Production Structures, Labour Markets and Human Capital Investments: Issues of Balance for Thailand

Thailand Development Research Institute Foundation

PRODUCTION STRUCTURES, LABOUR MARKETS AND

HUMAN CAPITAL INVESTMENTS:'

ISSUES OF BALANCE FOR THAILAND

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ABSTRACT

Current dynamism of Thailand's manufactured export is leading to a rapid change in the structure of exports and production. At the same time, mainly because of the decline of traditional agriculture and the concentration of manufacturing around the capital region, the problem of income disparities, which had been worsening over the last decade, is likely to get worse. This paper describes the recent changes in the Thai economy, and the various imbalances that exist. It examines the imbalance between the structure of production and of employment, and the related locational imbalance between production and population. The paper also looks at the apparent imbalance in the educational enrollment pattern in Thailand when compared to other Asian countries. An analysis is given to show that the enrollment pattern can be explained when account is taken of the structure of employment and the way the labour market functions. Finally, the paper discusses some key issues for the future.

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1. INTRODUCTION

With current rapid expansion of Thailand's manufactured exports, and the
general decline of traditional agriculture through out the 1980's, some fundamental
changes in the pattern of economic growth are underway. At the same time, there are
major imbalances that currently exist between the employment and population
structures, and the production structure. These have also led to apparent
imbalances in the structure of education in Thailand when compared with other
countries. This paper will examine recent changes in the growth pattern, and the
various imbalances. This will highlight issues that have to be solved for the
future.

Section 2 describes the changes in the pattern of economic growth. In
section 3, the imbalance between the structure of employment and of production is
examined. The dis-proportionate share of employment in agriculture compared to the
share of agriculture in value-added has led to large disparities in incomes between
agriculture and non-agriculture, and the gap has been widening over the last decade.
Section 4 looks at the imbalance between the location of population and the location
of production. This has led to large and widening disparities of incomes between
regions. The need for the future is to achieve better balance of population and
employment with production.

Section 5 examines the educational enrollment pattern in Thailand in
relation to the structure of the labour market. Compared to other Asian countries,
Thailand seems to have relatively low enrollment at the secondary levels, and rather
high enrollment in higher eduction. This pattern is explained with reference to
what is known about the labour market and the rewards from education in Thailand.
It is shown that the apparent imbalance is related to the imbalance already

indicated on the employment side. Taking various economic structures into account, the current educational pattern is easy to understand. However, with expected changes in the future to correct the imbalances discussed in sections 3 and 4, the educational structure needs to develop in conformity with the other changes. Finally, section 6 concludes.

2. EMERGING STRUCTURAL CHANGE AND TRANSITION TO NIC STATUS[1]

A prominent feature of Thailand's recent economic performance has been the rapid growth of manufactured exports. 1985 was a significant year for manufactured exports. It was the first year in which manufactured exports surpassed agricultural exports in value. Since that year, the boom in manufactured exports has been phenomenal. Within two years, from 1984 to 1986, the ratio of manufactured exports to agricultural exports increased from .97 to 1.63. With continued boom this year, the ratio will rise to over 2.

The rapid growth of manufactured exports has more than compensated for the decline of Thailand's traditional major exports, i.e. the 5 major crops consisting of Rice, Rubber, Maize, Sugarcane and Tapioca. Table 2.1 shows exports in millions of US dollars by major groupings; also given are the shares in total export, the yearly growth rates, and the average growth between 1980 and 1986. The first thing that can be seen is the rapid decline in the share of the 5 major crops in total exports, particularly over the last two years. In 1981, the share of the major crops were 46.8%. In 1986, this was 30.7%. The growth rate of major crops' exports has been fluctuating almost yearly. This depends on commodity prices in the particular year, and also on production. As a result, between 1980 and 1986, the average growth of export of the 5 major crops have shown a slight downward trend.

While other crops have fared slightly better than the major crops, the trend of their exports has been basically stagnant, only registering an average growth of 1.7% per annum between 1980 and 1986. Another group with a downward trend (this time a rather sharp downward trend) is the mining group. Again this reflects the downward trend in world prices. In fact, all the groups that have performed poorly are the group of primary commodities, reflecting an adverse demand-supply situation in the world market for primary commodities generally.

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1. This section is mostly from sections 2.1 and 2.2 in TDRI (1987).

TABLE 2.1
TOTAL VALUE OF EXPORTS
(MILLIONS OF US DOLLARS)

CATEGORY	1980	1981	1982	1983	1984	1985	1986	
5 MAJOR CROPS	2778	3272	3167	2696	2993	2389	2696	
OTHER CROPS	247	286	348	275	275	286	274	
MINING	599	448	359	246	247	226	128	
LIVESTOCK & FISHERY	281	331	359	356	372	383	595	
CANNED FOODS EXC. FISH	117	139	150	153	211	199	213	
CANNED FISH	29	50	72	91	156	191	322	
CLOTHING	507	629	676	707	910	966	1323	
GEMS AND JEWELRY	183	229	227	314	311	313	499	
OTHER INDUSTRIES	579	537	500	504	666	644	839	
OTHERS	1164	1070	1067	1007	1253	1506	1881	
TOTAL	6489	6995	6929	6354	7397	7106	8775	

SHARE	1980	1981	1982	1983	1984	1985	1986	
5 MAJOR CROPS	42.8	46.8	45.7	42.4	40.5	33.6	30.7	
OTHER CROPS	3.8	4.1	5.0	4.3	3.7	4.0	3.1	
MINING	9.2	6.4	5.2	3.9	3.3	3.2	1.5	
LIVESTOCK & FISHERY	4.3	4.7	5.2	5.6	5.0	5.4	6.8	
CANNED FOODS EXC. FISH	1.8	2.0	2.2	2.4	2.9	2.8	2.4	
CANNED FISH	0.5	0.7	1.0	1.4	2.1	2.7	3.7	
CLOTHING	7.8	9.0	9.8	11.1	12.3	13.6	15.1	
GEMS AND JEWELRY	2.8	3.3	3.3	4.9	4.2	4.4	5.7	
OTHER INDUSTRIES	8.9	7.7	7.2	7.9	9.0	9.1	9.6	
OTHERS	17.9	15.3	15.4	15.9	16.9	21.2	21.4	
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

GROWTH	1980	1981	1982	1983	1984	1985	1986	AV.GR 80-86
5 MAJOR CROPS	17.7	17.8	-3.2	-14.9	11.0	-20.2	12.9	-0.5
OTHER CROPS	18.1	15.8	21.4	-20.9	-0.1	4.1	-4.1	1.7
MINING	21.2	-25.3	-19.7	-31.4	0.4	-8.6	-43.2	-22.6
LIVESTOCK & FISHERY	-5.7	17.7	8.5	-0.9	4.6	2.9	55.2	13.3
CANNED FOODS EXC. FISH	15.5	18.3	8.1	1.8	37.8	-5.5	6.7	10.4
CANNED FISH	60.7	72.6	42.5	27.1	70.0	22.6	68.6	49.1
CLOTHING	8.9	24.1	7.5	4.6	28.6	6.2	37.0	17.3
GEMS AND JEWELRY	36.7	24.7	-0.6	38.0	-0.8	0.4	59.6	18.1
OTHER INDUSTRIES	57.6	-7.1	-7.0	0.9	32.0	-3.3	30.2	6.4
OTHERS	39.3	-8.1	-0.3	-5.6	24.4	20.2	25.0	8.3
TOTAL	22.7	7.8	-0.9	-8.3	16.4	-3.9	23.5	5.2

Source: Calculated from Bank of Thailand Monthly Bulletin
(various issues), table 35.

All other groups (except for the "others") registered an average growth of 10% per annum or more between 1980 and 1986. The fastest growth has been registered by "canned fish" (mostly tuna), and its share in total export has increased rapidly from just 0.5% in 1980 to around 3.7% in 1986. An important group in terms of both its growth performance, and because it share is already sizable, is the "clothing" group, including textiles and garments. This group already has a 15.1% share of total export, and registered an average growth of 17.3% between 1980 and 1986. A hypothetical calculation shows that if "clothing" continues with this average growth over the next few years, and if the "major crops" also continue along its past trend, then in 1991, the last year of the Sixth Five-year Plan, export of clothing would surpass those of the 5 major export crops combined. In fact, it may happen much sooner than that, as exports of textiles have grown by over 45% over the first 9 months of 1987 compared to the same period in 1986.[2]

The rapid increase in manufactured exports has been wide-spread. It is not limited to just a few large product groups. Currently small export items are also expanding rapidly, and following the recent trends, their importance will become more visible in a few years. One group which is now very prominent in the export picture is the "gems and jewelry" group. Starting from a base of 2.8% share of total export in 1980, the share increased rapidly to 5.7% in 1986. This year this group is likely to register a growth rate of over 60%. Shortly, its total export value is likely to pass the one billion dollar mark. Another group which will become more important over the next few years consists of toys and sporting goods. These have registered an average rate of growth of 53.8% per annum between 1982 and 1985. The growth rate between 1985 and 1986 was similar. While the current export value of this group is only 30 million dollars, the impact of an accumulation in a growth rate of this size should not be underestimated. For example, if its rate of growth continues at the 50% level yearly, then in just over 8 years, its export value will surpass the one billion dollar mark.

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2. From Bank of Thailand "Economic Situation in First 9 Months of 1987".

The recent excellent manufacturing export performance indicates that Thailand has been able to push strongly into the international export market. Thailand is also benefiting from the transition of the other Asian NIC's towards commodities other than the traditional labour intensive manufactured exports, such as textiles. The Asian NIC's such as Korea and Taiwan have probably reached a point where they are no longer competitive in most of these items. Korea is turning towards more capital and technology intensive exports such as motor cars, and Taiwan is currently dominating the world with "compatible" desktop computers. That Thailand has been able to fill in the void left by these other countries is a good sign. We seem to have been able to succeed in both the production of better quality products at competitive prices, and also in getting the foreign consumers to think about Thailand as a source for a wide range of manufactured products.

Of major importance also has been the exchange rate policy that has been followed in recent years. The baht/dollar rate has changed relatively little since the end of 1985, with a slight appreciation of the baht relative to the dollar of about 3.25%. However, during that time the dollar has depreciated against the yen by 32.3%, the Deutsche mark by 30.9%, and even against the pound sterling by 14.15%.[3] Effectively, the baht has depreciated against the currency of our average trading partners significantly.

Given the boom in manufactured exports, many are mentioning Thailand as the leader of the second wave of the NIC's. On this point, a comparison between Korea and Thailand is illuminating. Table 2.2 gives selected data for Thailand and for South Korea from 1950 till 1984. Included are data on population, population growth rate, GDP in local currency, exchange rate, per capita GDP, average merchandise export growth, and the share of employment in agriculture.

This series shows up some very interesting differences in the historical development patterns of the two countries. The most noteworthy difference is in the trends of the exchange rates. The rate of exchange between the bath and the US

3.   This is as of the middle of November 1987. By the end of December 1987, the US dollar has further depreciated against other major currencies.

dollar had hardly changed in nearly 35 years! Of course if there was data for 1985,
one would see the baht/dollar rate rising to 27.2 baht per US dollar. However, this
is insignificant compared to what has happened to the won over the last 30 years or
so. Ignoring the period between 1950 and 1955, during which the Korean war took
place, the won depreciated against the dollar by 1,512% between 1955 and 1984, or an
average of 10% per year. Even since 1965, the won had depreciated against the
dollar by an average 6% per year.

However, the exchange rate data cannot be interpreted without reference to
the differential rates of inflation that have taken place in the two countries, and
relative to their major trading partners. Table 2.3 shows adjusted series of real
exchange rate indices for the two countries since 1960 to 1985. To adjust for
inflation, we first construct an index for each, giving the price index for each
country relative to that of the US.[4] We then deflate the nominal exchange rate of
each country with respect to the US dollar by the series, and calculate an index of
the real exchange rate with respect to the US dollar since 1960. If the value of
the index increases then this means that the currency is depreciating against the US
dollar, and vice versa, if the index decreases then the currency is appreciating
against the dollar.

Looking at the series, we can see that the Thai and Korean real exchange
rate took a different path in the first half of the 60's. The won depreciated
against the dollar by over 100% between 1960 and 1965, while the baht appreciated
against the dollar in real terms between those two dates. The massive depreciation
of the won against the dollar between 1960 and 1965 had obviously been an important
source of the phenomenal growth of Korean exports, which grew by over 38% per annum
in dollar value between 1960 and 1975, and by 28% per annum between 1975 and 1980.

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4.   Using the inflation rate of the industrial countries as a group
rather than the US inflation rate would lead to a similar pattern.

TABLE 2.2
SELECTED DATA ON THAILAND AND SOUTH KOREA

THAILAND

YEAR	POPULATION ('000)	POP GROWTH RATE	GDP BIL.BAHT	EX.RATE (BAHT/$)	PER CAPITA GDP	AVG. EXPORT GROWTH (US$)	%EMPLOY IN AGRIC
1950	20620	n.a.	26.2	22.34	56.9	n.a.	n.a.
1955	23536	2.7%	38.1	21.64	74.8	n.a.	n.a.
1960	27039	2.8%	54	21.18	94.3	3.9%	84.0%
1965	31359	3.0%	84.3	20.80	129.2	8.5%	82.1%
1970	36431	3.0%	136.1	20.80	179.6	2.4%	80.0%
1975	41869	2.8%	298.8	20.38	350.2	26.0%	78.1%
1980	46950	2.3%	684.9	20.48	712.4	24.3%	70.8%
1984	50400	1.8%	991.56	23.64	832.3	3.3%	69.7%

KOREA

YEAR	POPULATION ('000)	POP GROWTH RATE	GDP BIL.WON	EX.RATE (WON/$)	PER CAPITA GDP	AVG. EXPORT GROWTH (US$)	%EMPLOY IN AGRIC
1950	20357	n.a.	2	2.50	49.1	n.a.	n.a.
1955	21467	1.1%	113	50.00	105.4	n.a.	n.a.
1960	25012	3.1%	243	63.75	152.5	12.9%	66.0%
1965	28705	2.8%	798	266.27	104.4	39.6%	58.3%
1970	32241	2.4%	2672	310.57	266.9	38.2%	50.0%
1975	35281	1.8%	9951	484.00	582.8	41.5%	41.9%
1980	38198	1.6%	35380	607.43	1524.8	28.0%	34.0%
1984	40580	1.5%	67126	805.98	2052.4	11.2%	29.7% *

Source: International Monetary Fund, Year Book of International
        Financial Statistics, 1986, for non-employment data.
        Employment data from IBRD World Tables, 3rd edition,
        volume 2;also from IBRD, "Korea: Development in a Global
        Context",a World Bank Country Study, 1983; and also from
        NSO Labour Force Surveys.
Note: * refers to 1983.

TABLE   2.3
EXCHANGE RATES ADJUSTED FOR
RELATIVE INFLATION DIFFERENCES

REAL EXCHANGE RATE INDEX
RELATIVE TO
US '

	KOREA	THAILAND
1960	100.0	100.0
1961	184.4	93.5
1962	181.9	90.4
1963	153.5	91.3
1964	197.0	93.2
1965	219.1	94.5
1966	204.3	93.5
1967	189.0	92.0
1968	181.1	94.5
1969	176.2	97.8
1970	172.3	104.2
1971	176.5	108.5
1972	184.3	106.7
1973	192.6	96.4
1974	172.6	83.9
1975	177.8	87.3
1976	162.4	88.9
1977	156.6	87.9
1977	146.5	87.3
1979	136.9	88.9
1980	149.1	84.0
1981	150.8	87.5
1982	160.1	93.1
1983	169.5	92.6
1984	179.7	98.5
1985	196.2	114.6

Source: Calculated from data in International Monetary
        Fund, Financial Statistics, 1986.

For Thailand, exports grew fairly slowly between 1960 and 1970. It was clear that the real appreciation of the baht against the dollar since 1960 had contributed to this. Then between 1970 and 1980, export growth picked up sharply, with an average growth of around 25% per annum between 1970 and 1980. This was partly because of increases in commodity prices in the 70's, partly because of the higher rate of inflation during the period due to the increase in oil prices, and also may have been due to the temporary real depreciation of the baht against the dollar between 1970 and 1971 due to lower inflation in Thailand compared to that in the US. Between 1980 and 1984, exports became sluggish again, due to the declining trend in commodity prices and the over-valued exchange rate at the time, even with the slight devaluation in 1981. A second devaluation at the end of 1984, and the policy since 1984 of staying very much with the dollar (as indicated above) seemed to have been the push necessary to get exports going again, and starting from last year, exports (particularly manufactured exports) had obviously responded.

In 1950, Thailand had a higher level of per capita GDP than South Korea. By 1960, per capita GDP in Korea was 62% higher than for Thailand. However, this is probably illusory, as the won was probably highly over-valued against the dollar at this time, with the hyper-inflation as a result of the Korean war. Between 1960 and 1965, the won depreciated against the dollar by 318%. The result was that GDP per capita in dollar terms became higher for Thailand again, with a level of 129.2 dollars for Thailand and 104.4 dollars for Korea. However, the massive real depreciation of the won against the dollar between 1960 and 1965 was decisive in pushing Korea on the path of accelerated export-led growth between 1960 and 1980. Within 10 years (from 1965), per capita GDP in Korea was 66% higher than in Thailand. Within 15 years (in 1980), the differential increased to 114%, and in 1984 the difference was 146.6%.

Currently, Thailand is probably at the stage that Korea was around 1975. The nominal per capita GDP in Korea at that time was 582.8 dollars which is lower than the current Thai level. But with the inflation that had taken place since 1975, the real per capita GDP in Korea in 1975 was slightly higher than the current Thai level. Population growth rate in Korea for 1975 was also similar to that in Thailand today. Export performance was also similar, if we take into account the

structure of exports. Although Korean exports were growing at around 40% per annum in dollar terms in 1975, 90% of its exports were from manufacturing. Currently in Thailand manufactured exports are also growing at around 35-40% per annum.[5]

The share of GDP from agriculture was slightly higher in Korea in 1975 compared to the current Thai situation, with the share of agriculture in GDP (at factor cost) for Korea of about 24% in 1975, compared to around 19% for Thailand in 1986. One major difference between the Korean situation in 1975 and the current Thai situation however lies in the structure of employment. Whereas in 1975, the share of agricultural employment in Korea was 42%, in Thailand the share was about 67% in 1986,[6] and this in spite of the fact that the share of agriculture in GDP was higher in Korea in 1975 compared to the level in Thailand in 1986.

It is this predominant influence of agriculture on the employment prospects of the current Thai labour force that makes any talk of Thailand reaching so called "NIC" status in the near future seems irrelevant for the majority of the population. At the very same time that manufactured exports were booming in 1986 and 1987, agriculture was going through a second very bad year in succession due to two bad droughts in a row. Even ignoring the droughts, the period since the early 1980's has been a dismal one for traditional agriculture in Thailand.

The decline of traditional agriculture in Thailand is reflected in the rapid decrease in the share of crops in GDP, See(table 2.4). In 1982, value-added at current factor cost from crops made up 18.3% of GDP, by 1986 this had fallen to 12.7%. Only 10 years ago in 1977 it was 22.1%.[7]

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5.   According to the IBRD World Debt table, (1985-6 edition), even the ratio of long-term external debt to GDP is similar. In 1975 Korea had a ratio of long-term external debt to GDP of 29.8%, whereas the ratio given for Thailand for 1984 was 26.1%. This latter ratio is however somewhat lower than the 32.4% estimated by TDRI for Thailand in 1984. (See TDRI (1986), table 2.5). However, whichever estimate is taken, the ratios are indeed similar.

6.   Based on preliminary data from NSO Labour Force Survey, July-September, 1986.

7.   Calculated from NESDB, National Income of Thailand, Old Series 1970-1984.

TABLE   2.4

GROSS NATIONAL PRODUCT AT CURRENT FACTOR COST BY INDUSTRIAL ORIGIN

	1982		1986	
	MILLIONS OF BAHT	% OF GDP	MILLIONS OF BAHT	% OF GDP
AGRICULTURE	188,147	24.7	182,311	18.7
CROPS	139,423	18.3	124,375	12.7
LIVESTOCK	23,596	3.1	26,653	2.7
FISHERIES	14,141	1.9	17,555	1.8
FORESTRY	10,987	1.4	13,728	1.4
NON AGRICULTURE	574,075	75.3	794,783	81.3
MINING AND QUARRYING	12,092	1.6	19,983	2.0
MANUFACTURING	133,123	17.5	178,311	18.2
CONSTRUCTION	41,611	5.5	54,668	5.6
ELECTRICITY AND WATER SUPPLY	14,682	1.9	28,128	2.9
TRANSPORT AND COMMUNICATION	62,451	8.2	101,096	10.3
WHOLESALE AND RETAIL TRADE	124,209	16.3	146,242	15.0
BANKING INSURANCE AND REAL ESTATE	56,476	7.4	83,748	8.6
OWNERSHIP OF DWELLINGS	8,703	1.1	13,002	1.3
PUBLIC ADMINISTRATION AND DEFENCE	37,349	4.9	49,139	5.0
SERVICES	83,379	10.9	120,466	12.3
GROSS DOMESTIC PRODUCT (GDP)	762,222	100.0	977,094	100.0

Source: Table 3 in NESDB, National Income of Thailand,
        1986 edition, Summary Tables.

        Within the crops group, the five major agricultural export items - rice,
rubber, maize, sugarcane and cassava - are predominant. They accounted for 63.7% of
the GDP from crops in 1986. In fact, these major crops together with fruits and
vegetables accounted for 85.5% of GDP from crops in 1986. The importance of the 5
major crops has remained at about the same level as in 1975. In 1975, these major
crops accounted for 63.9% of total value-added from crops, a figure almost exactly
the same as in 1986 (63.7%). Of course, within these 5 crops, there have been major
changes, with the share of paddy declining in general, and those for other crops
fluctuating depending on what happened to their prices in particular years.
Nevertheless, a prominent feature of the development over the past 10 years is that

these major crops as a group have accounted for a very stable share of GDP from all crops.

The fortunes of these major crops over a period of time are dependent on their price trends, and within a particular year, are also dependent on the vagaries of the weather. On the last point, 1987 will be the second consecutive bad year for the major crops in aggregate. In 1986, real GDP growth for agriculture was -0.7%, with the decline coming from crops, where the growth rate was -2.2%. Other sub-sectors showed good growth, such as 3.8% for Livestock and 6.4% for Fisheries.[8] The drought in 1987 is likely to cause a decline in real value-added in agriculture for the second year running. When compared with industrial performance and manufacturing exports, the difference is overwhelming.

The major source of the decline in traditional agriculture since the early 80's was the trend in commodity prices. Table 2.5 shows the recent trends in average export price per ton of the 5 major agricultural commodities; rice, rubber, maize, tapioca and sugar. The data are given for 1980 to 1986, and for the first 9 months of 1987. All of them showed a declining trend between 1980 and 1986. The average export price per ton of rice fell by around 8.12% per annum, rubber fell 3.62% per annum, maize 4.68%, tapioca .94% and sugar 13.48% per annum between 1980 and 1986. In 1987, partly due to the shortages created by the drought in 1986 and partly to increases in world demand for some commodities such as rubber, export prices for all major crops except for maize increased. However, even though prices have picked up in 1987, it can be seen that the prices of all major crops except for tapioca are still well below the levels in 1980. Tapioca is the major exception, where the nominal average export price in baht terms is at the highest level ever.[9]

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8. Preliminary data taken from Bank of Thailand, Monthly Bulletin, June 1987.

9. Export volumes for tapioca are however dependent on quotas from the EEC, the major importer of tapioca.

TABLE   2.5
EXPORT PRICE PER TON FOR MAJOR CROPS
(BAHT PER TON)

	RICE	RUBBER	MAIZE	TAPIOCA	SUGAR
1980	6,968	27,145	3,314	2,853	6,586
1981	8,697	22,962	3,243	2,625	8,557
1982	5,948	17,429	2,943	2,527	5,861
1983	5,798	21,235	3,192	2,961	4,124
1984	5,618	21,969	3,227	2,527	4,205
1985	5,545	19,663	2,768	2,112	3,623
1986	4,491	19,867	2,308	3,021	3,708
1987(9m)	4,683	22,133	2,298	3,316	4,344
GROWTH	-8.12	-3.62	-4.68	-0.94	-13.48
(80-86)					

Source: Bank of Thailand, Monthly Bulletin and "Economic
         Situation in First 9 months of 1987".
Note: Average growth 1980-1986 calculated by
         log regressions.

     The prospects for the major crops will depend a great deal on future price
trends. Here the picture is also fairly gloomy, with most forecasting agencies such
as the World Bank still expecting no major improvements in price trends.
Diversification towards currently minor crops is a possible answer, but significant
replacement of the 5 major crops may be difficult. Diversification has been talked
about for many years, but as we have seen, the share of the 5 major crops in the
value-added of all crops has been remarkably stable over the last 10 years or so.

     Looking at the future development of the Thai economy, it is clear that the
industrial sectors, and particularly manufacturing, will play a leading role.
Whether Thailand can sustain the very fast growth of manufactured exports achieved
over the last few years remains to be seen, particularly with the present
uncertainties regarding the world economy, but many see the recent export
performance as indicating that Thailand may being moving along the same path as that
taken earlier by the current Asian NIC's. However, an examination of the present
structure reveals a number of imbalances that raise pressing issues concerning the
spread of benefits of development. There are large imbalances between the structure
of employment and the structure of production, and between the locational structure

of population and of production. These lead to large income disparities, which unfortunately have been widening over the last decade, with indications of a worsening trend. These imbalances are discussed below.

3. PRODUCTION AND EMPLOYMENT IMBALANCE

The first imbalance that will be examined is that between the employment
structure and the production structure. The comparison between Thailand and South
Korea in the last section revealed the similarity between Thailand today and South
Korea at around 1975. One exception that was pointed out was the very high share of
employment in agriculture in Thailand compared to the share of GDP from agriculture.

TABLE 3.1

SHARES OF EMPLOYMENT AND GDP AT FACTOR COST BY SECTOR
AND VALUE ADDED PER WORKER: 1985

	GDP	EMPLOYMENT	VALUE-ADDED PER WORKER
	(PERCENT)		(BAHT/MONTH)
AGRICULTURE	19.2%	68.4%	838
MANUFACTURING	17.9%	8.0%	6,696
OTHER INDUSTRIES	11.1%	2.9%	11,439
TRADES	14.6%	9.2%	4,752
TRANSP & COMMUNIC	10.2%	2.0%	15,221
SERVICES	27.1%	9.5%	8,542
TOTAL	100.0%	100.0%	2,994

Source : GDP data from NESDB, National Income of Thailand,
        1986 edition, Employment data from NSO Labour
        Force Survey, July-Sept, 1985.

Table 3.1 shows that in 1985 68.4% are employed in agriculture while the
share of GDP at factor cost in agriculture was only 19.2%. This high share of
employment in agriculture together with the low contribution of agriculture to GDP
meant that value-added per man in agriculture was only 838 baht/month. This is
about 8 times less than that in manufacturing, and over 10 times less than in
"other" industries, and transport and communication. It was 5.7 times less than in
trades. This disparity is so striking, and it is worth reflecting that the average
value-added per man (at current market price) in all non-agricultural sectors was
about 8,806 baht per month, or 105,672 baht per year. If one further assumes that
the share of population primarily dependent on agriculture was about the same as the

employment share,[10] then it turns out that GDP per capita in non-agriculture works out to about 52,862 baht, or about US$ 2,049 (25.8 baht/$), i.e. comparable to that of South Korea, and about 52% less than that in Taiwan.[11]

The difference between the share of employment in agriculture and the share of agriculture in GDP in Thailand seems to be unusual when compared to other countries. Table 3.2 gives some agricultural indicators for low, middle and upper-middle income Asian countries. Columns (a) and (b) give the employment share in agriculture for 1980[12] and the agricultural share in GDP for 1982 respectively. It can be seen that apart from South Korea, Thailand and the Philippines had the second lowest share of GDP from agriculture at 22%. The employment share in agriculture for Thailand is however the third highest at 71% after Bangladesh and China. If we divide the share of agriculture in GDP by the employment share in agriculture (the third column), it can be seen that the ratio for Thailand is .28, which is much lower than the value of .42 for the second lowest country, the Philippines, and exactly half the average level of .56 for all the countries in the table.

There appears to be two main reasons why there is such a difference between the ratio of employment in agriculture and the share of agriculture in GDP in Thailand. The first is the past ready availability of forest areas which could be converted to arable land. This was the main destination for migrants from the rural areas in response to the population pressure. Instead of migrating to the urban areas, rural migrants would go to the forest areas (often illegally), and settled down to cultivate the land, and in effect took ownership. As a result one found that up until the late 1970's, the rate of expansion of cultivated area in Thailand was between 3-4% per annum, and was in fact greater than the rate of population

10. This is likely to be an over estimate of the population primarily dependent on agriculture, since the participation rate in agriculture is higher due to less time spent at school of rural children.

11. The comparison with Taiwan is the more meaningful one since it has a very low share of agriculture in GDP, while the share of agriculture in GDP in South Korea was still 14% in 1985.

12. The most recent year for which data are available.

growth in the rural areas. The land/man ratio in agriculture had actually been increasing up until the late 1970's.

TABLE 3.2
AGRICULTURAL INDICATORS
(SELECTED ASIAN COUNTRIES)

COUNTRY	(a) PERCENT LAB.FORCE IN AGRIC (1980)	(b) AGRIC SHARE IN GDP (1982)	RATIO (b/a)
BANGLADESH	75	47	.63
BURMA	53	48	.90
CHINA	74	37	.50
INDIA	70	33	.47
INDONESIA	57	26	.46
KOREA,REP	36	16	.44
MALAYSIA	23	23	1.00
PAKISTAN	55	31	.56
PHILIPPINES	52	22	.42
SRI LANKA	53	27	.51
THAILAND	71	22	.28

Source: IBRD World Development Report, various issues.

A second reason is the very high proportion of farm households who are owner cultivators in Thailand. In 1981, data from the socio-economic survey give the proportion as 83.3% of all farm households.[13] This is likely to be a factor working against large scale migration into the urban areas. It is likely that the market for the sales and purchases of land in the rural areas is thin, and thus owner cultivators who wish to sell their land and migrate to the urban areas may only get rather low prices for their land. This would increase the opportunity cost of migration. Migration from self-cultivating households would therefore be limited to a few family members such as sons or daughters, and may be circulatory in nature, rather than a wholesale movement of all the family members.

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13.   NSO, Socio-economic Survey 1981.

Another factor often mentioned as an explanation for the very high share of employment in agriculture in Thailand is the widespread reliance on non-agricultural work to supplement farm income through out the year, and particularly during the dry season. Thus, while a person may be classified as an agricultural worker, the proportion of time that he or she spends on non-agricultural work may be substantial. This is however presumably also the case in other countries, and data are not readily available for a comparison. Also availability of non-agricultural work may be severely limited in some parts of the country, as evidenced by the very large seasonal unemployment problem in Thailand.[14]

The above imbalance between the employment and production structure suggests large income disparities between agriculture and non-agriculture. For 1985, even assuming that all value-added in agriculture goes to the agricultural households, and that those in agriculture obtain additional income from work in non-agriculture and transfers equal to 75% of what they earn in agriculture, it is still the case that the average earning would be below what they would earn if they worked at the 59 baht per day minimum wage level prevailing in 1985 (for most municipal areas).

Other data sources also confirm the existence of large income disparities between agriculture and non-agriculture. Data from the 1981 Socio-economic Survey give a difference in per capita household income between agricultural and non-agricultural households at about 1:2.3, and wage data from the Labour Force Surveys also give a wage differential in favour of non-agriculture at around 2.[15] What is worse is that the major data sources are consistent in showing that the income disparity between agriculture and non-agriculture has been widening over the last decade. This comes through whether we look at the trend in value-added per worker, the trend in wages, or data from the Socio-economic Surveys. One good sign is that while the disparity of incomes had worsened the incidence of poverty appeared to have been reduced (at least between 1975/6 and 1981).[16]

14. See Sussangkarn (1987).

15. See TDRI (1987), also Jitsuchon (1987).

16. See TDRI (1987), section 2.3.1, and Krongkaew (1987).

With the expected poor price outlook for the major crops, the tendency is for the income disparity between agriculture and non-agriculture to continue to get worse unless there is a major shift of employment out off agriculture. It is unlikely that agriculture can continue to support a share of employment anywhere near the current level in the future. In a recent detailed study of the main crops using a non-linear programming model of the agricultural sector,[17] it was found that if real wages in agriculture were to remain unchanged during the period of the Sixth Five Year Plan (1987-1991), then the demand for labour in agriculture during the peak agricultural season would only increase by around 0.5% per annum, and this is far less than the expected increase in labour supply in the rural areas of around 2.4% per annum, assuming migration patterns similar to the past trend. It was concluded that three things are likely to happen:- (i) a fall in real agricultural wages and incomes, (ii) an increase in under-employment in agriculture, and (iii) an accelerated shift of employment out off agriculture much faster than had happened in the past.

Of the three adjustments above, the latter would seem the most preferable, as it would be a move in a direction to correct the imbalance between the employment and production structure that was discussed above. Further push in this direction also comes from the fact that new land for expansion of the cultivated area is now no longer abundant, and since the late 1970's the cultivated area has only been expanding at around 1% per annum. There are however major policy issues that have to be resolved regarding the locational aspects of population and employment for the future. This has to do with the current regional imbalance, and is discussed in the next section.

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17.   Fongtanakorn, Sussangkarn, Katilarn and Chalamwong (1987).

4. REGIONAL IMBALANCE[18]

Apart from the imbalance between the employment and production structure, another equally significant imbalance exits concerning the locational aspects of population and employment, and that of industries. This imbalance leads to a great deal of disparities in incomes by region. The problem is of course not independent of the disparity between sectors of production, and is partly the combination of the sectoral disparity and the location of industries across regions. Here one also finds some extreme differences which is worth highlighting.

Table 4.1 shows the distribution of GDP (at current market price) by sector and region for 1985.[19] Also given are the population distribution, and GDP per capita. The difference between the Greater Bangkok area and the rest is stark. (The Greater Bangkok area includes Bangkok-Thonburi and the 5 surrounding provinces of Samut Prakan, Samut Sakhon, Nakhon Pathom, Nonthaburi and Pathum Thani).[20] Per capita GDP in the Greater Bangkok area was 58,963.2 baht in 1985. This was over $2,150 at the 27.2 baht/dollar exchange rate in 1985. While the Greater Bangkok area contained 15.56% of the total population, it accounted for 45.54% of GDP. Per capita GDP in the Greater Bangkok area was over 4 times that in all the other regions except for the Central Region, where it was 2.75 times higher; it was 7.29 times higher than in the Northeast. Taken in isolation, it can be said that the Greater Bangkok area is certainly of NIC status, and has been for some time.[21]

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18. This section is mostly from section 2.3.2 in TDRI (1987).

19. Regional GDP at current factor costs are not published by the NESDB.

20. If one just looks at the Bangkok-Thonburi area in comparison to the rest, the differences would obviously be more extreme. However, for problems regarding location of industries, it is more useful to look at the greater Bangkok area as many industries are now being located in the 5 surrounding provinces.

21. Because GDP at current market price contains net indirect taxes, and much of it originate in Bangkok, it will over-state the differential between the Greater Bangkok area and the rest. However, even if we subtract all indirect taxes for the Kingdom from the GDP of just the Greater Bangkok area, the differences are still very large. In this case, per capita GDP in the Greater Bangkok area came to

TABLE 4.1
GROSS DOMESTIC PRODUCT (AT CURRENT MARKET PRICE) BY REGION
(1985, MILLION BAHT)

	KINGDOM	N-EAST	NORTH	SOUTH	CENTRAL	\\1 BANGKOK
AGRICULTURE	178533	41721	42302	33462	50221	10827
INDUSTRY	316697	20611	24295	15367	54693	201730
SERVICES	546124	83365	68799	49126	83209	261625
TOTAL GDP	1041354	145697	135395	97955	188123	474182
PERCAPITA GDP	20148	8083	13304	14737	21395	58963
POPULATION (MIL)	51.68	18.02	10.18	6.65	8.79	8.04

ROW SHARES (PERCENT)

	KINGDOM	N-EAST	NORTH	SOUTH	CENTRAL	BANGKOK
AGRICULTURE	100.00	23.37	23.69	18.74	28.13	6.06
INDUSTRY	100.00	6.51	7.67	4.85	17.27	63.70
SERVICES	100.00	15.26	12.60	9.00	15.24	47.91
TOTAL GDP	100.00	13.99	13.00	9.41	18.07	45.54
POPULATION	100.00	34.88	19.69	12.86	17.01	15.56

COLUMN SHARES (PERCENT)

	KINGDOM	N-EAST	NORTH	SOUTH	CENTRAL	BANGKOK
AGRICULTURE	17.14	28.64	31.24	34.16	26.70	2.28
INDUSTRY	30.41	14.15	17.94	15.69	29.07	42.54
SERVICES	52.44	57.22	50.81	50.15	44.23	55.17
TOTAL GDP	100.00	100.00	100.00	100.00	100.00	100.00

Source: NESDB, GDP by Province, 1985
//1   Bangkok here includes the Bangkok Metropolitan Area and
            the 5 surrounding provinces

45,360 baht in 1985.   This will still be over 3 times larger than that
for any other region except for the Central region, where it will be
2.1 times higher.

The Northeast lagged far behind the other regions. It contained 34.88% of the total population while its share in GDP was only 13.99%. Per capita GDP for the Northeast was 64.6% less than for the North, 82.3% less than the South, 164.7% less than the Central, and 629.5% less than for Greater Bangkok.

Of the other regions apart from the Greater Bangkok area, the Central region had the highest per capita GDP at 21,394.7 baht. Next came the South at 14,736.8 baht, and then the North at 13,304.1 baht.

The distribution of GDP by sector across the various regions is also illuminating. Of course, the share of agriculture in the Greater Bangkok area is very small. For the other regions, the share of agricultural GDP was highest in the Central region at 28.13%. The North and the Northeast had very similar shares of agricultural GDP at around 23.5%, while the South had 18.74%. For services, it can be seen that the distribution of GDP across region is very similar to the distribution of total GDP across region. This meant that the share of GDP from services within each region was rather similar. This is borne out by looking the column shares, where it can be seen that the share of GDP from services was around 50% in all the regions, although the Greater Bangkok area and the Northeast had a little more than 55%, and the Central region a little less than 45%.

For industries, almost two thirds of total GDP originate from the Greater Bangkok area (63.7%). Given the large difference between the value-added per worker between industries and agriculture, the concentration of industries around the Greater Bangkok area is an important source of the difference in per capita GDP between Greater Bangkok and the other regions. Also the industries and services around the capital region tend to be more capital intensive than elsewhere, and this would accentuate the difference in GDP per capita. In the other regions, the Central region had the largest share of GDP from industries, 17.27%; the other regions all had a share of less than 8%.

Data from the 1981 Socio-economic Survey confirms the large per capita household income differences between regions. Average household income per head in the Greater Bangkok region was about 21,500 baht per year. This was about twice the

national average of 10,974 baht. The per capita household income in the Greater
Bangkok area was over three times that in the Northeast, about twice that in the
North and South, and about 80% higher than in the Central region.

As with income disparity by sectors of production, all major data sources
confirm that the disparity of incomes by regions had worsen during the past ten
years or so. Table 4.2 shows the index of real per capita GDP for the various
regions from 1975 to 1985. Also shown are the average rates of growth per annum for
the whole period, and for the sub-periods 1975-80 and 1980-85. Whether one looks at
the whole period from 1975-1985, or at the two sub-periods, it turns out that real
GDP per capita in the Greater Bangkok area showed the fastest average rate of growth
among all of the regions.

TABLE 4.2
INDEX OF REAL PER CAPITA GDP BY REGION
(1975=100)

INDEX OF REAL PER CAPITA GDP

	KINGDOM	NORTH	N-EAST	CENTRAL	SOUTH	GT.BKK
1975	100.0	100.0	100.0	100.0	100.0	100.0
1976	105.6	104.6	98.9	109.7	105.2	107.5
1977	109.7	101.5	94.0	113.2	113.9	115.4
1978	117.0	110.2	104.3	117.7	118.0	122.4
1979	120.4	113.1	107.4	115.0	120.1	130.2
1980	121.2	114.3	111.1	115.8	115.7	132.4
1981	120.6	117.9	103.6	124.7	109.6	129.8
1982	121.0	114.9	107.3	125.3	105.0	130.2
1983	124.9	119.4	114.8	121.7	114.3	132.7
1984	129.9	122.0	113.1	128.7	110.0	141.4
1985	131.0	125.4	113.3	127.9	107.6	144.2
GROWTH 75-80	4.06	2.82	2.51	2.62	3.31	5.82
GROWTH 80-85	1.84	1.72	1.22	1.61	-0.75	2.00
GROWTH 75-85	2.40	2.14	1.62	2.09	0.20	3.15

Source: GDP per capita from NESDB, Gross Provincial Product,
        1975-85,
        Consumer price index from 1977-85 from Bank of Thailand,
        Monthly Bulletin; extend to 1975 using GDP deflators from
        Gross Provincial Product.
Note: Growth rates are trend growth rates computed by log
        regressions.

While the 1985/6 Socio-economic Survey is not yet publicly available, Medhi Krongkaew (1987) showed that regional income disparities has worsen between the 1975/6 and the 1981 Socio-economic Surveys. Table 4.3, reproduced from his study, shows the index of per capital household income by region relative to the mean for the Kingdom. It can be seen that whereas in 1975/6 the per capita household income in the Greater Bangkok area was 82.2% higher than the national average, in 1981 this had increased to 95.9% higher. Apart from the Greater Bangkok area, only two other sub-regions showed an improvement in their relative income position: the Lower North and the Lower South. All other regions suffered a decline, and this was particularly severe for the Lower Northeast, the Central-Middle and Central-West regions, whose indices all fell by more than 10 percent.[22]

TABLE 4.3
SUBREGIONAL INCOME DISPARITIES
(1975/6 AND 1981)

SUBREGION	1975/6 INDEX OF RELATIVE PER CAPITA HOUSEHOLD INCOME	1981 INDEX OF RELATIVE PER CAPITA HOUSEHOLD INCOME
UPPER NORTH	76.9	75.5
LOWER NORTH	91.8	104.2
UPPER NORTHEAST	69.2	64.0
LOWER NORTHEAST	69.6	62.4
CENTRAL WEST	125.2	110.7
CENTRAL MIDDLE	131.5	117.2
CENTRAL EAST	100.9	96.1
UPPER SOUTH	100.0	95.4
LOWER SOUTH	84.4	91.9
GREATER BANGKOK	182.2	195.9
WHOLE KINGDOM	100.0	100.0

Source: Table 5 in Krongkaew (1987).
Data from NSO, Socio-economic Surveys,
1975/6 and 1981.

22. Data on wages also show that over the last 10 years or so real wages in Bangkok had been increasing faster than that for all the other regions. See TDRI (1987), table 2.19.

Looking more closely at the trend in real per capita GDP in table 4.2 reveals that while income disparity between the Greater Bangkok area and the rest had worsen, all regions showed increases in real per capita GDP between 1975 and 1985. The Northeast registered a trend of 1.62% per annum growth, the North 2.14%, and the Central region 1.61% per annum. The case of the South is odd. Even though population growth rates in the South is still rather high, this in itself is unlikely to explain the fall in real per capita GDP that occurred between 1980 and 1985, and which led to only a small trend growth in real per capita GDP between 1975 and 1985. The explanation probably lies with the very high prices for rubber around 1980-81 (See table 2.5).

During the second period from 1980 to 1985, real per capita GDP growth slowed down for the country as a whole, with an average growth of 1.84% compared to a rate of 4.06% achieved between 1975 and 1980. This was because the declining trends in commodity prices, the world recession, and the somewhat over-valued exchange rate up until the end of 1984, led to a period of relative low growth in Thailand. However, a good sign was that the differential in the rates of growth of real per capita GDP between Greater Bangkok and the other regions was less in the period 1980-85 compared to between 1975 and 1980. In the earlier period, the rate of real per capita GDP growth in the Greater Bangkok area was over twice as high as those in all the other regions except for the South. In the latter period, the growth rate differential between Greater Bangkok and the North, Northeast and the Central areas had narrowed considerably.

While the rate of widening in income differential between the Greater Bangkok area and the rest of the Kingdom appeared to have slowed down in the first half of the 1980's, the recent rapid growth of the manufacturing sector due to very good export performance, and the poor agricultural growth performance and prospects, is likely to lead to another period of rapid widening of the differential. The reason is simple. If one looks at the location of the major manufactured export sectors, these are predominantly located in the Greater Bangkok area. The regional distribution is even more extreme than that for all industries as a group, of which 63.7% are located around the capital area. For example, in 1984, over 90% of the value-added from the textile industry was from the Greater Bangkok area, this was

also the case for Garment, Leather Products, Furniture, Integrated Circuits and
Electrical Goods, and Toys and Sporting Goods. For Jewelry, it was around 82%.[23]

For the future, major policy choices have to be made. From the last section
it was seen that the current imbalance between the employment and production
structure is likely to lead to an accelerated shift of employment out off
agriculture. In this section, we saw that the locational distribution of the
manufacturing sector is highly concentrated around the capital area, and this is the
sector that should be the main source of growth for the future. The conclusion
would seem to be that one can expect a rapid increase in the flow of population and
employment into the Greater Bangkok area without major policy initiatives from the
government.

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23.   From NESDB, Regional GDP data tape for 1984.

5. EDUCATIONAL IMBALANCE AND THE LABOUR MARKET

The importance of education, both for the individual and for economic development, has long been recognized. Education is an important part of "human capital". Apart from its non-pecuniary benefits, the economic returns to education is an important incentive determining the demand for education. Thus, there is a close link between the labour market structure, which determines the economic rewards from education, and the observed educational pattern.

TABLE 5.1
GROSS ENROLLMENT RATIOS FOR SELECTED ASIAN COUNTRIES
(1984)

LEVELS OF EDUCATION

	PRIMARY	SECONDARY	TERTIARY
THAILAND	97.0%	30.0%	22.5%
SOUTH KOREA	96.0%	94.0%	26.1%
TAIWAN	100.0%	91.0%	12.5%
SINGAPORE	115.0%	71.0%	11.8%
HONG KONG	105.0%	69.0%	12.8%
INDONESIA	118.0%	39.0%	6.5%
MALAYSIA	99.0%	53.0%	6.1%
PHILIPPINES	107.0%	68.0%	29.1%

Source: IBRD World Development Report, 1987.

The pattern of educational enrollment in Thailand seems rather odd when compared to other Asian countries. Table 5.1 shows the gross enrollment ratio at the primary, secondary, and tertiary levels for selected Asian countries. While primary enrollment is almost universal for most countries, for Thailand there is a striking contrast between the secondary and tertiary enrollment ratios compared to other countries. At the secondary level, Thailand lags far behind the Asian NIC's and some other ASEAN countries. The gross secondary enrollment ratio in Thailand was around 30% in 1984. This compared with 94% in South Korea, 91% in Taiwan, 71% in Singapore, 53% in Malaysia and 68% in the Philippines. On the other hand, at the tertiary level, the enrollment ratios in Thailand compared well with the other countries, with a gross enrollment ratio at the tertiary level of 22.5% in 1984

compared to 26.1% in South Korea, 12.5% in Taiwan, 11.8% in Singapore, 6.1% in Malaysia and 29.1% in the Philippines.

To understand the Thai educational pattern, it is necessary to examine the situation in the labour market. The first important fact is that most of the better educated workers are employed by the public sector. Table 5.2 shows the importance of the public sector for the employment of the better educated. For those with elementary education and below, only around 2% are employed in the public sector. The ratio rapidly increases to 22% for those with secondary education. For vocational education, 41% are employed by the government, for university education 56%, and for teacher training 84%.

TABLE 5.2
SHARE OF GOVERNMENT EMPLOYMENT BY LEVELS OF EDUCATION

	GOVERNMENT EMPLOYMENT	TOTAL	SHARE GOVERNMENT
ELEMENTARY AND BELOW	441058	23036440	1.91%
SECONDARY	320901	1448770	22.15%
VOCATIONAL	229319	554562	41.35%
TEACHER TRAINING	440623	524750	83.97%
UNIVERSITY	244674	434412	56.32%
TOTAL	1676575	25998934	6.45%

Source: NSO Labour Force Survey, July-September 1984.

In the public sector, the pay scale is closely tied to the educational qualifications of the workers, with the result that there are clear increases in pay with education. This is the normal pattern that one would expect from various regressions measuring increases in earnings with education that have been carried out in many countries.[24]

For private employees the situation is not so clear. It is now common practice to view labour markets in LDC's as consisting of two broad segments, the

24. For Thailand see Blaug (1971), and more recently Priebjrivat (1984) and Block, Chutikul and Poapongsakorn (1986).

"formal" and the "informal" sectors. The formal part is theoretically characterized
by wages that do not clear the market and barriers to entry, while the informal
market is viewed as close to the standard text-book model with market clearing
wages, so that in effect the informal sector acts as the absorber of last resort.
The main problem in analyzing the returns to education in such a context is that
with segmentation, and rationing of formal sector jobs, the standard human capital
regressions can lead to rather biased estimates even if dummy variables are put into
the regressions to capture different segments of the market. The difficulty is that
there can be "selectivity" problems, if for example unobserved ability attributes
influence the probability that an individual can get into the formal sector, and
also affect the pay that the individual gets.[25]

In a recent study of the Thai labour market using data from the July-
September 1984 Labour Force Survey, which included specially designed additional
questions to yield information on the place of employment (Sussangkarn (1987)),
wages of private and government employees in the urban areas were analyzed
controlling for possible selectivity biases arising from labour market segmentation.
The study showed that there are high rewards to education in the "formal" part of
the labour market (the Government sector and the larger private firms), but very
little rewards to education above the primary level in the "informal" sector. In
fact, none of the education variables were significant at the 10% level in the wage
equation of the informal sector, while all of these variables were highly
significant in the formal sector wage equation.

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25. For extensive discussions of selectivity problems and biases in
estimations see Maddala (1983).

TABLE 5.3
PREDICTED PRIVATE WAGES IN BANGKOK
MALE, FEMALE -- FORMAL, INFORMAL
35 YEARS OLD, 10 YEARS EXPERIENCE, NON-MIGRANT
(BAHT PER MONTH)

	MALE		FEMALE	
	FORMAL	INFORMAL	FORMAL	INFORMAL
< PRIMARY	2,051	2,032	1,706	1,298
PRIMARY	2,579	2,032	2,146	1,298
SECONDARY	3,915	2,032	3,258	1,298
VOCATIONAL	5,264	2,032	4,380	1,298
TEACH	4,367	2,032	3,633	1,298
UNIVERSITY	8,285	2,032	6,894	1,298

Source: Sussangkarn (1987), tables 3.13 and 3.14.

Table 5.3 gives a sample of the predicted wages for private employees in Bangkok from the estimates, where the insignificant educational coefficients in the informal wage equation were taken to be zero. The pattern shows very large rewards to education in the formal sectors for both males and females. Given the zero educational return in the informal sector, the wage differential between the formal and the informal sector rapidly rises with the level of education. For males, the pay for those with less than primary education are almost the same in the formal and informal sector. The differential rises to 27% for those with completed primary education, 93% for secondary education, and 308% for those with university education. For females there are generally higher differentials between the formal and informal sectors. Even for those with less than primary education, the differential was 31%, and this rises to 431% for those with university education. One finds greater male-female wage differential in the informal sector, and this may reflect the predominance of more physically demanding jobs in this sector to which females are more of a disadvantage. It may also simply reflect greater discrimination against females in the relatively uncontrolled informal market.

While the above has indicated that education appears to yield high rewards in the formal part of the labour market and very little in the informal sector, the analyses were confined to employees (private and public) where wages and other data

on the place of employment were available.[26] However, most workers in Thailand are
not employees. In 1984, only 6.4% of all workers were public employees and 18.3%
were private employees. By far the vast majority of workers are own-account and
unpaid family workers (including most of those in agriculture).

The difficult in analyzing the impact of education on the earnings of self-
employed workers is that most household surveys do not have adequate information on
the value of other productive assets such as capital, and self-employed income are
partly the returns to these other assets, also there are usually no information on
costs of production. Fortunately some very careful work have been done to analyze
the impact of education on farm productivity in Thailand; see Jamison and Lau
(1982). While the analyses were not based on a nation-wide sample and were limited
to farm households around the Chiangmai area, the findings were very interesting,
and together with the above findings for employees yield a consistent picture for
the understanding of payoff to education and enrollment patterns in Thailand.

After performing many multiple regressions on almost all combinations of the
variables, the main finding of Jamison and Lau was that having 4 years of completed
primary education generally had a significant impact on farm productivity. This was
true of both those using relatively modern farm technologies ("chemical farms"), and
those using more traditional technologies ("non-chemical farms"). The situation for
education above the primary level is different. There are some evidences for
significant productive effects of more than 4 years of primary education on the more
modern farms, but this was not always the case. For the more traditional farms the
regressions clearly rejected the hypothesis that more than 4 years of primary
education had any significant impact on farm productivity.[27] Given that most of
agriculture in Thailand is still very much based on traditional technologies, except
in the more advanced agricultural areas, this finding suggests that for the majority
of farm households having more than primary education does not pay very much.

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26. The analyses were also confined to only the urban areas due to
unavailability of crucial data on the place of employment for those in
the rural areas.

27. See Jamison and Lau (1982), table 6-2.

Given that employment in agriculture accounts for around 70% of total employment, the findings of Jamison and Lau appear to mean that for most workers, there is little economic benefit in getting education beyond the primary level. This view is reinforced when our own earlier findings on the lack of significant educational effects on wages of employees in the informal sector is taken into account. Only in the formal sector is there a clear benefit to getting educated beyond the primary level.

As the level of education increases, one finds that a higher proportion of workers at that particular level of education are employed in the formal sector. As was already clear from table 5.2, even just looking at government employment (a part of the formal sector), as the level of education increases a higher proportion are found in government employment; an exception is the teacher training group, but this reflects the predominance of the government as the supplier of education in Thailand.

These findings can be interpreted as follows. The expected reward for education is roughly the weighted average of the rewards in various forms of employment, including self-employment, the formal market for employees, and the informal market for employees.[28] Those with relatively low levels of educations are mostly employed in agriculture and in the informal sector, and thus the rewards to education in these forms of employment will have the greatest weight in determining the average expected reward to education. As the level of education increases, the formal sector becomes more important in determining the rewards to education as more and more are to be found in the formal sector. It is likely that this will lead to the rewards for education rising faster and faster as the level of education increases. Formally, suppose we just assume that a worker can either end up in the formal or the informal sector, also assume that BF(E) is the lifetime discounted benefit for an amount of education E above the primary level in the formal sector, BI is the (lifetime discounted) benefit in the informal sector (assumed to be

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28. The expected reward should also take into account possible periods of open unemployment.

independenc of E), and P(E) is the probability of an individual with education E getting into the formal sector, then the expected benefit, XB(E), is given by:[29]

$$XB(E) = P(E).BF(E) + (1-P(E)).BI$$

Assume that $P'(E) > 0$, $BF(E) > BI$, and $BF'(E) > 0$. Then,

$$XB'(E) = P'(E).(BF(E)-BI) + P(E).BF'(E) > 0, \text{ and}$$

$$XB''(E) = P''(E).(BF(E)-BI) + 2.P'(E).BF'(E) + P(E).BF''(E)$$

$XB''(E)$ will be greater than zero if $P(E)$ and $BF(E)$ are approximately linear, or do not show too much concavity.

The situation on the cost side of education in Thailand would tend also to make the net benefit rise more rapidly as the level of education increases. Subsidies are highest for higher education, and costs are relatively high at the secondary level,[30] see for example Sussangkarn, Ashakul and Myers (1986), chapter 6, also Chutikul (1987) and Nitungkorn (1987). In the rural areas, where accessibility to formal sector jobs may be much more difficult, the net benefit may actually be negative for most educational levels above the primary level, and particularly at the secondary level.

The above discussions shed light on the enrollment pattern in Thailand. For most people, there is no real benefit to getting education beyond the primary level. Secondary enrollment are therefore relatively low. As the level of education increases, however, the probability of getting a formal sector job (particularly a government job) rises rapidly, and for those with relatively easy access to higher education the net payoff to getting educated right up to the tertiary level is high. Thus, while enrollment at the secondary level is low, there is a great demand for continuation on to the higher education level, and this explains the rather high enrollment ratio at the higher education level in Thailand.

Clearly the apparent imbalance in the educational enrollment figures in table 5.1 are related to differences in labour market and employment structures in

29. Ignoring periods of unemployment.

30. Including both monetary and accessibility costs.

the various countries. We learned from section 3 that the share of employment in agriculture in Thailand is very high when compared to the share of value-added from agriculture. To some extent this reflects main reliance on rather traditional farming practices, with relatively little capital inputs, leading to low value-added per head in agriculture. From the Jamison and Lau study, this would tend to lead to low demand for education above the primary level from farm households, and this helped to explain the relatively low enrollment ratio at the secondary level in Thailand. It is interesting to explore this line of reasoning in a cross-country context.

Using cross-country data on 66 low, medium, and upper medium income countries, the following regression could explain the relative enrollment pattern at the primary and secondary levels fairly well:-[31]

$$SCON = .6043 - .534*SEMAG + .0961*RSVSE$$
$$(11.16) \quad (-8.2) \qquad (1.603)$$

Adjusted R^2 = .5756

Here, SCON is the ratio of secondary enrollment to primary enrollment in 1980. It is taken as an indicator of the tendency for individuals to continue on above primary education. SEMAG is the share of employment in agriculture in 1980. RSVSE is the ratio of the share of value-added from agriculture to the share of employment in agriculture. It is an indicator of the difference in value-added per worker between agriculture and non-agriculture. Higher RSVSE indicates a smaller gap between the value-added per head in agriculture and in non-agriculture.

The regression is consistent with what we have learned from the above discussions. Countries in which the share of employment in agriculture are high are generally the ones with low continuation to the secondary level. The significance of SEMAG is very high, and in fact through various regression experiments using alternative variables that were tried, this variable is the most significant in explaining the tendency for continuation on to the secondary level. RSVSE is almost significant at the 10% level and has the expected sign. Countries with relatively

31. Data are from various issues of the World Development Report.

more even distribution between the share of employment in agriculture and the share of value-added from agriculture tend to have higher continuation beyond the primary level. In general, countries with higher RSVSE are the ones with higher value-added per worker in agriculture, and one would expect these to be the ones using relatively more modern farming technology. If the findings of Jamison and Lau were true for many countries, then the ones with the higher RSVSE's will tend to show greater return to secondary education in agriculture and hence more incentives for individuals to continue beyond the primary level.[32]

It is also interesting to see what this equation predicts about the secondary enrollment ratio in Thailand compared to the actual ratio. From the equation, the predicted secondary enrollment ratio in Thailand turns out to be 24.5% compared to the actual value of 29%. The difference is not too large, but it is interesting to note that the predicted value is actually lower and not higher than the actual value. Thus, it appears that Thailand has just about the expected ratio of secondary enrollment given its very large share of employment in agriculture and the large difference between value-added per worker in agriculture and in non-agriculture, with if anything a slightly higher ratio than to be expected.

The analyses in this section show that the enrollment structure in Thailand can be understood fairly well if we take into account the employment structure and the way the labour market works in relation to the rewards for education. The low enrollment at the secondary level is mainly due to the predominance of employment in agriculture together with the fact that the rewards to education in agriculture is very low or non-existent.[33] What appears to be an imbalance from table 5.1 is so because of the very high share of employment in agriculture in Thailand, and is related to the imbalance between the employment and production structure discussed

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32.   The simple interpretation here of course ignores all the supply factors that can influence availability of secondary schools, and the costs of secondary education. In fact, these supply factors may also be correlated with the share of employment in agriculture, so are part of the reason why SEMAG is so highly significant in the equation.

33.   The lack of reward in the informal market for employees of course also contributes to the low enrollment.

in section 3 above. The rather high enrollment of higher education is also explainable from the structure of the labour market, in which the better educated are mostly employed in the formal sectors, with high returns to education. While most people do not continue on to secondary education, most that do set their sights on higher education and do not generally desire secondary education for its own sake.

6. ISSUES FOR THE FUTURE

As Thailand takes the path towards a more rapid industrial growth, it is clear from the analyses of the previous sections that the issues concerning the balance between the employment and production structures and the balance between the locational distribution of population and of production needs to be carefully monitored and planned. Only by following a development transition that will correct the current imbalances will the benefits of economic development be spread out more evenly.

By default this will happen, as people will adjust and move to where ever the economic opportunities are. The process may be a slow one, but if agriculture continues to stagnate, and disparities widen continually, more and more people will move into the Greater Bangkok area. The government does not seem to be in a position to simply act passively. Given the past imbalances, it is likely that changes will occur quickly, particularly given the current dynamism of manufactured exports.

A three prong approach appears to be called for.

1. Further infrastructure development in the Greater Bangkok area, particularly in the 5 surrounding Changwats.
2. Developments of alternative growth poles to the Greater Bangkok area focussing on labour intensive industries.
3. Rural development programs to ease the hardship in the rural areas for those in backward areas who cannot easily relocate due to various factors.

These three approaches should not be thought of as alternatives. All are necessary. In fact these are schemes that are already in government plans. The real questions are really ones concerning size, and appropriate mixture of the different approaches. One thing that is clear is that the widening of the current imbalances and implied income disparities should not be allowed to accelerate. This can lead to serious problems concerning social stability, and also political stability. What is also clear is that agriculture cannot continue to support the

very large share of employment as at present. Similarly, the poorer regions such as
the North-east cannot continue to support such a dis-proportionate share of the
population as at present.

Human resource investment through education also cannot be ignored. While
section 5 showed that the educational pattern is explainable with reference to the
employment and labour market structure, the latter is part of the current problem of
imbalances that have to be tackled. Major changes are underway. The sources of
employment for those with relatively better education are already changing with the
policy, effective since around 1984, to limit civil service growth to only 2% per
annum, down from almost 10% per annum since around the mid 70's. The current rapid
growth of manufacturing should help ease the transition toward a leading role for
the private sector as the absorber of the better educated. With movements of
employment away from agriculture, there are likely to be more and more demand for
secondary education. Finally, education planning must be consistent with policies
concerning population redistribution.

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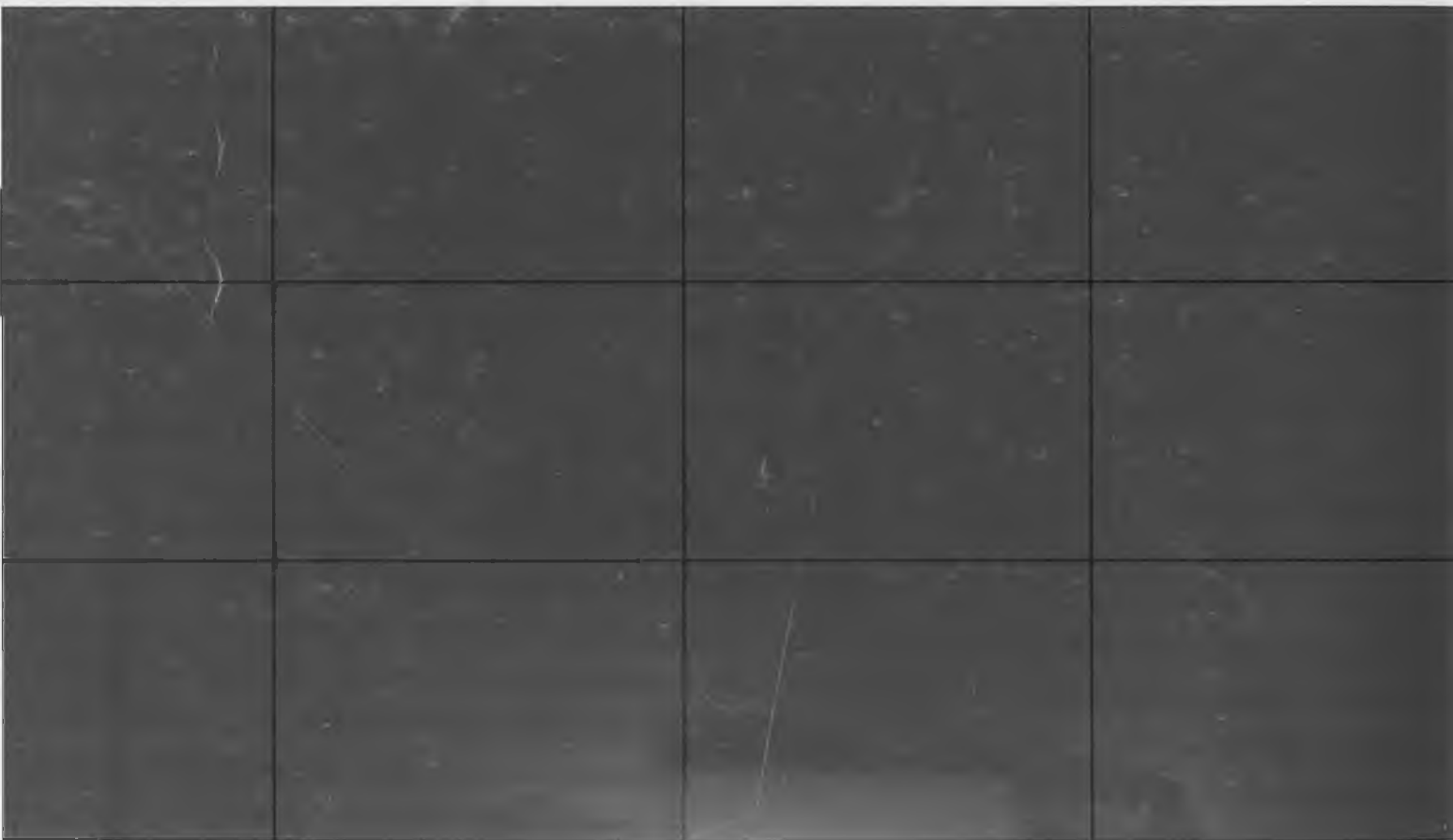
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