

12

chapter

Spatial disparities in Thailand: does government policy aggravate or alleviate the problem?

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Thailand's economy, measured by gross domestic product (GDP) at market prices in 2006, was about B 7.8 trillion and had been growing at a rate of 6 percent a year for more than 25 years.¹ After experiencing a deep economic crisis in 1997, with a drastic *decline* in real output of approximately 10 percent in 1998, Thailand took five years to recover completely,² achieving a post-crisis growth rate (1999–2005) of about 5 percent a year.

The structure of the Thai economy began to change in the early 1980s, during which the Thai government promoted industrialization and shifted the policy emphasis from import substitution to export promotion. Accordingly, the manufacturing sector took over a large area of agricultural land, which reduced the proportion of agriculture in GDP from 23 percent in 1980 to 13 percent in 2005 and increased the proportion of industry from 27 to 38 percent. Services remain the largest sector, contributing half of the country's GDP in 2005 (see table 12.1).

Together with satisfactory economic growth, per capita GDP has increased over time, with the only exception being during the economic crisis (see figure 12.1). In 2005 Thailand's GDP per capita was about B 60,000 a year, which is equivalent to approximately B 164 a day, a level just above the minimum wage rate.

As this impressive economic growth was taking place, the proportion of people living below the poverty line declined from 38 percent in 1990 to 17 percent in 1996 (see figure 12.2). During the economic crisis, poverty increased, approaching 21 percent in 2000.

After the crisis, the figure resumed its downward trend and ultimately stabilized at 9.6 percent in 2007.

Despite the decline in absolute poverty, the income gap between the richest and the poorest has been worsening. From 1990–2006, the ratio of the richest to the poorest income quintiles (Q5/Q1) increased from 13.3 to 15.9, indicating a wider income gap between the rich and the poor. Yet that ratio declined during two periods: 1992–98 and 2000–04. According to Siamwalla and Jitsuchon (2007), the earlier decline occurred as a result of growth-promoting policies, while the later decline occurred as a result of policy packages implemented by the Thaksin cabinet, which sought to stimulate domestic demand without offering incentives for businesses to improve productivity. This explains why Thailand is facing a deteriorating situation, as shown by the bounce in 2006 of the Q5/Q1 ratio to 15.9, soon after the packages were removed.

The Thai economy is growing and developing satisfactorily, but there is a question regarding whether these benefits are distributed evenly to different areas of the country. This paper attempts to outline the existence and evolution of spatial disparities and their relationship with economic development and to delineate the factors that create such spatial differentials, including both market-driven and government-directed influences. Special emphasis is placed on urban-rural as well as regional differences, with a particular attempt to determine whether the growth-promoting policies as well as public finances

Table 12.1 Economic indicators in Thailand, 1980–2005

Year	GDP (1988 prices, baht billion)	Growth (percent a year)	Composition of GDP (percent)		
			Agriculture	Manufacturing	Services
1980	913.7	n.a.	23	27	50
1985	1,191.3	5.4	18	27	55
1990	1,945.4	10.3	14	33	53
1995	2,941.7	8.6	12	36	52
2000	3,005.4	0.4	11	37	52
2005	3,851.3	5.1	13	38	49

Source: National Economic and Social Development Board (NESDB). n.a. Not applicable.

have alleviated or aggravated spatial disparities in Thailand.

Growth and spatial disparities

A quick observation of the income disparity between urban and rural areas in 2004 shows that the urban population in Thailand earned approximately 2.2 times what those living in rural areas earned. The figure shows a satisfactory decline from 1994, when the disparity was 2.56 (see table 12.2). Intraregional differences in income between the 20 percent richest and the 20 percent poorest, however, can be as large as 1,000 in Bangkok and as low as 3 in the northeast. This suggests that richer areas can be subject to wider gaps in income distribution than poorer areas.

Bangkok, the capital of Thailand, and its vicinities play a significant role in creating jobs and produce as much as half of the country’s GDP (see figure 12.3). Greater Bangkok has the smallest proportion of people defined as poor, while the northeastern region has the highest (see figure 12.4).

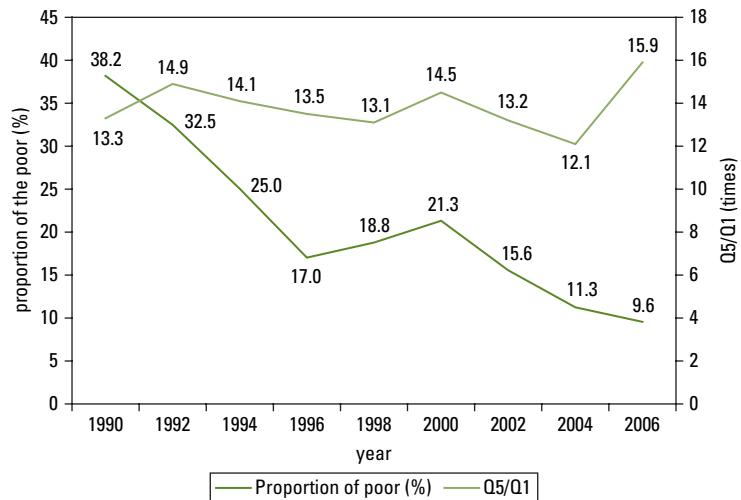
Greater Bangkok generates per capita income about 2.6 times that of the country average and about 8 times that of the northeastern region, where the majority of the poor are located. Yet income convergence is evident in the central and eastern regions, which are catching up with Bangkok (see figure 12.5). They had accelerating growth rates of 12.1 and 13.5 percent a year, respectively, in the early 1990s and kept growing at an impressive rate afterward, finally outpacing the country’s average rate of growth and becoming second, after Bangkok, in contributing to Thailand’s output (see table 12.3).

Figure 12.1 GDP per capita in Thailand, 1980–2005



Source: Bank of Thailand.

Figure 12.2 Absolute poverty and income distribution in Thailand, 1990–2006

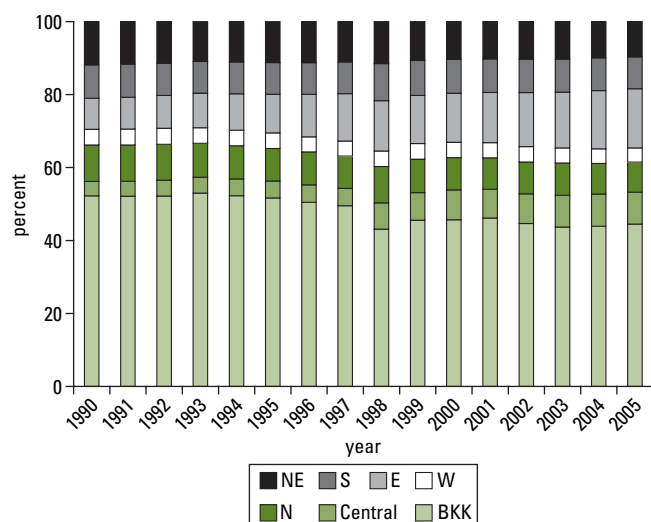


Source: National Economic and Social Development Board (NESDB) and Bank of Thailand. Note: Q1 and Q5 = the first and fifth quintile of income, indicating the proportion of population who earn the least 20 percent and the highest 20 percent of income, respectively.

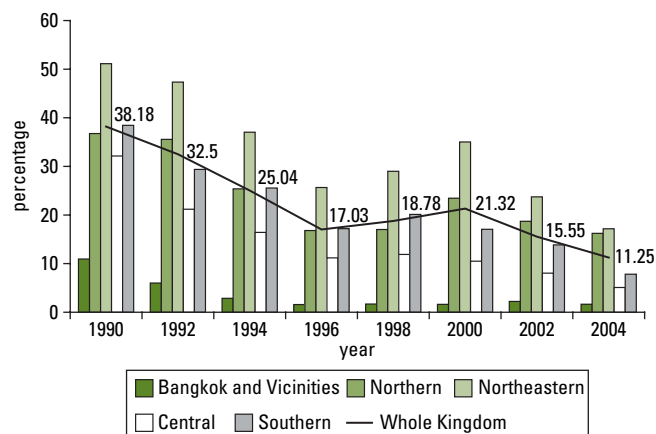
Table 12.2 Urban-rural income gap in Thailand measured by per capita income, 1994–2004

Indicator	1994	1996	1998	2000	2002	2004
Urban income per capita						
Baht per month	3,868	5,220	5,657	5,772	6,394	6,885
Rate of change (percent)	n.a.	34.96	8.36	2.02	10.78	7.68
Rural income per capita						
Baht per month	1,510	2,007	2,343	2,300	2,680	3,130
Rate of change (percent)	n.a.	32.92	16.78	-1.85	16.53	16.80
Urban income times rural income	2.56	2.60	2.41	2.51	2.39	2.20
Thailand income per capita						
Baht per month	2,217	2,978	3,356	3,372	3,867	4,331
Rate of change (percent)	n.a.	34.35	12.67	0.50	14.68	11.99

Source: Data from National Statistical Office, computed by the NESDB.
n.a. Not applicable.

Figure 12.3 Regional share of GDP in Thailand, 1990–2005

Source: National Economic and Social Development Board.

Figure 12.4 Proportion of the poor people in Thailand, by region, 1990–2004

Source: NESDB.

Note: Numbers in the figure represent the national average. The western and eastern regions are included in the central region, following the classification of NESDB.

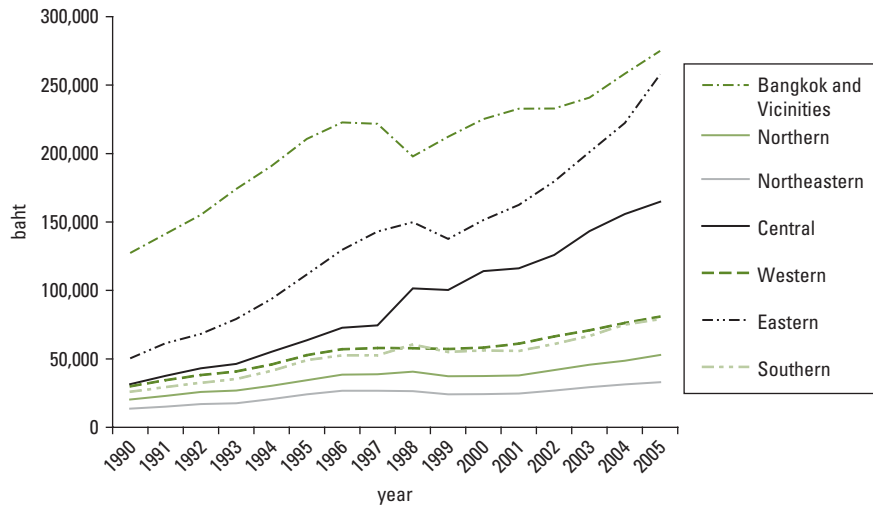
For the past 15 years, they have enjoyed an increase in per capita income, attaining a level 2.17 times the country average in 2005.

The central region, whose per capita income was 88 percent of the country average in 1990, now has per capita income that is approximately 1.5 times the country average. While both regions are successfully narrowing the gap with Bangkok, other regions—western, southern, northern, and northeastern—are growing relatively slowly. As a result, they are maintaining their low levels of income, which are 75, 72, 48, and 31 percent, respectively, of the country average.

Explaining spatial disparities

Different levels of income and growth can be achieved partly by income-generating activities that are inherently different in each region (see figure 12.6). In terms of economic structure, Bangkok's major activities are service related. Other regions, like the central and eastern areas, have benefited from a variety of growth-promoting policies, including industrialization, globalization, and the creation of export-promotion zones, which are eligible to undertake a significant structural transformation in economic activities, meaning essentially a shift to manufacturing. Improved infrastructure and a lot of incentives attract both local and multinational firms, encouraging them to establish production sites and eventually allowing the area to enjoy agglomeration economies as well as government support in several forms. In the central region, the manufacturing sector constituted only one-tenth of economic activity in 1980, but this

Figure 12.5 GDP per capita in Thailand, by region, 1990–2005



Source: National Economic and Social Development Board.

Table 12.3 Per capita regional GDP in Thailand, 1990–2005

Region	Per capita regional GDP (Thailand = 100)			Regional GDP growth rate (percent a year)		
	1991–95	1996–2000	2001–05	1990–95	1995–2000	2001–05
Bangkok and vicinities	310.9	280.8	262.8	8.4	-2.0	4.5
Eastern	147.7	185.0	217.0	13.5	5.3	9.1
Central	87.6	120.4	149.6	12.1	12.5	6.5
Western	75.6	74.9	75.3	8.4	0.1	3.5
Southern	66.8	72.0	71.5	7.4	1.9	3.8
Northern	50.0	50.1	48.1	6.2	0.3	3.6
Northeastern	33.7	33.3	30.8	7.4	-1.2	3.7
Thailand						
GDP per capita (baht)	56,113.8	76,931.6	94,345.8	n.a.	n.a.	n.a.
Growth rate (percent)	n.a.	n.a.	n.a.	8.6	0.4	5.1

Sources: Data from NESDB and author's calculations.
n.a. Not applicable.

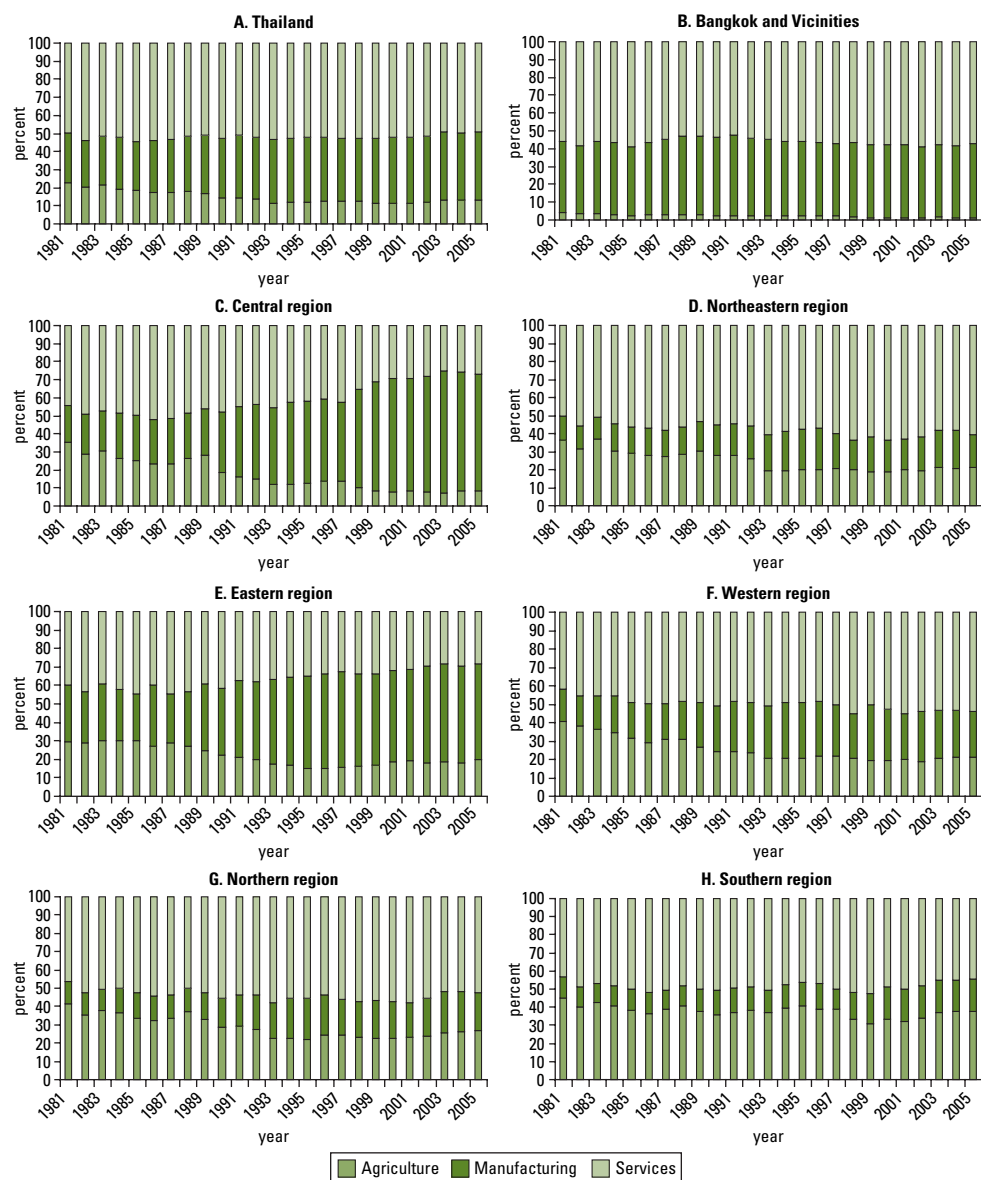
had increased to about 60 percent in 2005. The pattern of structural shift in the eastern region is similar to that in the central area: the manufacturing sector has replaced the agriculture and service sectors.

As a result, both the central and eastern regions have become a magnet for labor from other low-income, lagging areas, including the western, southern, northern, and northeastern regions. The northeastern region, in particular, has long housed the poorest of the country, as reflected in its high poverty rates. Its regional GDP was only about 30 percent of the country average. The southern region's economic structure is quite distinct from that of other regions, with the agriculture sector

relatively more relevant than manufacturing. Households generate income mainly from agriculture and services based largely on natural resources, including rubber plantations and tourism. Its ability to catch up with other regions is generally weak.

Several studies attribute the success of the catching-up process in Thailand to a number of growth policies that have promoted industrialization, globalization, and urban-based development (see, for example, Krongkaew 1996; Siamwalla and Jitsuchon 2007). However, Ikemoto and Limskul (1987) and Tinakorn (1995), among many others, assess the impact of such growth-promoting policies on income distribution

Figure 12.6 Composition of regional GDP in Thailand, by region and economic activity, 1981–2005



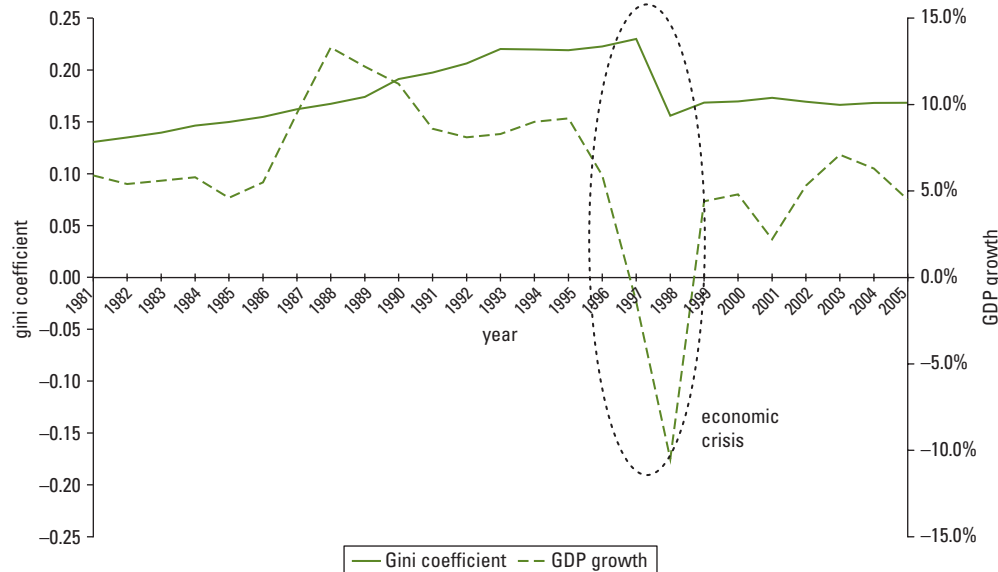
Source: Author's calculation based on data from National Economic and Social Development Board.

and conclude that they tend to deteriorate equality. According to a survey by Siriprachai, Wisaweesuan, and Srisuchart (2004), industrialization policy did not lead to permanent job creation and thus resulted in long-term inequality, and the export promotion policy helped to reduce absolute poverty but widened income distribution.

The regional Gini index,³ constructed based on income earned by population living in 76 provinces over seven regions

in Thailand, exhibited a continual upward trend between 1981 and 1997, rising from 0.13 to 0.24 (see figure 12.7). This indicates that the income gap widened even as economic growth accelerated. Thanks to the economic crisis in 1997, Thailand's regional Gini index fell sharply to 0.1560. In 2005 the figure stayed at 0.1683, which was higher than the figure in 1980.

However, an assessment of income distribution based on the Gini coefficient of

Figure 12.7 Gini coefficient and economic growth in Thailand, 1981–2005

Source: GDP growth from NESDB and GINI coefficient from author's calculation.

consumption spending between 1988 and 2006 shows an improvement in equality (see table 12.4). Yet the level of Gini was still as high as 0.4148 in 2006, which, according to Siamwalla and Jitsuchon (2007), is similar to the level in Latin American countries such as Argentina and Mexico. Gini coefficients at the regional level improved everywhere, except in the northern and northeastern regions and in rural areas. These areas are experiencing greater intraregional disparities, with Gini coefficients of 0.4048, 0.3948, and 0.3882, respectively, in 2006.

As asserted earlier, globalization and industrialization are engines of growth. Thailand has a close relationship with international economies in terms of both trade and investment, as indicated by an increase in the degree of openness: from 90 percent of GDP in 1995 to 149 percent of GDP in 2005 (see table 12.5). Thailand also enjoys an influx of capital, which generates greater employment and migration of labor into the export sector. Although it is impossible to establish a concrete relationship between greater connectivity to the global market and a lower Gini coefficient, in the manufacturing sector, machinery and manufactured goods together share about 70 percent

of total export values, and machinery, fuel, and lubricants together share about 57 percent of total import values.

Israngkura (2000) employs a social accounting matrix to evaluate the impact of free trade areas on income distribution and concludes that export-led growth via globalization and greater intensity of regionalism, particularly in the form of a free trade area, results in deteriorating income distribution in Thailand. In particular, nonagricultural sectors earn triple the income earned by the agricultural sector (B 154,774 and B 57,010, respectively). More important, inequality is higher in the nonagricultural sector, which has a Gini coefficient of 54.41, compared with the agricultural sector, which has a Gini coefficient of only 17.78.

According to Israngkura (2000), the worst scenario would occur in the presence of financial liberalization that brings about growth in the service sector. In this regard, Wattanakuljarus (2007) studies the tourism sector to assess the impact of growth on income distribution and finds that for every 10 percent increase in tourism, 3.72 percent in additional income will accrue to nonagricultural labor and 2.53 percent in additional income will accrue to agricultural labor.

Table 12.4 Gini coefficient of consumption spending in Thailand, by region, 1988–2006

Year	Thailand	Bangkok	Central	North	Northeast	South	Urban	Rural
1988	0.4387	0.3627	0.3767	0.3952	0.3877	0.3773	0.4058	0.3787
1990	0.4433	0.3845	0.3864	0.4111	0.3816	0.3611	0.4173	0.3856
1992	0.4500	0.3926	0.3717	0.3898	0.3960	0.3739	0.4230	0.3639
1994	0.4377	0.3641	0.3732	0.3983	0.3909	0.3983	0.4085	0.3811
1996	0.4313	0.3484	0.3597	0.3871	0.3785	0.3742	0.4104	0.3592
1998	0.4092	0.3261	0.3354	0.3583	0.3428	0.3612	0.3784	0.3489
2000	0.4283	0.3289	0.3657	0.3745	0.3517	0.3742	0.3951	0.3594
2002	0.4179	0.3650	0.3539	0.3819	0.3559	0.3661	0.3939	0.3552
2004	0.4255	0.3585	0.3647	0.4062	0.3760	0.3871	0.3956	0.3838
2006	0.4183	0.3584	0.3589	0.4048	0.3908	0.3740	0.3897	0.3882

Source: Community Economic Development and Income Distribution Office (CEDIO).

Table 12.5 Openness and income distribution in Thailand, 1995–2005

Year	Trade value (percent of GDP)	Gini ^a	GDP per capita		Change in openness (percent) ^b
			Baht	Change (percent)	
1995	90.4	0.2191	70,474	n.a.	n.a.
1996	84.8	0.2227	76,847	9.0	-6.2
1997	94.6	0.2299	78,093	1.6	11.6
1998	101.9	0.1560	75,594	-3.2	7.7
1999	104.0	0.1686	75,026	-0.8	2.1
2000	124.9	0.1697	79,098	5.4	20.1
2001	125.1	0.1732	81,915	3.6	0.2
2002	122.0	0.1693	86,322	5.4	-2.5
2003	124.3	0.1664	92,960	7.7	1.9
2004	136.4	0.1682	101,092	8.7	9.7
2005	148.8	0.1683	109,440	8.3	9.1

Source: Bank of Thailand.

n.a. Not applicable.

a. Based on the regional Gini index in Fu (2004).

b. Degree of openness is measured by the ratio of trade value to GDP.

In terms of capital account, Thailand is a net recipient of foreign direct investment (FDI), with net flows amounting to B 383 billion (see table 12.6). FDI grew rapidly, at 71 percent a year, between 1985 and 1990, as a result of the government's industrialization policy and several export promotion measures. Thailand experienced only one period of continuous decline in FDI—between 1990 and 1995, a period in which financial liberalization created an influx of short-term capital and portfolio investment that replaced a large proportion of FDI. Since then, FDI has increased steadily, growing, on average, 22 percent a year.

A great deal of FDI in the manufacturing sector has intensified the imbalance between agricultural development and industrialization, exacerbating the uneven distribution of income. The need to raise income in the agricultural sector has received far less government attention.

For several decades, the policy has been to raise income in rural areas through measures such as price supports. This approach has not succeeded in raising agricultural income. As Siamwalla and Jitsuchon (2007) argue, agricultural development policy that improves productivity and promotes competitiveness is preferable because it helps to protect the Thai agricultural sector from the adverse impacts of agricultural liberalization in the years to come.

Attempts to alleviate the problem

The government's approach to alleviating regional disparities is contained in the official National Economic and Social Development Plans (see table 12.7). The first one was launched in 1963, with major emphasis on investment in infrastructure throughout the country. A large proportion of the government budget was spent on the construction

Table 12.6 Net inflows of foreign direct investment in Thailand, 1970–2006

Year	FDI (baht billion)	Five-year growth (percent a year)
1975	1.7	14.4
1980	3.9	17.3
1985	4.4	2.6
1990	64.7	71.2
1995	50.0	-5.07
2000	115.3	18.2
2005	262.6	17.9
2006	382.9	45.8

Source: Bank of Thailand.

of roads, railways, and several facilities that support growth of the industrial sector; a negligible amount was spent on research and development in the agricultural sector.

At the end of the first plan, rural-urban differences became evident, which led the government to attempt to reduce the income gap. The success of this effort is mixed. The government succeeded in reducing the income gap from 2.56 times in 1994 to 2.20 in 2004, but it was unable to address rural-urban differences in income. As shown in table 12.2, monthly per capita income in urban areas increased from B 3,868 in 1994 to B 6,885 in 2004, while that in rural areas increased from B 1,510 in 1994 to B 3,130 in 2004.

In urban areas in 2004, the top 20 percent of income earners earned 80 times the earnings of the bottom 20 percent (see table 12.8). This difference was even higher in 1994, when the top 20 percent earned 110 times the earnings of the bottom 20 percent.⁴ In rural areas, the income gap has remained narrow, with the top 20 percent of income earners earning approximately four times the earnings of the bottom 20 percent throughout the decade.

The disparity may be observed not only across regions, but also within regions: the richer the area, the wider the income gap. Bangkok has the highest per capita income and the widest income gap. The northeastern region has the lowest per capita income and the smallest income gap. Based on an analysis of the ratio of the richest to the poorest income quintiles (Q5/Q1), the top 20 percent income group in Bangkok earned 986 times what the bottom 20 percent earned in

Table 12.7 Major emphasis of national economic and development plans in Thailand

Plan	Period	Major emphasis
1	1963–66	Investment in infrastructure
2	1967–71	Sectoral development
3	1972–76	Job promotion
4	1977–81	Alleviating poverty and reducing income distribution
5	1982–86	Balanced development
6	1987–91	Productivity-based development
7	1992–96	Decentralization of public authorities
8	1997–2001	Focus on human resources
9	2002–06	A self-sufficient economy
10	2007–11	Green and happiness society

Sources: NESDB, author's compilation.

2004. The figure was especially high in 1994, when the gap was larger than 2,000 times. The northeastern region is the poorest in the country and has relatively even distribution of income, with the Q5/Q1 ratio being only about two to three times.

The fourth National Economic and Social Development Plan (1977–81) gave high priority to alleviating poverty and reducing income inequalities. The issue was again addressed in the seventh plan, which sought to decentralize development. However, the plan was poorly implemented, especially in the regional context, as only a limited amount of infrastructure was made available to the regions and rural areas (Dixon 1999).

The problems persist, owing in part to the uneven spatial distribution of the public budget. The most recent figures for 2003–06 indicate that more than 50 percent of the government budget was spent in Greater Bangkok (see figure 12.8). As Greater Bangkok continues to grow, the budget inequality deepens even further. In 2006 the government budget spent within Bangkok and its vicinities grew at 14.8 percent, followed by the northeastern and the southern regions, which grew at 9.9 and 1.9 percent, respectively. The northeastern region received the second-highest proportion of the budget, about 13 percent, but the sum was still far lower than the amount going to Bangkok and its vicinities. In fiscal 2006 Bangkok received B 123,057 per capita of government spending, while the northeastern region received only B 8,448. The following regions receive a share of the

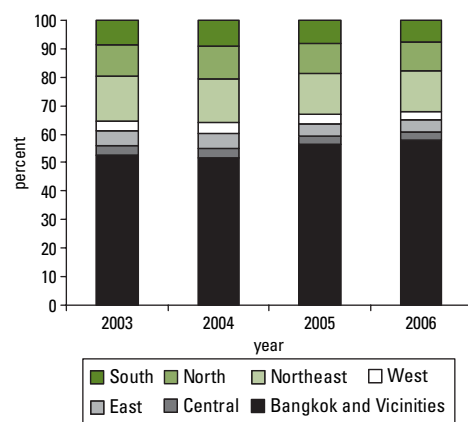
Table 12.8 Ratio of Q5 to Q1 in Thailand, by region, 1994–2004

percent of income

Region and quintile	1994	1996	1998	2000	2002	2004
Bangkok	2,263.94	2,890.00	1,991.56	4,499.84	1,409.69	985.95
Central	36.30	33.81	31.81	53.34	38.49	37.73
North	8.31	8.44	8.42	6.82	6.00	5.90
Northeast	3.15	3.14	3.16	3.13	3.49	2.92
South	11.18	10.45	9.61	12.14	10.52	11.91
Thailand	14.07	13.52	13.06	14.55	13.23	12.10
Urban	110.45	110.68	100.69	112.03	91.40	80.18
Rural	4.52	4.19	4.45	4.89	4.47	4.48

Source: NESDB.

Note: Q1 = 20 percent lowest-income group; Q5 = 20 percent highest-income group.

Figure 12.8 Allocation of the government budget in Thailand, by region, 2003–06

Source: Comptroller-General's Department, Ministry of Finance.

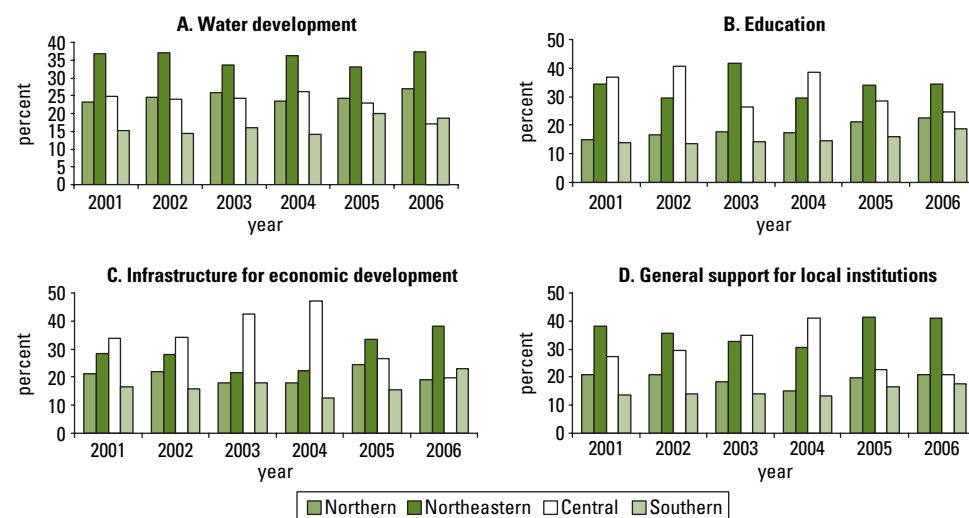
government budget, in descending order: the north, the south, the east, the west, and the central regions.

The uneven distribution of government budget across regions may be attributed to spatial disparities in Thailand, despite the absence of empirical evidence that fiscal policies over the past five decades brought about a narrowing or a widening of spatial disparities. Excluding Greater Bangkok, the northeastern region received the greatest share of the public budget for water development, education, and general support for local institutions (see figure 12.9), but its level of income remained low. The central region received the greatest share of public budget for infrastructure for economic development, and its per capita income rose, approximating that of Bangkok. Recently, the public budget for infrastructure for

economic development was diverted to the northeastern region, suggesting that the government views infrastructure as a means of promoting growth and decentralization.

The uneven distribution of public finance results in the “poor” being poor not only in terms of income but also in terms of access to basic services required for improving their quality of life, developing their skills, and raising their productivity. Table 12.9 presents the spatial distribution of health care and education resources by region, revealing once again the concentration of productive resources in Greater Bangkok. For example, 41 percent of doctors, 26 percent of pharmacists, 30 percent of nurses, and 31 percent of dentists are working in Bangkok and its vicinities. Government spending per capita on health care was B 8,484 in Bangkok and merely B 763 in the northeastern region. Even if the scarcity of medical services does not necessarily lead to low productivity, differences in life expectancy do lead to differences in earning capacity. It is not clear whether greater availability of resources would lead to higher income. For example, per capita income in the central region is relatively high, but the proportion of health care resources is relatively small. This may be explained by the region's proximity to Bangkok and its vicinities.

Education also contributes to inequalities. In general, higher education successfully reduces the proportion of the population living in poverty (see table 12.10). However, Siamwalla and Jitsuchon (2007) argue that higher education will not take people away from poverty even in the medium to long term, because the quality of education rather than the proportion of the population who

Figure 12.9 Allocation of the government budget in Thailand, by activity and region (excluding Bangkok and its vicinities), 2001–06

Source: Ministry of Finance, Comptroller-General's Department.

Table 12.9 Availability of health care resources in Thailand, by region

percent

Region	Doctors	Pharmacists	Technical nurses	Nurses	Dentists
Bangkok and vicinities	41	26	20	30	31
Central	4	5	7	5	4
North	15	19	17	18	19
Northeast	17	21	24	20	21
South	10	14	16	13	12
West	5	6	6	6	5
East	8	8	9	8	7
Thailand	100	100	100	100	100

Source: NESDB.

Table 12.10 Proportion of the poor in Thailand, by education of the head of household, 1996–2004

Education	1996	1998	2000	2002	2004
None	28.8	29.6	32.7	28.9	24.2
Kindergarten (two years)	—	—	—	—	18.2
Junior primary school (three years)	17.3	20.2	23.2	16.8	12.3
Senior primary school (three years)	12.6	16.3	18.2	14.0	11.1
Junior high school (three years)	6.3	6.1	7.9	4.6	4.8
Senior high school (three years)	6.8	3.3	4.6	4.7	3.0
University level	2.6	1.2	7.3	1.3	0.5
Vocational school	1.1	1.4	1.0	2.5	1.9
Others	—	—	3.5	—	—
Percentage of Thailand's population who are poor	15.2	16.5	18.8	13.9	10.3

Source: Data from National Statistical Office, computed by NESDB.

are educated is what raises productivity and the ability to earn income.

In this regard, Tangkitwanit and Manusboonpoempoon (2007) evaluate the impact of the income-contingency loan for education (ICL)⁵ on income distribution at the

national, not the regional, level. They find that more loans are allocated to the lower-income population at both the high school and the university levels, which successfully distributes income to lower-income groups. However, when investigating the relative

effectiveness of the policy by education level, a more satisfactory outcome may be found at the high school than at the university level. This is true largely because the ICL is a tool for facilitating education, not investing in human capital, and the poor generally have limited access to a university-level education.

Conclusions

The spatial disparities in Thailand that are outlined in this paper reveal a decline in absolute poverty, as indicated by the proportion of the population who are poor, and the persistence of an income gap not only across but also within regions. For the past 50 years, various policies have sought to tackle the problem of income distribution at the national level, but not at the regional level. There is no clear evidence that spatial disparities are less severe now than before; nevertheless, some of the regional policies that successfully raised income in the area targeted also seem to have created gaps among regions. A balance is needed between agricultural development and industrialization. The allocation of government spending needs to be assessed critically, because many provinces are allocated less than 1 percent of the total budget, which will not lead to a narrowing of regional disparities. Rather, centralized policy is likely to remain ineffective. Further study is needed in areas such as regional job creation and its relation to the income-generating process and the linkage between government finance and the regional Gini index, to inform a complete and comprehensive policy on regional disparities in Thailand.

Notes

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1. Thailand's currency is the baht.
2. "Recovery," according to Siamwalla and others (2006: 4), is defined as the year in which economic growth started to outpace average growth during 1980–96, not including the year with economic shocks, and in which real national income bounced back to the same level as the pre-crisis figure.
3. This calculation is based on the alternative methodology of Fu (2004) for estimating the

Gini index, which takes into account the relative importance of regions as follows:

$$GINI = \frac{1}{2n^2\mu} \sum_{j=1}^n \sum_{k=1}^n n_j n_k |y_j - y_k|$$

where n is the total population, μ is the average income equal to total income divided by total population, j is the number of regions, k is the number of provinces, n_j and n_k are the population in region j and province k , respectively; and y_j and y_k are income per capita in region j and province k , respectively.

4. These figures need to be interpreted with caution, as a number of areas could transform themselves from rural to urban.

5. Commenced on January 16, 1996. As of 2005, the maximum annual loan varies by education level; that is, B 55,440 for high school; B 62,500 for vocational study; B 70,240 for higher vocational study; B 127,000 for sciences and health-related undergraduate studies; and B 100,000 for other undergraduate studies.

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