

Sources and Pro-Pooriness of Thailand's Economic Growth

Somchai Jitsuchon

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Abstract

Looking back around half a century, Thailand has been one of the fastest growing economies in the world. It also possesses an impressive record in term of poverty reduction. Whether the two phenomena are related and, if so, how, are of great interest to academic and policymakers. This paper attempts to shed some light on this issue, by first trying to provide descriptive explanation of what caused economic growth in the past 50 years, separated into five sub-periods, and then quantitatively calculates how much growth contributed to the reduction of poverty since 1986. We argue that the impressive growth rates could be attributed to the country's high and rising openness, sound macroeconomic management emphasizing stability in both fiscal and monetary policies, promotion of market mechanism and private sector, strengthening of key public policy agencies, and appropriate mix of quantity and quality of human resources. There were some disruptions in the growth process, most notably during late 1970s up to early 1980s, and the 1997 financial crisis. The disruptions were caused both by external factors, such as world recessions, effective appreciation of local currency under fixed exchange rate, and by domestic factors such as failure to timely adjust exchange rate system, lack of good governance in both public policy and private businesses.

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** Research Director (Macroeconomic Development and Income Distribution), the Thailand Development Research Institute Foundation, Bangkok, Thailand.

The second part of the paper is the analysis of pro-poorness of overall economic growth and the importance of income sources in reducing poverty. Applying Kakwani et.al (2004)'s methodology to Thai household data during 1986-2002, it is found that, before the crisis, economic growth helped poor more than proportionately since around 1992, when compared to the succeeding period of 1986-1992. After the crisis, the growth was unfavorable to the Thai poor only in 1999. Using household survey in 2000, the poverty elasticity is calculated at -1.206 , meaning that for every 1 percent increase in average per capita income, poverty would reduce by 1.206 percent. As for the importance of income sources in poverty reduction, the poverty elasticity indicates in-kind income, while the poverty reform index indicates rural non-form income and urban salary and farm-income as the most important income components in poverty reduction.

บทคัดย่อ

ในช่วงเวลาครึ่งศตวรรษที่ผ่านมา เศรษฐกิจไทยมีอัตราการขยายตัวที่สูงที่สุดแห่งหนึ่งของโลก นอกจากนี้ระดับความยากจนก็ลดน้อยลงอย่างน่าประทับใจ ประเด็นที่น่าสนใจทั้งในเชิงวิชาการและในเชิงนโยบาย คือ อะไรเป็นสาเหตุของการขยายตัวทางเศรษฐกิจ และความสัมพันธ์ระหว่างการขยายตัวทางเศรษฐกิจกับการลดลงของความยากจนนั้นเป็นอย่างไร บทความนี้เสนอคำอธิบายในสองส่วนนี้ โดยในส่วนแรกเป็นการรวบรวมและสรุปปัจจัยที่น่าจะเป็นคำอธิบายของอัตราการขยายตัวทางเศรษฐกิจในระยะกว่า 50 ปีที่ผ่านมา โดยแบ่งออกเป็นห้าช่วงเวลา กล่าวโดยสรุป การขยายตัวทางเศรษฐกิจที่สูงของไทยเกิดจากปัจจัยหลัก ๆ คือ ระดับการเปิดประเทศที่กว้างและมากขึ้นเรื่อย ๆ การบริหารจัดการเศรษฐกิจมหภาคที่รอบคอบ และเน้นการรักษาเสถียรภาพทั้งในด้านนโยบายการคลังและนโยบายการเงิน การส่งเสริมกลไกการตลาดและภาคเอกชน การสร้างความเข้มแข็งให้กับองค์กรหลักภาครัฐในการบริหารเศรษฐกิจ และสุดท้ายคือการมีทรัพยากรมนุษย์ที่มีความสมดุลระหว่างคุณภาพและปริมาณ เมื่อเศรษฐกิจไทยประสบปัญหาวิกฤติและเกิดการสะดุดหยุดยั้งของการขยายตัวทางเศรษฐกิจ สาเหตุก็มักจะเกิดจากปัจจัยด้านลบจากภายนอก เช่น ความถดถอยของเศรษฐกิจโลก การแข็งค่าของสกุลเงินหลักที่เงินบาทผูกติดอยู่ด้วยในสมัยที่ยังใช้ระบบอัตราแลกเปลี่ยนคงที่ หรือจากปัจจัยภายใน คือความล่าช้าในการปรับอัตราแลกเปลี่ยนให้เหมาะสม และการขาดธรรมาภิบาลที่ดีในการบริหารงานภาครัฐและในการดำเนินธุรกิจเอกชน

ในส่วนที่สอง บทความนี้ทำการคำนวณดัชนี 3 ตัวที่ช่วยในการประเมินความสัมพันธ์ระหว่างอัตราการขยายตัวทางเศรษฐกิจและการลดลงของความยากจน โดยประยุกต์ใช้จากงานวิจัยของ Kakwani et.al (2004) กับข้อมูลของไทยระหว่างปี ค.ศ. 1986-2002 โดยพบว่าในช่วงก่อนเกิดวิกฤติการเงินในปี 1997 นั้น การขยายตัวของเศรษฐกิจมีลักษณะที่ช่วยลดความยากจนมากกว่าปกติ (pro-poor growth) ตั้งแต่ปี 1992 ในขณะที่ช่วงระยะเวลาก่อนหน้า คือระหว่างปี ค.ศ. 1986-1992 การขยายตัวมีส่วนช่วยคนไม่จนมากกว่าคนจน ส่วนระยะเวลาหลังวิกฤติเศรษฐกิจ พบว่าในปีแรกหลังวิกฤติ คือปี 1998 คนจนมิได้รับผลกระทบนัก ผลกระทบจะแรงมากในปี 1999 และเริ่มทรงตัวระหว่างปี 2000-2002 ข้อค้นพบนี้สอดคล้องกับค่าดัชนีความยืดหยุ่นของระดับความยากจนต่ออัตราการขยายตัวทางเศรษฐกิจ (poverty elasticity) ซึ่งมีค่า -1.206 ในปี 2000 หมายถึงความยากจนจะลดลง 1.206 เปอร์เซ็นต์เมื่ออัตราการขยายตัวทางเศรษฐกิจเพิ่มขึ้น 1 เปอร์เซ็นต์ ในส่วนของแหล่งรายได้ที่มีผลต่อการลดลงของความยากจนมากที่สุด พบว่าหากตรวจสอบด้วยดัชนี poverty elasticity รายได้ที่มีใช้ตัวเงิน (in-kind income) มีความสำคัญ ในขณะที่หากตรวจสอบด้วยดัชนี poverty reform index รายได้นอกภาคการเกษตรในเขตชนบท และรายได้เงินเดือนและรายได้ภาคการเกษตรในเขตเมือง มีความสำคัญสูงสุด

Looking back around half a century, Thailand is among one of the fast growing economies in the world. It also possesses an impressive record in term of poverty reduction. Whether the two phenomena are related, and if so, how, are of great interest to academic and policymakers. Numerous researches have demonstrated that growth is good for poverty reduction. The more relevant question is how much is growth good for poverty reduction. The recent literature thus focuses on the issue of pro-poor growth.

This paper attempts to shed some light on this issue for the case of Thailand. The first section describes the country's growth experience, in which the overall picture of growth and growth accounting are presented. It then proceeds with the factors that are potentially capable of explaining episodes of growth in the past fifty years. For each growth episode, attention will be paid to the major changes in environment and policies that are likely to affect growth performance. Specifically, four categories of factors that pose defining influences are considered. They are (a) political environments, (b) external environments, (c) macroeconomic environments

and policies, and (d) microeconomic or institutional environment and policies. Section 2 then presents the results of the estimates of pro-poor growth for Thailand during 1986-2002.

1. Growth Experiences

The purpose of this section is to provide detailed accounts in the past fifty years, from 1952-2005, of changes in policies and environments in Thailand that are potentially crucial to the understanding of the growth process. It will do so by dividing Thai economic history into four sub-periods, namely,

I) 1952-1973: a period that Thailand laid foundations for the subsequent high and stable economic growth.

II) 1974-1985: a period of macroeconomic uncertainty, hardship and difficult adjustments.

III) 1986-1996: the decade of extraordinary high growth.

IV) 1997-2000: economic crisis.

V) 2001-present: a period of steady recovery to the normal time.

Overall, Thailand can be regarded as one of the fastest growing economies among developing countries. The average annual growth rate between 1952 and 2005 is a respectable 6.3 percent. Figure 1 shows the yearly growth rate since 1952.

Of course, high growth rates were not achieved year in year out, and were not identical between sector of production. Table 1 summarizes the economic growths of Thailand, divided into four sub-periods, and by major economic sectors (agriculture, industry, manufacturing, and service).

The sub-period III (1986-1996) is clearly the time Thailand enjoyed its highest economic growths, averaging 9.2 percent per annum. These high growths were led by the growths in manufacturing sector. It also is the most stable period, having the coefficient of variation of

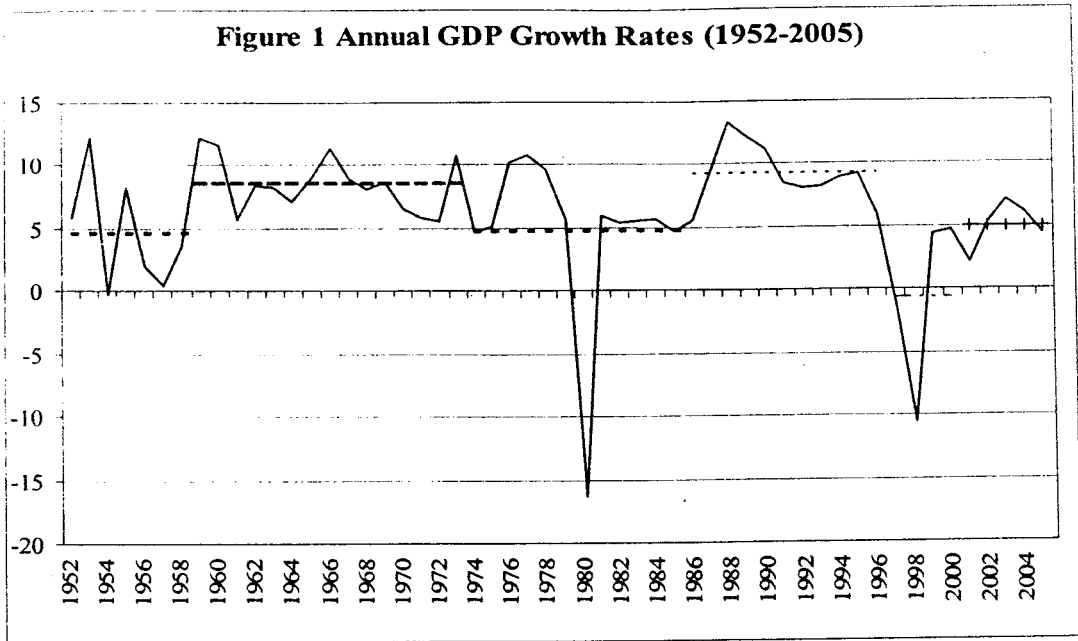
growth rates of only 0.26 (see also Table 1). On the other hand, the sub-period IV (1997-2000) is no doubt the most difficult time in Thai economic history, growing on average of -0.7 percent with bulging standard deviation of 7.1 percent, amounting to a -10 coefficient of variation. Thailand has quickly turned from its most prosperous time into the most difficult one.

The reverse, but to a much lesser degree, can be said about the growth path within the sub-period I (1952-1973). The early part of this period (1952-1958) saw a relatively low growth (4.6 percent) with high variation (0.97 coefficient of variation), which were in contrast with the later part of the period (1959-1973).

Table 1 Thailand's Growth Structure 1952-2005 (percentages)

	1952-1973 (I)			1974-1985 (II)	1986-1996 (III)	1997-2000 (IV)	2001-2005 (V)
	1952-1973 (I)	1952-1958 (Ia)	1959-1973 (Ib)				
GDP Growth							
Agriculture	4.7	3.1	5.5	3.7	3.1	1.8	1.6
Industry	9.6	7.2	10.8	7.5	12.1	-0.2	6.4
Manufacturing	9.4	5.9	11.0	7.1	12.3	2.1	6.6
Services	7.8	4.8	9.1	4.0	8.7	-1.5	4.5
Total	7.3	4.6	8.5	4.7	9.2	-0.7	5.0
GDP Share							
Agriculture	25.9	30.2	23.9	17.7	12.3	10.0	9.7
Industry	18.6	16.1	19.8	27.7	37.8	41.4	43.6
Manufacturing	14.3	13.1	14.9	22.0	29.6	34.9	37.8
Services	55.5	53.6	56.4	54.5	49.9	48.6	46.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Contributions to Growth							
Agriculture	1.2	1.0	1.4	0.7	0.4	0.2	0.5
Industry	1.8	1.1	2.1	2.0	4.5	0.0	2.6
Manufacturing	1.4	0.8	1.7	1.5	3.6	0.8	2.4
Services	4.3	2.6	5.1	2.4	4.4	-0.8	1.7
Total	7.3	4.6	8.5	4.7	9.2	-0.7	4.8
Standard Deviation of Growth							
Agriculture	5.8	7.9	4.8	3.2	5.0	3.9	6.3
Industry	4.4	6.1	3.0	4.6	3.5	10.1	3.0
Manufacturing	5.2	7.4	2.8	4.5	3.3	9.7	3.4
Services	3.6	3.4	2.9	10.7	2.3	5.9	1.6
Total	3.5	4.5	2.2	7.0	2.4	7.1	1.9
Coefficient of Variation							
Agriculture	1.24	2.55	0.86	0.86	1.60	2.14	3.85
Industry	0.46	0.84	0.28	0.61	0.29	-54.01	0.47
Manufacturing	0.55	1.25	0.25	0.64	0.27	4.52	0.52
Services	0.46	0.71	0.31	2.66	0.26	-3.88	0.36
Total	0.48	0.97	0.26	1.48	0.26	-10.64	0.37

Source: National Economic and Social Development Board, Thailand



Source: National Economic and Social Development Board (NESDB).
 Note: Dotted lines indicate the average growth level for each sub-period.

1.1 Growth Accounting

Table 2 and Figure 2 show growth accounting for the period 1981-1995. The overall growths are decomposed into those contributed by increases in input uses and that by increases in total factor productivity or TFP.

As in most studies of growth accounting of East Asian (and also countries in other regions); capital accumulation accounted for the lion share of growth contributions, rising to as high as about 80% during 1991-1995.

The contributions from labor were rapidly superseded by the increases in quality. Standing at only 4.4 percent contribution during 1981-1985¹ the labor quality increased to 8.2 percent during 1986-1990. It further increased to 16.7 percent during 1991-1995, well surpassing the contribution from the increase in labor alone (4.8 percent).

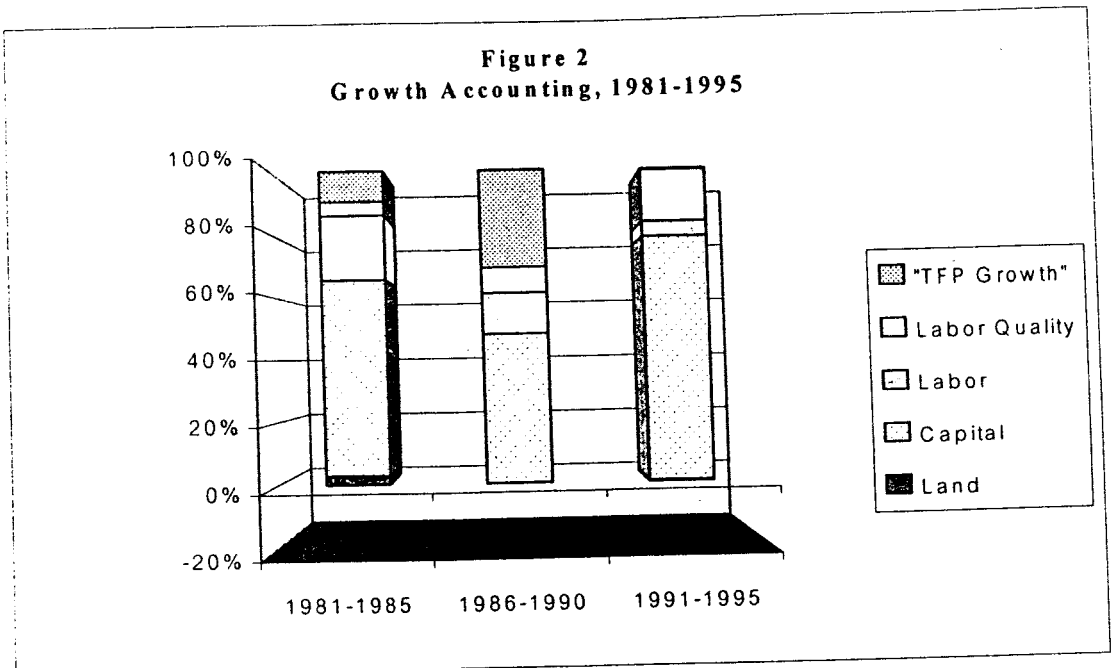
¹ Equals the quality-adjusted labor contribution (25.1) minus quality-unadjusted labor contribution (2)

The growth of TFP was more pronounced during 1986-1990, and was almost negligible in the subsequent period of 1991-1995.

Table 2 Sources of Growth by Sectors, 1981-1995 (percentages)

	Land	Capital	Labor		TFP	
			Unadjusted	Quality-Adjusted	Unadjusted	Quality-Adjusted
1981-1985	2.9	62.2	20.7	25.1	14.1	9.7
Agriculture	4.0	11.7	21.6	41.8	62.7	42.5
Industry		86.2	28.0	42.7	-14.2	-28.9
Manufacturing		68.3	31.9	57.1	-0.2	-25.5
Services		74.9	34.0	52.3	-8.8	-27.2
1986-1995	-0.3	61.6	9.3	21.4	29.4	17.3
Agriculture	-0.9	90.6	-7.1	-4.2	17.4	14.5
Industry		64.1	27.3	36.5	8.6	-0.5
Manufacturing		59.4	28.1	37.1	12.5	3.5
Services		65.7	24.6	33.0	9.7	1.3
Of which: 1986-1990	-0.2	47.6	13.1	21.3	39.6	31.3
Agriculture	-0.9	59.3	23.3	35.6	18.3	6.0
Industry		49.0	24.3	26.6	26.7	24.4
Manufacturing		47.6	27.0	26.0	25.4	26.4
Services		52.1	18.9	32.6	29.0	15.3
Of which: 1991-1995	-0.5	78.6	4.8	21.5	17.1	0.4
Agriculture	-0.8	117.3	-33.2	-38.3	16.7	21.8
Industry		84.5	31.5	49.9	-15.9	-34.4
Manufacturing		75.6	29.7	52.4	-5.3	-28.0
Services		82.3	31.7	33.5	-14.0	-15.8

Source: calculated from Tinakorn and Sussangkarn (1998), table 8,13, 14, 15, 16.



Source: Table 2.

1.2 Explaining Growths

This section explains factors that are most likely capable of explaining growths in each sub-period. As mentioned earlier, the explaining factors are classified into political, external, macroeconomic environments and policies, and microeconomic and institutional factors. Table 3 to 6 maps out the timeframe when these factors took place and how long they lasted.

I) 1950-1973: A period of Institutionalization leading to High and Stable Growth

Macroeconomic Management, Politics and Institutions

In 1950, Thai economy found itself in the state of recovering from damages left over from the Second World War.

The economic management during the most part of the 1950s decade was probably best described as eccentrically diverse, trying to serve many goals that did not seem to add up. The multiple exchange rate system was used to both generate revenue for the government and to

subsidize urban population via unfavorable rate for rice export, which suppressed domestic price of rice.

The nationalism that arose after the triumph of the communists in China in 1949 had also played a significant role. The military government at the time put forward the anti-Chinese policies that limited the Chinese entrepreneurs from doing various 'key' businesses. In these businesses, the government set up many public or quasi-public enterprises that enjoyed monopoly rights². The Chinese commercial communities adapted to the situation by forming business alliances with military top men. These alliances laid the foundation for business-bureaucrat relationship that exists throughout Thailand's economic development history.

The economic mismanagement and the repression against Chinese businesses resulted in poor macroeconomic performance. The GDP grew only at 3.9 percent per annum during 1951-1958.

The turbulence prevailing in 1950s was put to an end in 1958, when Field Marshall Sarit Thanarat took complete control of the power through a coup d'état. Sarit brought with his premiership a vision to run the country according to the international standard, comprehensively prescribed in a World Bank report (IBRD, 1959)³. He also presided over a period of rapid institutionalization of various public units that proved to be vital to the later economic development. Two new units were established, the Budget Bureau (1959) and the Fiscal Policy Office (1961), and one revamped, the National Economic Development Board (1959)⁴. These three units and the Bank of Thailand jointly determined the annual budget, which in those days gave high priorities to development projects, primarily infrastructure constructions. The goal and

² The setting up of monopoly entities was a means that military used to acquire wealth, which was lost substantially because of the hyper-inflation after the War.

³ The influence of the World Bank did not begin with the 1959 report. In fact, Thailand was the first country in East Asia that borrowed from the World Bank (Faculty of Economics, Thammasat University, 1996, page 38). The 1959 report itself was also a result of a World Bank mission that came to Thailand before Sarit's time. What Sarit did was putting the scheme into action.

⁴ Its name was changed to the National Economic and Social Development Board in 1972.

means of economic development engineered by Sarit government were officially declared in the country's first National Economic and Social Development Plan.

Business activities were also enhanced by the policy shift toward a more investment-friendly to domestic private and foreign investors.

The role of military-founded monopolies was greatly diminished and a comprehensive investment promotion policy was launched with the pass of the new Industrial Investment Promotion Act in 1959. Compared to the previous act, this law gave more genuine projections to investors and numerous domestic and foreign firms sprung up to take up these protective benefits.

Despite the more favorable atmosphere, the commercial sector and investment demand were not the major contributors to the high economic expansion, which recorded at 7.2 percent per annum between 1958 and 1973. It was the agriculture sector that proved to be the primary engine of growth for the period. Helped by the government expenditure on road building, the farmers rapidly opened up land further away from rivers and railway lines, which they had been using for transporting their products to the markets before the road network was built⁵. Equally important was the building of large-scale irrigation system that facilitated the dry season cultivation of rice, most notably in the central region.

The dynamics of agricultural production in this period is perhaps a good example of how economic growth in Thailand has been driven by increasing uses of inputs instead of advancing technology. When corrected for land expansion and irrigation provision, one would find that there was no real gain in production yields.⁶

Linkages between growths in agricultural sector and the industrial sector are worth noting. Agriculture growths were driven mainly by accelerated export demand. The foreign and government revenue derived from the expansion in agricultural export and production in 1960s

⁵ The clearing of the forests, promoted by the government's giving out concessions, also explains the rapid expansion of agricultural land.

⁶ Siamwala (1997)

provided necessary resources for early industrialization that was primarily aimed at substituting imports.

In summary, the key to success of Thailand's early modern economic development owed much to the combination of (a) a vision to promote economic growth through macroeconomic management, favorable business environment, and institutional strengthening, and (b) a strong sense of fiscal discipline. The fiscal discipline, exhibited mainly by the curb on public debt creation, was an indispensable ingredient to the uninterrupted process of high and stable economic growth during one and a half decades that followed. In this regard, Thailand was lucky to be able to build such vital fiscal discipline under the corrupt military rulings.

II) 1974-1985: Political Uncertainty and Economic Turbulence

Quite coincidentally, the economic and political stability Thailand could be said to end on the very same week in October 1973. Domestically, the military Thanom government resigned amidst the massive protestation from the general public and, internationally, the six-day war broke out in the Middle East, which marked the beginning of the first oil shock. The outburst of political freedom, long suppressed under the military power, was unfortunately coincided with the triumph of communists in Indo-chines neighbors. The fear of the so-called 'domino theory', that Thailand would soon follow suit to be taken over by the communism movement, led to one of the most vigorous confrontations in Thai history, most notably between the lefts and the rights. The confrontation ended tragically in 1976, when the right-wing military once again took over the power.

However it ended, the seed of political awareness following the 1973 uprising has permanent implications on Thailand's economic and policy arena. All the governments since then could not, as they had been able to before, be totally ignorant to the needs of people, even during the right-wing political suppression of 1976-1979. One of the consequences of this development was the soaring government budget deficit, arising from the increased government expenditure, which eventually led to the serious public debt problem during the first half of 1980s.

Not only was the increasing government expenditure explained by the changing political structure, but also by the need for the government to counter the economic slumps that followed the two sharp oil price hikes (the first and the second oil shocks) and the world recession of early 1980s. The difficulties associated with the two oil shocks were however different in magnitude. Helped by the commodity prices boom during 1972-1974 during the first oil crisis, Thailand was not as fortunate when the second oil crisis hit in 1979-1980, as the mounting problem of budget deficit/debt and the tumbling of world commodity prices coincided during 1980-1985.

Table 3 Factors Influencing Thailand's Growth, 1950-1973

Year	'50	'51	'52	'53	'54	'55	'56	'57	'58	'59	'60	'61	'62	'63	'64	'65	'66	'67	'68	'69	'70	'71	'72	'73
Growth			5.8	12.2	-0.2	8.3	2.0	0.5	3.6	12.2	11.6	5.7	8.4	8.2	7.1	9.1	11.3	8.9	8.1	8.7	6.6	5.8	5.5	10.8
Political/Economic Nationalism																								
Political Events	<p>Coup</p> <p>Military Ruling</p>																							
External Influences	<p>Stable economies in most developed countries</p> <p>Major currencies floated</p> <p>Food prices boom</p> <p>Oil Shock</p>																							
Macro Policy & Environment	<p>Public Enterprises Monopolies</p> <p>Investment Promotion</p> <p>1st National Plan</p> <p>2nd National Plan</p> <p>3rd Plan</p>																							
Micro & Institutions	<p>Economic Institution Setup</p> <p>Basic Infrastructure Buildup (Road, Irrigations)</p> <p>Agricultural Land Expansion</p>																							

Table 4 Factors Influencing Thailand's Growth, 1974-1985

Year	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Growth	4.7	5.1	10.2	10.7	9.7	5.7	-16.4	5.9	5.4	5.6	5.8	4.6
Political Events	Political confrontation											
Political Events	Coup											
Political Events	Military-backed governments											
Political Events	Fear of 'domino' theory											
Political Events	Relatively stable politics (despite two coup attempts)											
Political Events	'semi-democratic' government, led by Gen. Prem T.											
External Influences	2nd oil shock											
External Influences	World recession											
External Influences	High world interest rates											
External Influences	High agricultural product prices											
External Influences	Low world commodity prices (from over supply)											
External Influences	Appreciated U.S. dollar against other major currencies											
Macro Policy & Environment	Politically motivated expansionary fiscal policies											
Macro Policy & Environment	Tight fiscal policy											
Macro Policy & Environment	Introduction of export-led growth policy, 1977 Investment Act enacted											
Macro Policy & Environment	15% Devalued											
Macro Policy & Environment	Lending rate ceiling lifted											
Macro Policy & Environment	Setup FIDF											
Macro Policy & Environment	New Forest Act											
Macro Policy & Environment	Financial Inst. crisis											
Macro Policy & Environment	Financial Inst. crisis											
Macro Policy & Environment	Basket exchange											
Micro & Institutions	Setup SET											
Micro & Institutions	Financial Inst. crisis											
Micro & Institutions	Financial Inst. crisis											

Table 5 Factors Influencing Thailand's Growth, 1986-1996

Year	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	
Growth	5.5	9.5	13.3	12.2	11.2	8.6	8.1	8.3	9.0	9.2	5.9	
Political Events	Stable politics											
					Coup		Black Monday					
External Influences	Currencies realignment (stronger Yen, weaker dollar)											
						Gulf War						
	Relocation of FDI to Southeast Asia											
	Weak oil prices											
	Japanese economy slowdown											
	Low agricultural prices											
Macro Policy & Environment	Conservative fiscal policy											
									Investment Boom			
				Deposit rate ceiling lifted				Setup BIBF				
									Capital Inflows, Bubble			
					IMF article 8							
	Gradual liberalization of financial sector.											
Micro & Institutions									Setup BIBF			
					Real estate boom and speculation							
										Stock prices boom and speculation		

The economic hardship caused changes in politics. In 1980, General Prem Tinnasulanon took the office of Thailand's premiership, where he stayed for the next eight years. His term is considered one of the most stable political in Thai history, in spite of a number of coup de'tat attempts. This is a remarkable achievement, considering the rapidly changing economic conditions during the period. On economic achievements, his governments managed to restore fiscal discipline during 1982 to 1985.

Thai economy was also greatly affected by the rapid movements in some of the world major currencies, an experience the country had not been prepared to deal with before. After the collapse of the Bretton-Wood system, Thailand chose to continue pegging its currency with the U.S. dollar. This decision proved to be costly when the U.S. currency appreciated against other major currencies between 1978 and 1985. As a result, the Thai baht was therefore de factor appreciated, which contaminated the country's competitiveness. Thai government was forced to devalue the currency by 15% in 1981, and went on to abandon the single-currency fixed exchange rate to the basket system in 1984, which amounted to an effective devaluation against the U.S. dollar by another 15%.

This sub-period also witnessed a major structural change in production. Agriculture sector, which expanded rapidly in 1960s into the late 1970s, now faced with two major obstacles to further growths: the declining world prices since 1980 and the rapidly dwindling of forest areas suitable for agricultural production. The average agricultural growth during 1974-1985 was a mere 3.8% compared to 6.0% during 1959-1973. In the meantime, the attempt to shift the country's industrial policy from import-substitution to export-promotion began to gain momentum. The hallmark of this policy shift was the enactment of the 1977 Investment Promotion Act. However, the success of the new industrial policy was limited by at least three factors, namely,

- (a) the unfavorable world economy at the time,
- (b) the over-valuation of the baht during 1981-1984, and
- (c) the tight fiscal policy since 1982.

One of the symptoms of the economic difficulties manifested itself in the crises of the financial institutions. Between 1979 and 1986, there were episodes of financial institution problems spreading all over the period. But generally speaking, the problems can be clustered into two separate waves, those beginning in 1979 and those beginning in 1983. The second wave was more serious than the first, with the closures of 20 finance companies and one commercial bank, and 25 finance and companies and 2 commercial banks were put under rescue package from the central bank⁷

Thailand during this sub-period was thus facing an unprecedented rise in both political and economic uncertainties. Economic hardship was felt most in the latter part of this sub-period (1979-1985), where the windfalls from commodity price boom in 1970s was over. The period can however be considered a period of transition, where many of the adjustments were necessary for the new economic structure of the next sub-period.

III) 1986-1996: Economic Boom, Speculation and Bubble

In contrast with the previous period, the 1986-1996 can be considered the most prosperous time of Thai economy, if one is to pay attention only on aggregate numbers.

The good time was most probably triggered by the external events. The first event was the 1985 Plaza accords that had effectively realigned major currencies, where dollar began to depreciate. Thai baht therefore depreciated likewise, as the U.S. dollar represented high weight in the basket system. In fact, the government even tacitly increased the U.S. dollar weight from about half to 90 percent⁸, to reap more benefits from this welcome turn of event. The second external factor was the sharp decrease in petroleum products since 1986, which remained low until the invasion of Kuwait by the Iraq in 1991.

Both accounts on the external front greatly benefited Thai exports, especially the manufactured ones. Weak currency together with reviving world economy from lowered oil

⁷ Siamwala (2001, p.8).

⁸ Siamwala (1997, p.17)

prices accelerated the manufactured exports. Another important by-product of the exchange rate realignment was the re-location of industrial productions from Japan, Taiwan and Hong Kong, whose currencies had been rising and needed to find new locations that were more cost-effective. Thus, investment capital in the form of FDI flooded into Thailand at an unprecedented magnitude.

The manufactured productions surged in response to growing export and investment demands. This was helped by the government's investment policy put in place a few years back, and also by the sluggish agricultural production (which grew at only 0.4 and 0.1 percent in 1986 and 1987), which released bulks of young and energetic unskilled labor suitable for light industries. The transition from agrarian economy was thus completed.

Political atmosphere had also been inducing to high growth. The relatively stable political scene associated with Prem government was followed by smooth transition to the Chatchai government in 1988. Although the Chatchai government was thrown out in the 1990 coup, the new government led by Anand Panyarachun was did not have problem getting acceptance from the public. In fact, some viewed the 1990 coup with positive eyes, citing the highly corrupt ministers and scandals in Chatchai government as the justifiable pretext. Such approval was short-lived, when in 1992 the military top men attempted to have direct control of the government, which led to another strong opposition and board demonstration among urbanites⁹. When the military finally receded, all the governments since 1992 all gained their power through parliamentary process. Although each government did not stay in office very long, one can reasonably concluded that Thailand had moderate political stability between late 1992 and 1997.

Thailand was sufficiently fortunate that despite the tendency among politicians and military rulers to engage in big-scaled corruption, the fiscal discipline remained largely intact during this period. There are possible three reasons for this remarkable achievement. First, the hardship associated with tight fiscal policy in the first half of 1980s, which was the result of lax

⁹ These demonstrators are sometimes called "mobile phone mob", reflecting their general economic status as middle and higher middle classes.

fiscal policy during 1970s, was perhaps still a fresh memory. Second, governments of the time regarded turning the fiscal budget into balance and surplus a political achievement. Third, and perhaps the most important, reason was that the foundation of budgetary process that was put in place since early 1960s prevented systemic imprudent fiscal spending¹⁰

One interesting thing worth nothing in this period is the shift in infrastructure buildup policy. Unlike in the 1960s when the governments were mainly and entirely responsible for providing basic infrastructure (road, irrigation) to the economy, the policy in 1980s and 1990s was to give private companies concessions to build, and sometimes operate, these infrastructures. Telecommunications and expressways stood out as good examples of such policy. In principle, the positive side of this policy is the reduced burden on public spending, increased efficiency, and more timely constructions. Not all of these potentials were realized. The negotiations between public personals and private companies often resulted in the marriage between the worst of both worlds, namely, the inefficiency and delays of the public sector and the greed of the private sector. At any rate, the process has created fortunes for some of the private entrepreneurs.

While financial prudence in the public sector was evident, it was missing in private sector. Speculation in real estate was taking place at an alarming rate, beginning at around 1988 and ended possibly at 1991. The same phenomenon was observed in the stock market, where both domestic and foreign investors rushed in without proper analysis of risks involved. The overoptimistic views arising from the double-digit growth rates and the rapidly expanding investment opportunities eventually pushed up the SET index to sour more than twelve-fold between 1985 and 1993, when the index topped at 1,682. The volume rose by more than a hundred-fold during the same period. Although the bubble in the stock market lasted longer than that in the real estate market, it finally softened rapidly since 1994.

From the supply-side growth accounting, the major source of growth during this period was clearly from the accumulation of capital stocks (see Figure1), accounting for almost 80

¹⁰ World Bank (2000) mentioned this fiscal inertia to be an obstacle to the use of stimulating fiscal policy after the 1997 crisis.

percent of the contribution to growth during 1991-1995. There are however considerable differences of growth accounting between 1986-1990 and 1990-1995. The rapid capital accumulation of the earlier time of this sub-period was also accompanied by an efficient use of the accumulated capital. The contribution of TFP growth was admirable at 31.3 percent¹¹. In contrast, during the 1990-1995 the capital, as well as other factors of production, were put to used so inefficiently by the speculation, suppressing the TFP growth, adjusted for changes in human capital, to a mere 0.4 percent.

IV) 1997-2000: Structural Crisis

The crisis of 1997 has been analyzed extensively in various dimensions in the last few years. In term of the origin or the causes of the crisis, the following factors have been mentioned:

- reduced competitiveness, most obviously shown by the almost frozen export growths in 1996,
- the maturity and currency mismatches of the external debts,
- the failure of the Thai monetary authorities to review and adjust its exchange policy in a timely fashion, including the overoptimistic view they took when assessing the probability of successfully counter-attacking the speculative attacks on Thai baht during the first half of 1997,
- the lax and inefficient supervision of financial institutions, resulting in non-transparent credit operations of the latter.
- What happened to economic growth after the crisis broke were more or less the results of the responses to the crisis by the government itself. The very tight monetary and fiscal policy stance, guided by the IMF, immediately adopted has shrunk the economy to the point that, together with the ballooning debt burdens

¹¹ A part of this TFP growth could come from higher yield on land used for agriculture. See Section 4 for more discussion.

from the rapid devaluation of baht, the quality of most private companies' balance sheets deteriorated quickly and severely. This problem is reflected most notably by the figures of the non-performing loans (NPLs) appearing on the asset side of the commercial banks' financial balance sheets.

The subsequent lax fiscal policy, resulting from decreased revenue projection rather than deliberate public spending, was only put in place in November 1998, more than one year after the crisis began. This arguably helped the moderate output growth in 1999 and 2000.

If one were to perform growth accounting after the crisis, it would be found that the drops of GDP in 1997 and 1998 were primarily corresponded with lowered uses of capital stock (capital utilization rates), and to a lesser extent the lowered uses of labor input (unemployment and underemployment). From demand side, the shrinking investment demand was the primary downward force toward recession of 1997-1998.

The recovery in 1999 and 2000 has been on a shaky basis. The strong export growths (especially in 2000), has worked its marvel among the backdrop of resumed stability in exchange market and financial market. The situation in 2001 is considerably worse than 2000. Growth has almost stagnated and unemployment shows a rising trend again. Apart from the rapidly rising unfavorable external development, the internal obstacles to higher growth was most likely the malfunctioning of financial market. Banks have been, and still are, reluctant to lend to for the fear of not getting back repayments due mainly to the borrowers' under-capitalized balance sheet and also to the still gloomy macroeconomic outlooks. Some big firms bypassed the banks by issuing their own debt papers.

V) 2001-2005: Recovery to Normal

Since around 2001, Thai economy has shown a clear sign of steadily returning to its normal growth performance. There are many factors contributing to this healthy recovery. The strong performance of the world economy, which recovered from IT bust in 2001, has significantly helped Thailand. Productions in various sectors resumed, especially those related to

exports. Financial institutions have also started lending again, in spite of some debt hangovers and excess liquidity.

1.3 Socio-Economic-Politics Explanation of High Growth

While the discussions of factors explaining growth in each sub-period have implication as to why such high growth take place in this country, one can also draw a more general explanations relevant to Thailand's fifty year growth experiences. The following factors are proposed to be responsible for the past success¹².

Openness. The openness of Thai economy dates back to very early days. In the early history, the international trades were limited to the hands of the royals and the government officials. But the general public has participated in trades very actively as early as around 200 years ago. Thailand certainly benefits from its location advantage since it locates on many major international trade paths, as well as its long borders, both land and sea, with many neighboring countries. The rulers, be they the monarchs or the subsequent democratic governments, always encourage international trades partly because of the taxes income generated from, or related to, trades.

Why trades are associated mainly with factor accumulation but not the improvement in productivity needs further explanation. Until recently, the international trades of Thailand mostly involve exploitation of natural resources, which are quite abundant when compared to many countries in the region. Simply commercializing these natural resources with minimal processing, all parties involved (the traders, the domestic middlemen, the local producers, and the governments) could make handsome profits without the need to venture into uncertain investments aimed at increasing productivity.

¹² Most of these explanations are taken from Sussangkarn (1992).

Stability

As demonstrated in the discussions of the growth explanation, stability plays a very important role in promoting growth. Despite some interruptions, Thailand has enjoyed a reasonable degree of macroeconomic stability in many critical aspects during the most part of the past five decades, namely, price stability, exchange rate stability, and budget and current account stability. The economic stability can be attributed to sound macroeconomic management in both fiscal and monetary policies. When faced with economic difficulties that called for extraordinary policy prudence, Thai officials could normally adopt and comply with the strenuously standards and practices. One interesting aspect of Thai economy is its ability, at least until very recently, to more or less shield macroeconomic management from political interventions. Politicians tended to be passive when it comes to managing board macroeconomic policies, letting the jobs to be in the hands of technocrats. Also, many governments were weak, and primarily played the role of compromising interest of many groups, leading to peaceful continuation of economic development.

The stability in economic climate gives the investors strong incentive to accumulate capitals, by reducing risk premia they would have to pay otherwise. Moreover, the continuation of development strategy over the past several decades ensures the investors of the direction Thailand is moving toward, making the decision to invest easier and less costly. In fact, as Sussangkarn (1992) points out, the development path has been so continuous that some critics voice their concern over how difficult it is to change the course of development.

Human Quality

By no mean that Thailand can be on par with some other countries like Japan, South Korea, Taiwan and Singapore in term of success in developing human capital over the past few decades. However, there are some distinct features of Thai human quality that can explain the accumulation process. These features include the followings.

Good Basic Education. Thailand is among the countries in the region with the highest literacy rate. The basic education seems to be helpful in traditional agriculture, and is also instrument in the early stage of industrial development. Another quality of

Thai workers is their ability to adapt and learn new basic skills, which make them quite attractive to potential investors.

Highly Educated Elites. On the other end, Thailand also possesses a handful of highly educated elites, who are trained in good universities or get educated abroad. If educated abroad, these people usually came back and serve the country as government officials, technocrats, entrepreneurs, and academics.

Female Labor. Thailand has very high female labor force participation rate. For example, the female labor force participation in 1987 was as high as 80 percent which, as will be seen later in the section on regional comparison, is among the highest in the region. These female workers are generally preferred employees of labor-intensive export industry.

Entrepreneurs. Thais in general have risk-taking characteristic, which is a prerequisite for being entrepreneurs. Thai entrepreneurs range from the farmers themselves, who take risks with every crops they plants, and those who engages in informal trades and services industries. This explains why social mobility in Thai society is quite high, and many families have been able to escape poverty in the past decades.

Friendship

Thais are generally known to be friendly people. More importantly perhaps, is the fact that Thai people are tolerant, compromising, and prefer to avoid escalated conflicts whenever possible. Very few have rigid dogmatic beliefs that can not be compromised. Obviously, this kind of attitude is conducive to assets accumulation because the fears for disruption are minimized. Moreover, Thailand also has a long history of friendship with foreigners, which is true at all classes of Thai society. There is no hard feeling of being colonized, since Thailand does not have that experience. Ordinary Thais also welcome foreigners and usually treat them equally.

2. Pro-Poorness of Growth

In this section, we discuss how economic growth in Thailand has helped the poverty reduction. We first present the figures of poverty incidences and income inequality and then followed by the estimates of the pro-poorness of growth.

2.1 Poverty and Inequality

The high economic growth over 6 percent per annum on average of the past five decades undoubtedly raised the well-being of the Thai population. This can be very clearly demonstrated by the substantial decline of the income poverty incidence (Table 7), which reached its lowest level of 14.8% (head-count ratio) in 1996 from 45% in early 1960s, before increasing lightly to 21% in the year 2000 due to the economic crisis. The latest poverty incidence in 2002 is 14.9% in the year 2002, the same as the pre-crisis level, indicating the rapid recovery in only two years.

Table 7 Poverty Incidence for 1986-2002, Consumption Approach

Region	Area	1986	1988	1990	1992	1994	1996	1998	1999	2000	2001	2002
BMR	Municipal	15.0	11.7	11.9	4.4	4.1	1.2	1.2	2.2	1.7	1.7	2.2
	Total	15.0	11.7	11.9	4.4	4.1	1.2	1.2	2.2	1.7	1.7	2.2
Central	Municipal	31.0	29.9	22.3	10.8	9.0	5.4	4.7	7.4	7.0	4.9	5.0
	Non-Municipal	36.0	36.5	27.8	21.8	12.2	6.5	9.4	10.5	10.1	8.0	9.0
	Total	34.6	34.5	26.1	18.3	11.2	6.1	7.8	9.4	9.0	6.9	7.6
North	Municipal	35.1	39.2	27.8	19.1	19.1	13.4	14.1	12.1	16.1	18.3	13.5
	Non-Municipal	48.7	50.1	37.1	36.3	21.2	19.0	17.1	20.7	24.9	21.1	22.1
	Total	46.0	47.9	35.2	32.7	20.8	17.8	16.5	19.0	23.1	20.5	20.3
Northeast	Municipal	37.4	32.4	31.1	24.6	15.4	15.0	17.2	18.7	20.1	18.8	11.9
	Non-Municipal	66.5	60.6	48.7	44.1	30.4	26.3	33.3	39.0	38.4	36.7	25.6
	Total	62.7	56.7	46.1	41.1	28.1	24.5	30.7	35.7	35.3	33.4	23.1
South	Municipal	16.7	17.6	18.6	11.8	10.6	7.1	6.7	9.4	5.7	7.2	4.4
	Non-Municipal	42.6	36.7	31.7	28.7	19.8	11.2	16.1	17.4	19.9	15.3	11.2
	Total	37.5	32.9	29.0	25.2	17.8	10.3	14.0	15.6	16.6	13.3	9.6
Whole Kingdom	Municipal	25.3	23.7	20.5	12.1	9.9	6.8	7.1	8.5	8.6	8.5	6.4
	Non-Municipal	52.6	49.7	39.2	35.3	22.9	18.2	22.0	25.6	26.5	23.6	18.9
	Total	44.9	42.2	33.7	28.4	19.0	14.8	17.5	20.4	21.0	18.8	14.9

Source: Jitsuchon and Plangraphan (2004).

Much less impressive is the distributional aspects of the past growth experience. With only few interruptions, the income inequality in Thailand has been worsening overtime since the 1960s. The promotion of non-agricultural manufacturing industries (most notably through tax incentives) has widened the gap of well-being of Thai population.

Table 8 below shows the income share by household quintile between 1986-2002. It clearly shows that the income disparity in Thailand has not improved at all. Income share of the richest quintile was about 14 times of the poorest quintile.

Table 8 Household Income Share by Quintile, 1986-2002

	1986	1988	1990	1992	1994	1996	1998	2000	2002
Quintile 1	4.53	4.57	4.31	3.98	4.04	4.12	4.24	3.88	4.17
Quintile 2	7.89	8.03	7.54	7.06	7.33	7.47	7.67	7.18	7.63
Quintile 3	12.36	12.35	11.69	11.08	11.68	11.76	11.93	11.42	11.96
Quintile 4	20.37	20.57	19.46	18.78	19.72	19.93	19.84	19.89	20.05
Quintile 5	54.84	54.47	57.00	59.09	57.23	56.73	56.31	57.63	56.19
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Socio-Economic Surveys, National Statistical Office, Thailand

Almost all inequality measures confirm the worsening trend of income distribution problem, as shown in Table 9. For example, the Gini index rose from 0.496 in 1986 to 0.510 in 2002.

Table 9 Various Indicators of Income Distribution

Year	GINI	VL	GE(0)	GE(1)	GE(2)	AE2	AE3
1986	0.4958	0.7311	0.4226	0.4949	1.1775	0.5271	0.6445
1988	0.4886	0.7367	0.4088	0.4459	0.7816	0.5220	0.6359
1990	0.5146	0.7743	0.4564	0.5459	1.5744	0.5485	0.6560
1992	0.5363	0.8174	0.4998	0.5941	1.8002	0.5780	0.6835
1994	0.5209	0.8056	0.4722	0.5499	1.4478	0.5652	0.6772
1996	0.5158	0.7839	0.4624	0.5335	1.2768	0.5592	0.6690
1998	0.5090	0.8546	0.4477	0.5084	1.0893	0.5484	0.6593
2000	0.5249	0.7974	0.4827	0.5315	1.0851	0.5790	0.6896
2002	0.5103	0.8912	0.4525	0.5189	1.2154	0.5541	0.6670

Note: GINI: Gini index, VL: variance of log-income
 GE(0): Generalised Entropy degree 0 or Shorrocks' index degree 0
 GE(1): Generalised Entropy degree 1 or Theil's index
 GE(2): Generalised Entropy degree 2
 AE2: Atkinson's index degree 2 (inequality aversion parameter = 2)
 AE3: Atkinson's index degree 3 (inequality aversion parameter = 3)

Source: Calculated from Socio-Economic Surveys, National Statistical Office, Thailand

2.2 Pro-Poor Growth Estimates

Here, we apply the method developed in Kakwani et.al (2004) in estimating the rate of pro-poor growth for Thailand.

Following Kakwani et.al (2004), for any poverty indicator θ ,

$$\theta = \theta(z, \mu, L(p))$$

we may estimate the poverty equivalent growth rate by:

$$\hat{\gamma}^* = (\hat{\delta} / \eta) \hat{\gamma},$$

where $\hat{\gamma}$ is the growth rate of mean welfare, defined as

$$\hat{\gamma} = Ln(\mu_2) - Ln(\mu_1)$$

and $\hat{\delta}$ is total poverty elasticity,

$$\hat{\delta} = (Ln[\theta(z, \mu_2, L_2(p))] - Ln[\theta(z, \mu_1, L_1(p))]) / \hat{\gamma}$$

and $\hat{\eta}$ the estimate of growth elasticity of poverty

$$\hat{\eta} = \frac{1}{2} [Ln(\theta(z, \mu_2, L_1(p))) - Ln(\theta(z, \mu_1, L_1(p))) + Ln(\theta(z, \mu_2, L_2(p))) - Ln(\theta(z, \mu_1, L_2(p)))] / \hat{\gamma}$$

Similar to Kakwani et.al (2004), we use the ratio of per capita consumption expenditure to per capital poverty line as the welfare measure for the estimation of pro-poor growth. Table 10 presents the welfare level, the head-count ratios, the poverty gap, the poverty severity, and Watts index for the year 1986-2002. The welfare level dropped during 1996-2000 as the result of economic crisis, during which all the poverty measure show the increased values.

Table 10 Poverty Measures, 1986-2002

Year	Welfare Level	Head-Count	Poverty Gap	Poverty Severity	Watts Index
1986	139.1	44.7	13.1	5.3	17.2
1988	148.6	41.9	11.3	4.3	14.5
1990	168.9	33.7	8.1	2.8	10.1
1992	185.9	28.4	6.6	2.2	8.2
1994	207.6	19.0	3.9	1.2	4.8
1996	223.1	14.8	2.9	0.9	3.4
1998	204.4	17.5	3.3	1.0	4.0
1999	203.1	20.3	4.3	1.3	5.2
2000	199.0	21.0	4.2	1.3	5.1
2001	204.6	18.8	3.7	1.1	4.5
2002	225.0	13.4	2.4	0.7	2.9

Source: Author's calculation.

Table 11 gives the estimates of the poverty equivalent growth rates (PEGR) during 1986-2002. Growth is said to be pro-poor when the poverty equivalent growth rates are higher than the actual growth rates. With this criterion, we can see that the period during the economic boom (1986-1996), PEGR for the four indices were generally very close to the actual growth rates, meaning that both the poor and the non-poor were benefiting from growth more or less equally. However, when breaking into sub-period within this golden decade, we can see that not until the year 1992 that the poor began to catch up with the non-poor in the growth process. The growths in the onset of the economic boom (1986-1992) were mostly dominated by the non-poor.

The pro-poorness of growth during the economic crisis is interesting. During the first crisis year (1998, compared to 1996) the poor were not hit as hard as the non-poor were, likely because of the commodity price boom in 1998 prevented the poor, especially those in agricultural sector, from suffering too much from the economic crisis. However, one year later (1998-1999) when the impacts of the crisis were strongest, and after the commodity prices leveled off, the poor were suffering more. The recovery time, starting from 2000, is a mixed picture as the PEGR of poverty gap, severity, and Watts, show the pro-poorness, but that of the head-count ratio is only pro-poor for 1999-2001. The overall crisis/recovery period (1996-2000) is however one of the pro-poor growth.

The PEGR for the entire period of 1986-2002 are roughly the same as the actual growth rates, indicating a somewhat reassuring pro-poor performance of the overall growth process of Thailand.

Table 11 Poverty Equivalent Growth Rates, 1986-2002

Year	Actual Growth	Poverty Equivalent Growth by Poverty Measures				Pro-Poorness			
		Head-Count	Poverty Gap	Poverty Severity	Watts Index	Head-Count	Poverty Gap	Poverty Severity	Watts Index
2001-2002	9.5	9.2	9.9	9.9	9.8		*	*	*
2000-2001	2.8	3.2	3.4	3.1	3.3	*	*	*	*
1999-2000	-2.1	-1.4	0.3	0.6	0.3	*	*	*	*
1998-1999	-0.7	-4.8	-6.5	-6.6	-6.4				
1996-1998	-4.4	-2.5	-1.9	-1.6	-1.8	*	*	*	*
1994-1996	3.6	4.0	3.9	3.9	3.9	*	*	*	*
1992-1994	5.5	7.4	7.2	7.1	7.2	*	*	*	*
1990-1992	4.8	3.7	3.1	3.1	3.1				
1988-1990	6.4	5.4	5.7	5.8	5.7				
1986-1988	3.3	1.8	2.9	3.3	3.1			*	
1986-1996	4.7	4.6	4.7	4.8	4.7			*	*
1996-2000	-2.9	-2.7	-2.4	-2.3	-2.4	*	*	*	*
2000-2002	6.1	6.5	6.6	6.5	6.5	*	*	*	*
1986-2002	3.0	3.1	3.2	3.2	3.2	*	*	*	*

Note: The figures here are not the same as those estimates by Kakwani et. al. (2004) for Thailand. This is because the poverty lines used here are generally higher.

Source: Author's calculation.

2.3 Poverty Elasticity with Respect to Income Components and Poverty Reform Index

Knowing whether any growth episode is pro-poor does not immediately lead to any policy recommendation. Here we present the estimates of poverty elasticity with respect to income components and the estimates of poverty reform index, following Kakwani (2001).

Poverty elasticity with respect to income components

The i^{th} income component elasticity for FGT class of poverty indicators is defined as

$$\eta_{\alpha i} = \frac{\alpha}{z P_{\alpha 0}} \int_0^z \left(\frac{z-x}{z} \right)^{\alpha-1} g_i(x) f(x) dx$$

When $\alpha \neq 0$.

Poverty elasticity tells how many percentage of poverty reduction would be gained if the i^{th} income component increases by one percent.

Poverty reform index (PRI)

Poverty reform index for i^{th} income component is defined as

$$\phi_i = \frac{\eta_{\theta i} \mu}{\eta_{\theta} \mu_i}$$

Where

$$\sum_{i=1}^m \eta_{\theta i} = \eta_{\theta}$$

The PRI has the property of summing up to unity,

$$\sum_i s_i \phi_i = 1$$

S_i is the proportion of i^{th} income in the total income.

If any income component has the PRI greater than one, then that income component has stronger impact in reducing poverty, since it helps reducing inequality in the total income. The PRI can thus help guide the policy by determining which income components should be promoted and which should not be.

Table 12 and 13 present the poverty elasticity and poverty reform index for head-count ratio and poverty gap, for the year 2000. Poverty elasticity (head-count ratio) for the whole country is -1.206 , meaning that for every 1 percent increase in average per capita income, poverty

would reduce by 1.206 percent. Non-municipal (rural) areas contribute more to the poverty elasticity than the municipal (urban) areas, simply because most poor persons lived in rural areas. A surprising result is the high value of poverty elasticity of in-kind income in the rural area (-0.627), indicating its importance in helping the poor escape poverty.

Poverty reform index is also higher in rural area. Non-farm profits are most crucial for poverty reduction in rural areas, while wage and salary and farm profits are most crucial in the urban areas.

**Table 12 Poverty Elasticity and Poverty Reform Index (Head-Count Ratio),
by Sources of Income**

Sources of Income	Poverty Elasticity			Poverty Reform Index		
	Non-Municipal	Municipal	Total	Non-Municipal	Municipal	Total
Wage and Salary	-0.216	-0.016	-0.232	0.978	0.028	0.885
Non-Farm Profits	-0.035	-0.007	-0.042	1.049	0.023	0.635
Farm Profits	-0.202	-0.003	-0.205	1.016	0.027	1.087
Pension	-0.000	-0.000	-0.000	0.374	0.006	0.273
Government Assistance	-0.083	-0.002	-0.085	1.024	0.019	0.991
Agriculture Rent	-0.001	-0.000	-0.001	0.816	0.019	0.845
Non-Agricultural Rent	-0.000	-0.000	-0.000		0.011	0.091
Interest and Dividend	-0.001	-0.000	-0.001	1.022	0.018	0.985
In-kind Income	-0.627	-0.013	-0.639	1.027	0.024	1.065
Total Income	-1.165	-0.041	-1.206	1.016	0.025	1.000

Source: Calculated from 2000 Socio-Economic Surveys, National Statistical Office, Thailand

**Table 13 Poverty Elasticity and Poverty Reform Index (Poverty Severity),
by Sources of Income**

Sources of Income	Poverty Elasticity			Poverty Reform Index		
	Non-Municipal	Municipal	Total	Non-Municipal	Municipal	Total
Wage and Salary	-0.415	-0.046	-0.460	1.019	0.043	0.953
Non-Farm Profits	-0.061	-0.019	-0.081	1.005	0.034	0.665
Farm Profits	-0.371	-0.006	-0.377	1.012	0.029	1.084
Pension	-0.000	-0.000	-0.000	0.358	0.011	0.278
Government Assistance	-0.148	-0.006	-0.154	0.995	0.027	0.975
Agriculture Rent	-0.001	-0.000	-0.001	0.548	0.015	0.570
Non-Agricultural Rent	-0.000	-0.000	-0.000		0.009	0.074
Interest and Dividend	-0.002	-0.000	-0.002	0.918	0.024	0.897
In-kind Income	-1.113	-0.030	-1.143	0.993	0.031	1.036
Total Income	-2.110	-0.107	-2.217	1.001	0.035	1.000

Source: Calculated from 2000 Socio-Economic Surveys, National Statistical Office, Thailand

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