155	0.220
bkk	1.734***	1.643***	1.656***	1.546***	1.485***
age	0.014**	0.021***	0.019***	0.019***	0.022***
u.age	0.032**	0.020***	0.017**	0.012	-0.002
bkk.age	-0.053***	-0.043***	-0.039***	-0.029***	-0.033
asq	-0.013**	-0.019***	-0.016***	-0.015***	-0.017***
u.asq	-0.030*	-0.019***	-0.012	-0.007	0.002
bkk.asq	0.050***	0.040***	0.032**	0.020*	0.031
gend	0.087*	0.030	0.013	0.013	-0.011
u.gend	-0.061	0.060	0.105**	0.032	-0.056
bkk.gend	-0.020	-0.114*	-0.100*	-0.010	0.154
hhsz	0.106***	0.106***	0.104***	0.095***	0.084***
u.hhsz	0.057***	0.023**	0.006	0.022*	0.041
bkk.hhsz	-0.017	0.005	0.026	0.008	0.030
edu	0.024***	0.034***	0.040***	0.044***	0.043***
u.edu	0.013	0.005	0.004	-0.002	-0.002
bkk.edu	-0.034	-0.037	-0.039***	-0.041***	-0.035***
agri	-0.059	-0.134***	-0.143***	-0.160***	-0.118***
u.agri	-0.192*	-0.037	0.030	0.169	0.434
bkk.agri	0.256	0.235*	0.221	-0.029	-0.594
ser	0.127***	0.093***	0.111***	0.100***	0.085
u.ser	-0.217**	-0.099**	-0.081*	-0.063	-0.129
bkk.ser	0.195**	0.017	-0.065	-0.047	-0.121
manu	0.172	0.074	0.103***	0.049	-0.060
u.manu	-0.129	0.064	0.033	0.091	-0.018
bkk.manu	-0.007	-0.156	-0.157	-0.103	0.120
cons	6.059***	6.439***	6.823***	7.208***	7.799***

Notes: \*\*\*, \*\*, and \* denote significance at the 1 percent, 5 percent, and 10 percent levels, respectively. Z-statistics are available upon request.

**Table 7**  
Quantile regressions, 1998

Variable	5th	25th	50th	75th	95th
u	0.168	0.060	0.162*	0.195**	0.458**
bkk	0.436**	0.592***	0.279**	0.063	0.031
age	0.026***	0.026***	0.025***	0.024***	0.034***
u.age	0.004	0.006*	0.000	0.000	-0.008
bkk.age	0.004	-0.008*	0.005	0.010	0.004
asq	-0.026***	-0.024***	-0.022***	-0.019***	-0.027***
u.asq	-0.002	-0.003	0.004	0.003	0.008
bkk.asq	-0.001	0.014***	0.000	-0.005	0.008
gend	0.069***	0.038***	0.010	0.002	-0.014
u.gend	-0.092***	-0.020	0.000	-0.005	-0.025
bkk.gen	0.098*	-0.017	-0.041	-0.025	-0.034
hhsz	0.130***	0.134***	0.135***	0.136***	0.142***
u.hhsz	0.029***	0.021***	0.025***	0.015**	0.004
bkk.hhsz	0.005	0.024***	0.027***	0.025**	0.015
edu	0.053***	0.059***	0.060***	0.060***	0.072***
u.edu	-0.001	-0.006***	-0.007***	-0.010	-0.019***
bkk.edu	-0.006	0.000	0.002	0.005	0.006
agri	-0.003	-0.057***	-0.081***	-0.117***	-0.088***
u.agri	-0.133*	-0.044	-0.013	0.074	0.239**
bkk.agri	0.121	0.192***	0.139***	0.156**	0.173
ser	0.224***	0.220***	0.206***	0.222***	0.260***
u.ser	-0.162***	-0.139***	-0.111***	-0.108***	-0.084*
bkk.ser	-0.063	-0.123***	-0.108***	-0.146***	-0.104
manu	0.049	0.094***	0.090***	0.066**	0.132**
u.manu	-0.051	-0.046	-0.005	0.032	0.063
bkk.manu	0.099	0.065	-0.023	0.028	0.193
cons	6.506***	6.884***	7.193***	7.547***	7.698***

Notes: \*\*\*, \*\*, and \* denote significance at the 1 percent, 5 percent and 10 percent levels, respectively. Z-statistics are available upon request.

**Table 8**  
Quantile regressions, 2007

Variable	5th	25th	50th	75th	95th
u	0.330**	0.210***	0.090	0.072	0.188
bkk	0.679***	0.448***	0.377***	0.311***	-0.087
age	0.045***	0.044***	0.043***	0.046***	0.048***
u.age	-0.009	-0.001	0.001	-0.001	-0.005
bkk.age	-0.007	-0.006	-0.006	-0.005	0.008
asq	-0.045***	-0.042***	-0.041***	-0.042***	-0.041***
u.asq	0.009*	0.002	0.001	0.004	0.009
bkk.asq	0.010*	0.010***	0.010***	0.010***	-0.003
gend	0.032*	0.014	0.015	0.021	0.045*
u.gend	0.006	0.034***	0.035***	0.022	-0.035
bkk.gend	-0.005	-0.004	-0.047***	-0.070***	0.000
hhsiz	0.158***	0.158***	0.158***	0.154***	0.144***
u.hhsiz	0.005	-0.004	-0.005	0.000	-0.003
bkk.hhsiz	0.016	0.032***	0.038***	0.043***	0.035*
edu	0.057***	0.072***	0.077***	0.077***	0.079***
u.edu	0.010**	0.000	-0.001	0.000	-0.003
bkk.edu	-0.009**	-0.010***	-0.010	-0.004***	-0.002
agri	-0.031	-0.071***	-0.115***	-0.158***	-0.142***
u.agri	-0.092	-0.139***	-0.110***	-0.062***	-0.021
bkk.agri	-0.160	0.189*	0.181	0.123	0.113
ser	0.187	0.195***	0.212***	0.186***	0.189***
u.ser	-0.090	-0.146***	-0.144***	-0.104***	-0.078
bkk.ser	-0.086	-0.056*	-0.088***	-0.117***	-0.115*
manu	0.102	0.069***	0.068***	0.025	-0.024
u.manu	-0.115	-0.125***	-0.102***	-0.044	0.022
bkk.manu	0.039	0.034	0.021	-0.007	-0.081
cons	6.381	6.781***	7.084***	7.384***	7.857***

Notes: \*\*\*, \*\*, and \* denote significance at the 1 percent, 5 percent and 10 percent levels, respectively. Z-statistics are available upon request.

With regard to returns on education, the coefficients on *edu* represent the change in log expenditures associated with an additional year of the household head's education. The coefficients on education were strongly significant in all cases, suggesting a strong association between educational attainment and household well-being in terms of consumption expenditure. Moreover, the returns on education were larger in the top quantiles, which was the case for all three years. The results point out that not only was the educational attainment at top quantiles superior, but also were returns on education.

In terms of the employment sector, the coefficients for the sector dummies were not statistically significant at the low end of the distribution. Industry of employment did not seem to be correlated with household expenditure as the poor generally get paid at the subsistence level regardless of the employment sector. In most cases, having a household head engaged in the service sector appeared to be correlated with higher household expenditure. It is also important to note that a household with its head working in the agricultural sector tended to have lower household expenditure in all cases except at the bottom of the distribution. The disadvantage of engaging in agricultural employment was apparent during 1988–2007 indicating the biased economic development against agriculture.

Figures 4(a), 4(b), and 4(c) display the decomposition results for 1988 and 2007, respectively. In 1988, urban households were better off because the rewards from the urban labor market were higher than those in the rural market. Even if the households in the rural areas were endowed with the same characteristics as those in the urban areas, they would not be as well off as their urban counterparts due to lower returns. In 1998, the lowest quantiles consisting of the rural poor were worse off than their urban counterparts because of lower returns in the rural labor market. On the

contrary, at the top of the distribution, urban households were better off due to differences in characteristics. The urban-rural gap in 2007 was primarily due to differences in household characteristics rather than differentials in the returns to those characteristics.

## Conclusion

The objective of this study was to investigate the urban-rural inequality in Thailand during 1988–2007. Using two National Statistical Office Socio-Economic Surveys from 1988 and 2007 enabled us to examine urban-rural gaps occurring over the past two decades. We used household consumption expenditure as a welfare measure. The quantile regression technique was employed to uncover gaps in different quantiles. The Machado-Mata decomposition approach was then applied to decompose the urban-rural gap into two components. In summary, the urban-rural gap can be attributed to differences between urban and rural household characteristics and the differences in returns to household characteristics.

For 1988, the decomposition results suggested that the gap was primarily due to differentials in the returns to characteristics and this was the case for the entire distribution. In 1998, the urban-rural gap in the lowest quantiles was due to differences in returns whereas at the top of the distribution, welfare inequality was predominantly due to differences in household characteristics. According to the decomposition results in 2007, urban-rural household inequality was due to differences in household characteristics rather than the differences in the rewards for those characteristics. The results for 2007 suggested that urban households were better off than their rural counterparts because of superior endowments.

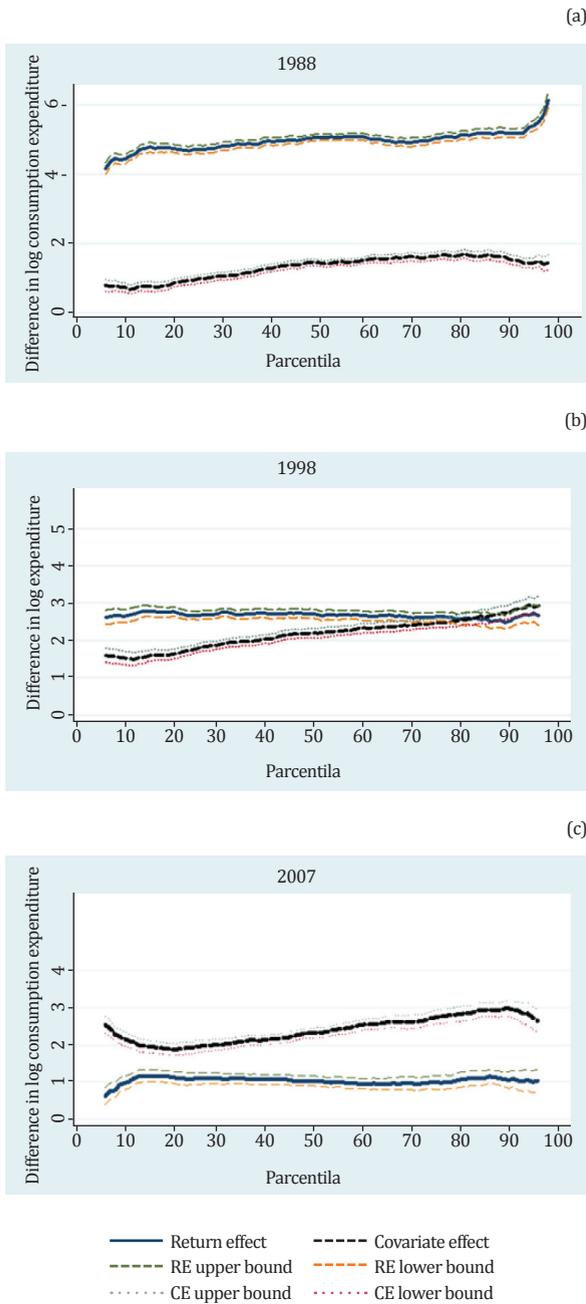


Figure 4 Decomposition of household expenditure gap:(a) 1988; (b) 1998; and (c) 2007

These results have important policy implications. In the first two waves—SES88 and SES98—differences in returns seemed to play a dominant role. However, the disparity between the rural and urban households in the more recent wave (SES2007) can be attributed to differences in endowment. Improving rural household endowment such as educational attainment would potentially reduce the gap between the rural and urban sectors. Human capital investment in education would not only increase household consumption as the quantile regressions suggest, but also lessen rural-urban inequality.

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