Economic Contribution of Migrant Workers to Thailand

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Abstract

In the past decade or two, an increasing number of migrants from countries neighboring Thailand have moved to Thailand temporarily or permanently in search for jobs and life security, causing an increase in the labor supply in the Thai labor market. This paper attempts to find economic contribution of these migrant workers to Thailand using various data sources and a collection of related findings. We find that capital gains from migrant workers show an increasing trend from around 0.03 percent of the real national income (880 million baht) in 1995 to around 0.055 percent of the real national income (2,039 million baht) in 2005. Using the adjusted labor share, the net contribution of migrant workers is on average 0.023 percent of the real national income per year, or around 760 million baht per year.

Keyword: Migration, Economic Contribution, Thailand

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I. Introduction

In the past decade or two, an increasing number of migrants from countries neighboring Thailand have moved to Thailand temporarily or permanently in search for jobs and life security, causing an increase in the labor supply in the Thai labor market. Most of these migrants are known to be of working age and have low skills and low education. The wages paid to these workers are known to be lower than those for Thai workers, which might have contributed as a benefit to Thailand in terms of their 'cheap' labor cost. Although the positive contribution of these migrants are not yet clearly known , discussions among policymakers and various stakeholders involved increasingly focus on the negative impacts these migrants might have caused, especially on the unskilled Thais and on the costs to the government to provide basic rights to these migrant workers.

This paper attempts to find economic contribution of these migrant workers to Thailand using various data sources and a collection of related findings. Section II provide estimates of the number of irregular migrants in Thailand and describes the characteristics of these workers. Section III describes informal labor markets in Thailand in which most migrants workers are concentrated. Section IV presents economic contributions from migrant workers to Thailand in terms of (1) the net gain, the labor losses, and the capital gains using a classical assumption in the labor market model and (2) the migrants' contribution in terms of cost competitiveness. Section V discusses the future trend of migrant workers and its implications to the Thai labor markets.

II. Irregular Migrants in Thailand

2.1. The Number of Irregular Migrants in Thailand

Even though different sources of migrant data give different estimates of total migrant number, one can observe that the total number of migrants from Myanmar, Laos, and Cambodia has increased significantly in the past decade. Table 1 shows the total number of registered migrants and the estimated number of unregistered migrant from 1995 to 2005 from Martin (2007)'s report. According to the number shown in the report, even though the number of registered migrant fluctuated, the total number of migrants has increased from 700,000 in 1995 to 1,773,349 in 2005. In 2004, when the

major registration took place to generate a 'census' of irregular migrants, it was estimated that the total number of registered migrants were about half of those actually stayed in Thailand.

Table 1: Number of Foreign Workers in Thailand, 1995-2005

Year	*Registered*	*Non-registered*	*Total*	*Percent of Registration*
1995	293,652	406,348	700,000	42%
1996	293,652	424,037	717,689	41%
1997	90,911	870,556	961,467	9%
1998	99,974	886,915	986,889	10%
1999	99,956	563,820	663,776	15%
2000	568,249	281,751	850,000	67%
2001	409,339	558,910	968,249	42%
2002	288,780	711,220	1,000,000	29%
2003	849,552	149,848	999,400	85%
2004	705,293	807,294	1,512,587	47%
2005	668,576	1,104,773	1,773,349	38%

Source: Martin (2007), Table 2.

Another source of data is from the 2007 database from the Ministry of Interior. According this database, the total number of migrant registered with the Ministry of Interior at the beginning of 2007 is approximately 2.8 million (Table 2).

Table 2: Number of Irregular Migrant Workers from Myanmar, Laos, and Cambodia by Age and Sex

Age Profile	*Male*	*Female*	*Total*
<15 years old	90,893	83,379	174,272
15-60 years old	1,480,143	1,137,224	2,617,367
> 60 years old	7,388	7,667	15,055
All Ages	**1,578,424**	**1,228,270**	**2,806,694**

Source: The Ministry of Interior, Thailand.
Note: Data was collected on January 2007.

Another source of data is from the database from the Ministry of Labor. The data were complied from the 2004 registration campaign for migrant from Myanmar, Laos, and Cambodia. The migrants included in this database are those who had gone through the 2004 registration process with the Ministry of Interior and had received work permits from the Ministry of Labor in 2004. The total number of migrants in

this database is 829,573 migrants from Myanmar, Laos, and Cambodia, where about 74 percent of these were from Myanmar, about 13 percent were from Laos, and about 13 percent were from Cambodia.

When compared to the number of registered migrants in 2005 by the Ministry of Interior, where village heads reported the number of migrants from Cambodia, Laos, and Myanmar, registered or unregistered, living in their communities, the those who received the work permits from the Ministry of Labor in 2004 accounted for approximately 60 percent of all working- age migrants (Bryant and Rukumnuaykit, 2007).

Table 3: Distribution of Migrant Workers by Country of Origin: Cambodia, Laos, and Myanmar

Country of Origin	*Percent of all Migrants*
Cambodia	13.4
Laos	12.9
Myanmar	73.7
Total Observation	829,573

Source: Authors' calculation. Data collected from Ministry of Labor.

2.2. Characteristics of Irregular Migrants in Thailand

The data from the Ministry of Labor (Table 4) show that most irregular migrants in Thailand are in working ages (15-60 years old). Working-age population of these migrants accounts for 93 percent of all migrants in 2007. There were more male than female migrants (1,578,424 vs. 1,228,270), especially among the working-age population (1,480,143 vs. 1,137,224).

Table 4: Distribution of Migrant Workers by Country of Origin and Sex

Country of Origin	*Female (%)*	*Male (%)*	*Total Observation*
Cambodia	30.3	69.7	111,391
Laos	55.7	44.3	106,706
Myanmar	44.7	55.3	611,476
All	**44.2**	**55.8**	**829,573**

Source: Authors' calculation. Data collected from Ministry of Labor.

The distribution of migrant workers by country of origin and sex is shown in Table 5. The proportion of male migrants from Myanmar and Cambodia is higher than that for female migrants while there were more females than male migrants from Laos. The proportion of male migrants to all migrants was about 56 percent.

Table 5 shows the distribution of migrant workers by country of origin and type of work registered with the Ministry of Labor. In the raw data there are only two types of work, 'domestic worker' and 'laborer.' About 84 percent of all migrants worker worked as a 'laborer.' Laotians, however, had a higher proportion of workers who worked as domestic workers than migrants from Cambodia and Myanmar (33 percent vs. 8 percent and 14 percents respectively). Among migrant domestic workers, about 87 percent were females while females accounted for about 36 percent of all laborers.

Table 5: Distribution of Migrant Workers by Country of Origin and Type of Work

Country of Origin	*Domestic Worker (%)*	*Laborer (%)*	*Total Observation*
Cambodia	7.6	92.4	111,391
Laos	32.7	67.3	106,706
Myanmar	14.1	85.9	611,476
All	**15.6**	**84.4**	**829,573**

Source: Authors' calculation. Data collected from Ministry of Labor.

Table 6: Distribution of Migrant Workers by Type of Work and Sex

Migrant Workers	*Female (%)*	*Male(%)*	*Total Observation*
Domestic Worker	86.9	13.1	129,535
Laborer	36.3	63.7	700,040
All	**44.2**	**55.8**	**829,575**

Source: Authors' calculation. Data collected from Ministry of Labor.

Although there is no dataset that can be used to clearly examine the education of irregular migrants in Thailand, migrants from Myanmar, Laos and Cambodia are believed to have low education and low skills. According to Sussangkarn (1996), about 75 percent of migrant workers in Thailand in 1995 worked in agricultural sector, 20 percents worked in low-skill industries, and 5 percent worked in service sector. According to the same study, in 1995, about 93 percent of Thai workers in

agricultural sector and about 78 percent of Thai workers in low-skill industries had primary education or less.

Even though these migrants are of low education and low skills, they are demanded by employers in some sectors in Thailand. Punpuing et al. reported the attitude of employers that a high proportion of employers in agricultural and domestic work sectors thought that "migrants are good for Thailand because they are cheap" (Punpuing et al., 2006). However, less than half of employers in livestock, fishing, and manufacturing sectors agreed with the statement.

Table 7: Proportion of Employers that Agree to the Statement, "Migrants are good for Thailand because they are cheap" by sector

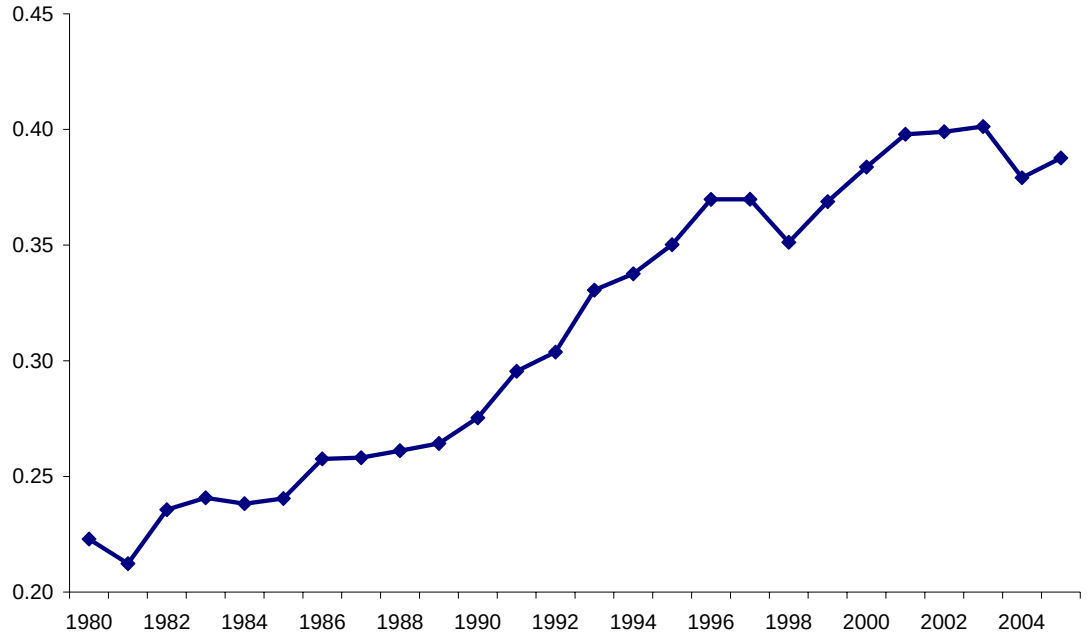
Sector	***Percent***	***Observation.***
Agriculture	66.3	92
- Crop	76.2	64
- Livestock	42.3	28
Domestic Work	69.4	62
Fishing	22.0	82
Manufacturing	26.3	80

Source: Punpuing et.al. (2006)

III. Migration and Informal Sector

Similar to the labor markets in many other developing countries, the Thai labor market consists of a large proportion of workers who are non-wage employees and who work in the informal sector. Non-wage workers are classified as (1) own-account workers and (2) unpaid family workers, which accounted for, respectively, about 32.7 percent and 25.5 percent of total employment in 2003. The sum of those two is the ratio of workers in the informal sector to total employment. These workers might be considered by the Labor Force Survey as non-wage workers; this includes workers who work in an enterprise that typically operates on a small scale with a low level of organization.

Figure 1: The Share of Wage and Salaried Workers (workers in formal sector) to Total Employment



Source: Authors' calculation. Data collected from Thailand's Labor Force Survey

The share of workers in the informal sector dropped significantly, from 77.8 percent in 1980 to 58.2 percent in 2003. During this period, the share of own-account workers was found to be quite constant, about 32 percent, while the share of unpaid family workers had dropped substantially from 46.7 percent in 1980 to 25.5 percent in 2003. Therefore, this pattern means that the declining share of unpaid-family workers is causing a decrease in the share of informal workers. Why did the share of unpaid-family workers decline? This is because the majority of unpaid-family workers in Thailand are in the agricultural sector. Over time, a large number of these workers moved to formal sectors, especially to small and medium-sized enterprises.[1] The movement out of agricultural sector might have been because there was more supply of migrant workers who could substitute Thai workers at a lower cost. The seasonal pattern of the number of workers in the formal sector is determined mainly by the seasonal mobility of laborers in private enterprises. Nevertheless, the seasonal

[1] Approximately 85 percent of unpaid-family workers are in the agricultural sector, followed by those employed in the commerce sector and in the service sector.

movement of workers between the formal sector and the informal sector is also apparent, especially in the agricultural sector.[2]

By applying this percentage share of labor to the total employment series using the national account, the real wage rate of workers can be calculated using the definition of labor share, corresponding to two categories of workers: those in the formal sector and those in the informal sector. The real wage rate of workers in the formal sector (wage and salaried workers) is calculated as the product of the raw labor share times the nominal GDP at factor cost divided by the number of workers in the formal sector (wage and salaried workers), then adjusting the wages using the 1988 GDP deflator.[3] The most significant feature of this series is its substantial increase during the boom decade, namely, from 47,928 baht in 1986 to the maximum of 75,483 baht in 1996, and its slight drop during the crisis period to 73,328 baht in 2003. Consistent with the rapid growth of the Thai economy, the real wage rate of salaried workers increased substantially during the boom decade. The wage rate in 2003 was about 57 percent higher than what it was in 1980. During the crisis, the real wage rate of workers in the formal sector was found to be quite stagnant. It was consistent with the situation existing in Thailand that many corporations decided not to immediately lower their employees' wages, but rather to choose other options.[4]

Figure 3 also illustrates the real wage rate of workers in the informal sector. Similar to what we computed for wage and salaried workers, the real wage rate of informal workers is calculated as the difference between the adjusted labor share and raw labor share, times the real GDP at factor cost (in 1988 prices), divided by the number of workers employed in the informal sector (own-account workers plus unpaid family workers). Unlike those in the formal sectors, the computed wages of workers in the informal sector slightly increased during the boom decade from 26,169

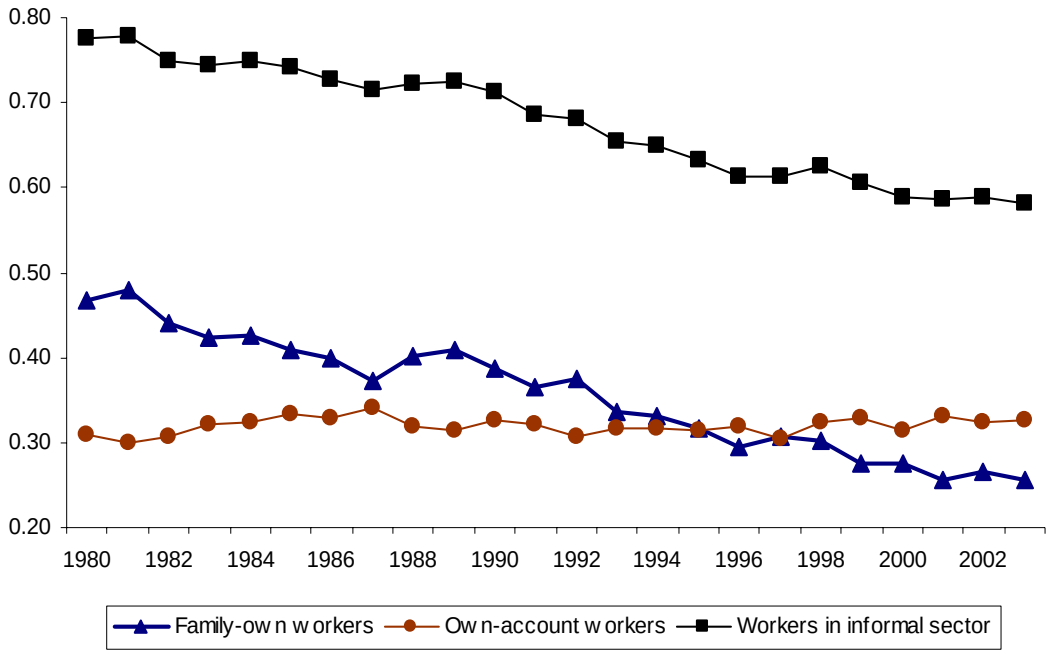
[2] Regarding the Labor Force Survey, the majority of unskilled workers move from the formal sectors to the informal sector, especially during the cultivation period in the agricultural sector (i.e., the third quarter of the year). Approximately 68.8 percent of unpaid family workers are female; they were found to have more seasonal (by quarter) movement compared with male workers.

[3] The Labor Force Survey also provides the monthly wages of those workers in the formal sector. Nevertheless, computing real wages from the account identity also introduces another approximation. Comparing the series to the minimum wages in each period, wages computed from the national account seem to be reliable, since those computed wages are slightly higher than the minimum wages (see Pholphirul, 2007).

[4] Those options included, for example, encouraging executives and high position managers to retire early, with large compensations, cutting the bonuses and other fringe benefits to employees, or saving on other expenditures such as costs of transportation, advertising, and production.

baht in 1987 to 28,874 baht in 1998. However, it significantly increased to 40,092 baht in 2003. A sharp increase of real wages in the informal sector from 28,874 baht in 1998 to 37,106 baht in 1999 was due to a sharp increase in the share of income from unincorporated enterprise (IUE) during this crisis period.

Figure 2: The Share of Own-Account Workers, the Share of Family-Own Workers, and the Share of Workers in Informal Sector.



Source: Authors' calculation. Data collected from Thailand's Labor Force Survey

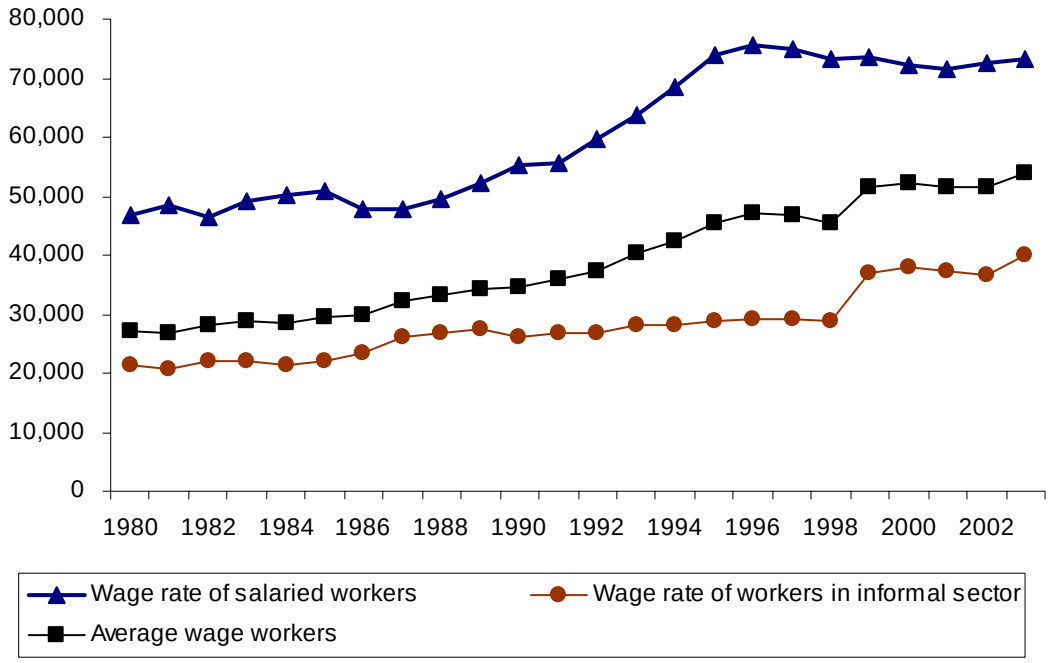
On average, the real wages of salaried employees or workers in the formal sector are about 2.2 times higher than those of workers in the informal sector. The gap became larger when the boom decade started. In 1987, the real wages of workers in the formal sector were about 1.8 times higher than those of workers in the informal sector. In 1996, real wages of workers in the formal sector were about 2.6 times higher than those of workers in the informal sector. It sounds intuitive to say that the wage rates of salaried workers are higher than those of informal workers.[5] Since the majority of informal workers are unpaid family workers, and about 85 percent of such

[5] Due to a limitation of data, we cannot distinguish real wage between own-account workers and unpaid family workers. Nevertheless, to avoid its bias, we make the weighted-average to compute real wage of workers in the informal sector.

workers are employed in the agricultural sector, the wages of those workers are much lower than those of the workers in the manufacturing sector.[6]

Since 75 percent of migrant workers in Thailand work in agriculture sector, we can predict the direct impact of migrant workers especially on informal labor market. As previously explained, the wage of informal workers are relatively constant and lower than the wage of formal workers as a whole, an increase in the supply of migrant workers should result in the decrease in the wage of informal workers, which by the end could widen the wage gap between formal and informal sectors.

Figure 3: Real Wage Rates: Salaried Workers, Workers in Informal Sector, and Average (Unit: Baht per year)



Source: Author's calculation. Data collected from Thailand's Labor Force Survey

IV. Economic Contribution from Migrant Workers

A number of researches on the impacts of migration in developing countries have focused on social aspects of receiving and sending countries. However, direct

[6] Even though some own-account workers, such as doctors and lawyers, might have higher earning than salaried employees, the share of those own-account workers is still low and relatively stable at approximately 30 percent of total employment throughout the periods studied.

studies on the measurement of economic impact in receiving countries are increasingly an interest of policymakers involved, especially in a case of the Thai economy, which is a major host of migrants in the South-East Asia. In order to measure economic contributions from migrant workers, income share of labor (to the real national income) must be estimated since labor income share has a direct effect on labor productivity and living standard of Thais.

4.1. Evolution of Labor Share and Capital Share

This section analyzes the dynamics of factor share in Thailand during the period 1980-2005. In macroeconomics, factor shares are calculated within aggregated terms of national account. The National Income and Product Account (NIPA) denotes the composition of the nominal value added, which comprises the total nominal wage bill and total nominal profits. Therefore, the share of labor in the value added output is computed as a ratio of the total wage bill to the value added in real terms.[7] NESDB is a Thailand's central planning agency; it arranges NIPA to provide the following series: the value added in both nominal and real terms and the total wage bill in terms of "compensation to employees."[8] Therefore, the "raw labor share" of Thailand is constructed as the ratio of the compensation to employees to GDP at factor costs.[9] As shown in Figure 1, the series displays a slightly increasing trend, with a mean of 0.36, maximum value of 0.42, and minimum value of 0.31.

However, as commonly occurs in most developing countries employee compensation differs from labor income (Gollin, 2002). Labor income also includes some important parts of non-wage compensation, rents from particular jobs, and the returns to entrepreneurs. These specific components comprise the labor income of the people who are not wage-employees. Also in Thailand, a large proportion of the total labor force includes workers who are registered as "own-account workers" and

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[7] $VA_n = W_n + \prod_n$, where VA_n is the nominal value added, W_n is the nominal wage bill, and $\prod_n$ is the nominal profit. Then, $1 \equiv \frac{W_n}{V_n} + \frac{\prod_n}{VA_n} \equiv \left(\frac{w_n L}{VA_n}\right) + \left(\frac{r_n K}{VA_n}\right) \equiv s^L + s^K$, where s^L is the raw labor share and s^k is the raw capital share.

[8] Compensation to employees in NESDB calculations consists of (i) wages and salaries and (ii) employers' contribution of social security, which are workers in the formal sector.

[9] Provided by NESDB, GDP at factor cost = GDP at market price – indirect taxes + subsidies – provision for consumption of fixed capital.

"unpaid-family workers," who do not receive regular earnings in terms of wages and salaries.[10] NESDB measures this part of labor income (or profits) as "Income from Unincorporated Enterprises" (IUE). The share of IUE represents a mixture of both wages and profits allocated to own-account workers, including small production units that are generally owned and managed by households.[11]

Also shown in Figure 4, the share of IUE (the ratio of IUE to the value added) decreased from 0.580 in 1980 to the minimum level of 0.305 in 1996. The ratio then started to increase after 1996. The upward trend of the IUE share during the period 1996-1999 was generally a result of decreased income of informal workers during crisis period. Nonetheless, to compare between both series, in 1980, the share of IUE was about twice as large as that of the compensation of employees. However, it dropped significantly in 1988.

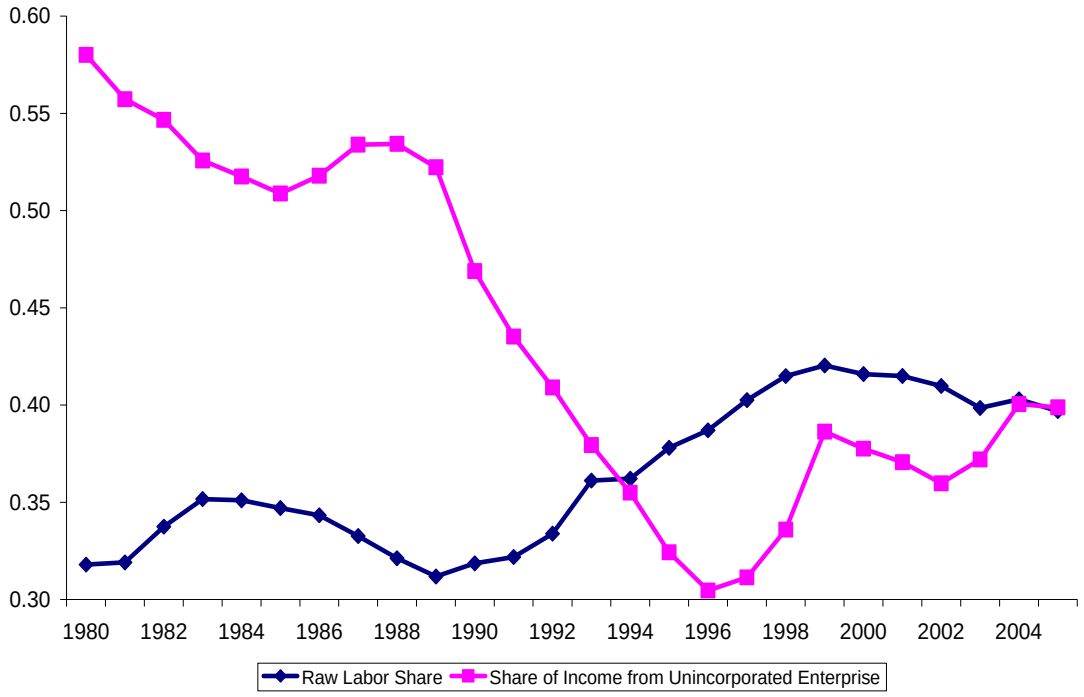
In Figure 4, the share of the IUE and the raw labor share move in opposite directions. The long-run changes resulted in a shift in the structure of employment out of the agricultural sector. This structural change increased the proportion of wage-earning workers, who used to be self-employed. This phenomenon is known to exist during transitional periods in many developing countries. The transition is due to a substantial increase in wage earnings in the manufacturing sector over the periods of economic development. Hence, a large number of workers from the agricultural sector decided work in manufacturing sectors where wages and salaries were higher. As a result, we observe that the labor share and the UIE share move in opposite directions. Nevertheless, as previously mentioned, the raw labor share could be underestimated since some specific unmeasured incomes are not included in labor compensation. As a general rule of thumb, labor's share of income is assumed to be about two-thirds that of the national income—although the exact figure is sensitive to specific data used to calculate the ratio. We apply the methodology of "two"

[10] In 2000, there were approximately 1.93 million own-account workers in Thailand. The majority of the own-account workers are in the agricultural sector (47.2 percent), commerce sector (23.9 percent), manufacturing (8.7 percent), services (9.8 percent), transportation and communications (5.8 percent), and others (4.6 percent).

[11] Many studies define these as income of self-employed workers, which refers to income for own-account workers as well as the profits of unincorporated enterprises. Examples of own-account workers are doctors, barbers, and retailers, who work in independent units. They supply all the factors of production themselves and do not manage the accounts of production factors separately. Regarding the NESDB definition, income from unincorporated enterprise is defined as "Income from Farms, Professionals, and other Unincorporated Enterprises.

adjustments (Adjustment 1 and Adjustment 2) proposed by Gollin (2002) and then compute the average outcomes on both adjustments.[12]

Figure 4: Raw Labor Share and Share of Income from Unincorporated Enterprises.



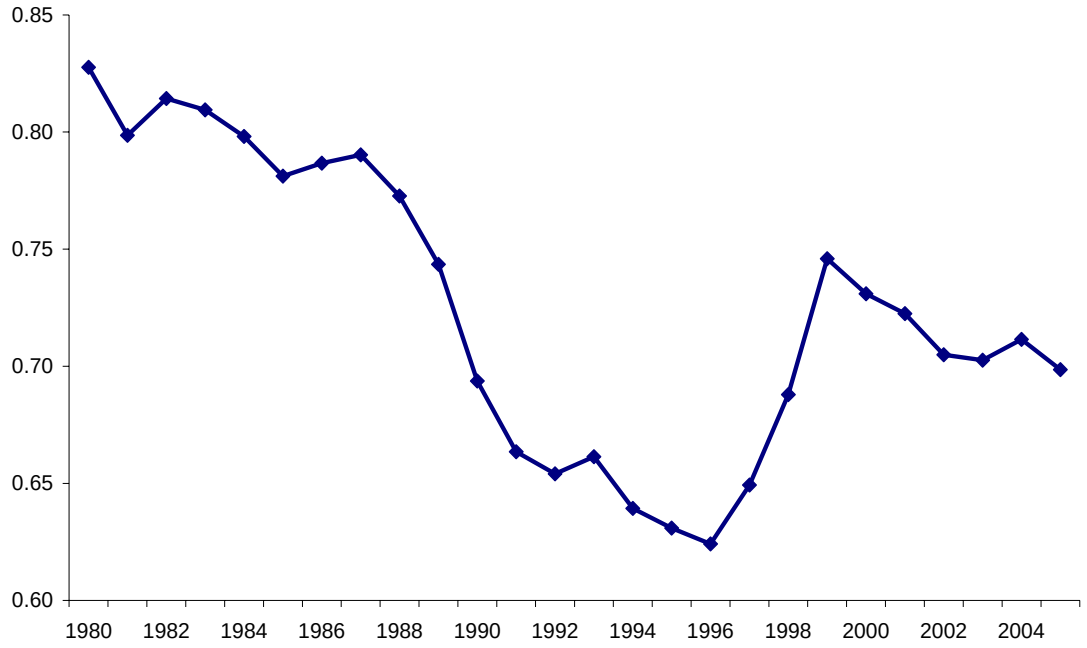
Source: Authors' Calculation. Data collected from NESDB.

Differing from the raw labor share shown in Figure 4, the adjusted labor share shown in Figure 5 displays a decreasing trend before the crisis. The adjusted labor share has a mean value of 0.73, maximum value of 0.83, and minimum value of 0.62. The adjusted labor share grew positively during the crisis period, with the average adjusted labor share being 0.62 percentage points per annum. The data clearly indicate that the financial crisis seems not to have caused any adverse shocks for the labor

[12] Adjustment 1 is computed as the ratio of the sum of shares in GDP of the compensation of employees and the share of UIE to one minus the share in GDP of indirect taxes and subsidies, and provision for consumption of fixed capital. Since this adjustment counts the share of UIE as labor income, the labor share found in this adjustment has a mean of 0.800, declining from 0.898 to 0.691. Adjustment 2 is computed as the ratio of the share of compensation of employees in GDP to one minus the share of UIE and minus the share of indirect taxes, subsidies, and provision for consumption of fixed capital. Because UIE is treated as a composite of income and profit rates, the labor share in Adjustment 2 should be lower than that of Adjustment 1. We find that Adjustment 2 has a mean of 0.652, declining from 0.757 to 0.557.

share. Even though the nominal output sharply dropped during the crisis, the total wage bill was relatively stable during the period considered.

Figure 5: Adjusted Labor Share



Source: Authors' Calculation. Data from NESDB.

4.2. Measuring Economic Contribution from Migrant Workers.

We can estimate migrant contributions to the Thai economy by using a basic labor market equilibrium model. Figure 3 below expresses a general labor-market approach with negative slope of labor demand (L_d)[13]. Assuming a classical assumption of full employment, labor supply is assumed fixed by its labor force (L_s).[14] At the initial equilibrium with no migrants, the intersection between labor supply and labor demand yields an equilibrium wage of *w*. At this equilibrium wage *w*, area B+D measures labor income in terms of wage earning, while area A measures income to capital owners and land owners.

[13] Theoretically, labor demand is so called the "Marginal Revenue Product of labor", which is the product of the marginal product of labor and the economy's price level.
[14] This assumption is different from Martin (2007)'s where Martin assumes upward sloping labor supply. According to Bryant and Rukumnuaykit (2007), the labor supply for Thais seemed to adjust to immigration through wage rather than through labor supply, which corresponded more to the Classical assumption.

An in-flow of migrants to Thailand increased labor supply. This expansion in labor supply shifts the labor supply curve to the right by exactly the amount of migrant workers, resulting in lower wages and higher national income assuming that the demand curve is downward sloping. Suppose these migrant workers shifts the labor supply curve to the right from L_s to L_s', resulting in the new equilibrium wage at *w*', the surpluses to capital (and land owners) and workers will change. Rectangle B measures previously existed surplus in the receiving economy that is now transferred from native workers to owners of capital and land. When the labor supply shifts to L_s', the economic expansion results in an increase in labor income by rectangle E and a gain to capital and land owners by triangle C. Since the increase in labor income E will be received by migrants, the net gain to the receiving country's economy is measured by only the triangle C, which is the net increase in the returns to capital and land.[15]

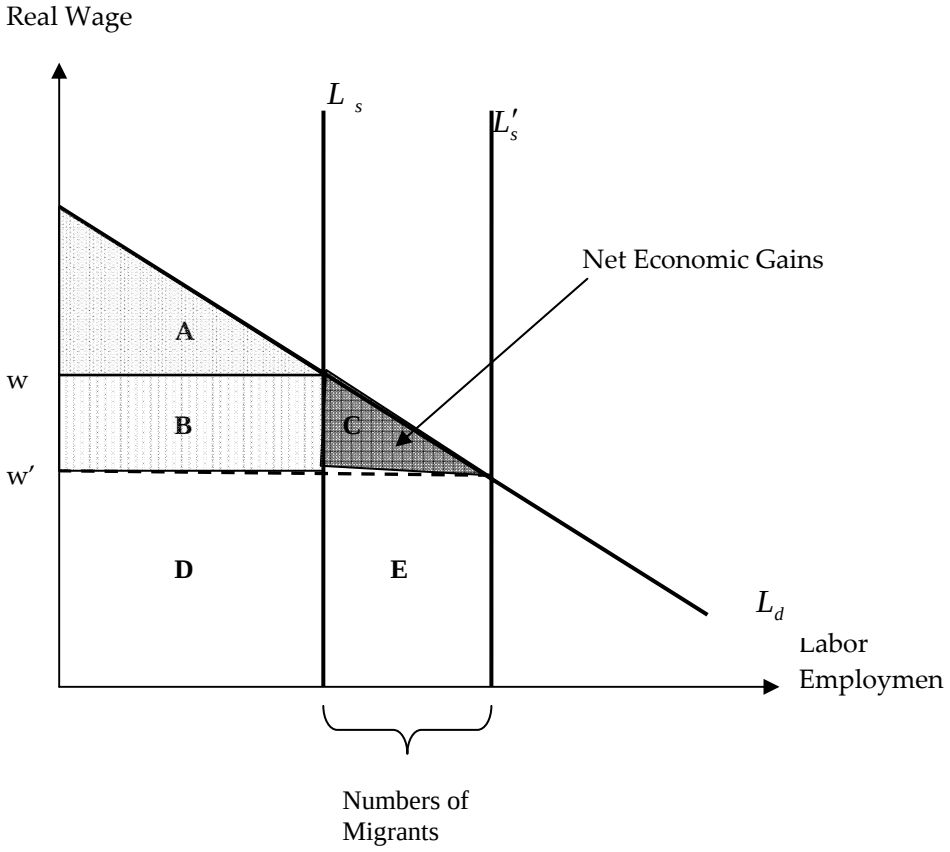
To calculate the size of triangle **C**, the net gains of labor from migrant workers as the ratio of national income, we need to calculate three parameters, 1) the wage decrease due to a percentage point increase of migrants ($\frac{\Delta w}{w}$), 2) the share of migrant worker to the labor force ($\frac{M}{L}$), and 3) the labor share of national income ($\frac{wL}{VA} = s_L$), using the following formula:

$$\frac{Net\ Gains}{National\ Income} = \frac{1}{2} x \frac{\Delta w}{w} x \frac{M}{L} x \frac{wL}{VA}$$

These calculations can be made for the entire economy or for particular sectors in which migrants are concentrated. However, due to the limitation of labor market data by sectoral differentials, especially the lack of data on the number of migrants in each sector, this paper will focus on the entire economy.

Figure 6: Labor Market Outcome from Migration.

[15] If the labor demand curve is horizontal, meaning that wages did not fall as employment expanded, migrants would receive all the gain from their employment in wages and there is no economic benefit. However, over a longer time frame the economy will grow as a result of higher demand from a bigger labor force. Employers will create more jobs and new business will be formed. In this case, labor demand curve will shift out.



Based on the result found by Bryant and Rukumnuaykit (2007), we assume a constant of 0.023 percent of wage depression from a percentage increase of migrant workers during 1995-2005. The share of migrant workers to labor force is computed for the 1995-2005 period, when data are available. From Table 1, one can observe that the total number of migrants has risen while the number of registered migrants has fluctuated. The share of migrants registered was 67 percent in 2000 and 85 percent in 2003. The share of migrant to labor force fluctuated around 2-3 percent during the period of 1995-2003, and recently increased to around 4-5 percent in 2005.

Table 8: Foreign Workers in Thailand, Labor Force, and Migrant to Labor Force Ratio.

Year	*Total Migration* [a] *(Thousands)*	*Labor Force* [b] *(Thousands)*	*Migrant to Labor Force Ratio* [c]
1995	700	33,002	0.021
1996	718	32,750	0.022
1997	961	33,561	0.029
1998	987	33,353	0.030
1999	664	33,210	0.020

2000	850	33,973	0.025
2001	968	33,813	0.029
2002	1,000	34,262	0.029
2003	999	34,902	0.029
2004	1,513	36,131	0.042
2005	1,773	36,370	0.049

Source: [a] Martin (2007), Table 2, [b] Labor Force Survey, [c] Authors' calculation.

From the result found in Table 9, using adjusted labor share, a 0.023 percent reduction of wage deteriorated earnings of Thai workers (Area B) around 1.6 percent of the real national income, or around 505 million baht.[16] On the other hand, this lower wage was beneficial to the Thai owners of non-labor input (let's say 'the capital and land owner'). These capital owners received more capital share (Area B+C) by the average of 0.04 percent of real national income per year (1,265 million baht per year). ***The capital gains from migrant workers show an increasing trend from around 0.03 percent of the real national income (880 million baht) in 1995 to around 0.055 percent of the real national income (2,039 million baht) in 2005. From these numbers, we can then compute the net contribution from migrant workers to the entire Thai economy. Using the adjusted labor share, the net contribution of migrant workers (Area C) is on average 0.023 percent of the real national income per year, or around 760 million baht per year.***[17]

[16] To compute losses of labor income (Area B) as ratio of real income, we use the formula:

$$\frac{Labor\ Losses}{National\ Income} = \frac{\Delta w}{w} x \frac{wL}{VA}$$

[17] Since unregistered migrant workers are not accounted, an economic contribution computed here might be slightly underestimated.

Table 9: Loss of Labor Income, Capital Gain, and Net Economic Gain from Migrants (Percentage of Real Output)

Year	*Labor Losses*	*Capital Gains*	*Net Economic Gains*	*Labor Losses*	*Capital Gains*	*Net Economic Gains*
	Raw Labor Share			**Adjusted Labor Share**		
1995	-0.009	0.018	0.009	-0.015	0.030	0.015
1996	-0.009	0.019	0.010	-0.014	0.030	0.016
1997	-0.009	0.023	0.013	-0.015	0.036	0.021
1998	-0.010	0.024	0.014	-0.016	0.039	0.023
1999	-0.010	0.019	0.010	-0.017	0.034	0.017
2000	-0.010	0.022	0.012	-0.017	0.038	0.021
2001	-0.010	0.023	0.014	-0.017	0.040	0.024
2002	-0.009	0.023	0.014	-0.016	0.040	0.024
2003	-0.009	0.022	0.013	-0.016	0.039	0.023
2004	-0.009	0.029	0.019	-0.016	0.051	0.034
2005	-0.009	0.031	0.022	-0.016	0.055	0.039

Table 10: Loss of Labor Income, Capital Gain, and Net Economic Gain from Migrants (Real Value of Millions of Baht)

Year	*Real GDP in 1988*					
	Labor Losses	**Capital Gains**	**Net Economic Gains**	**Labor Losses**	**Capital Gains**	**Net Economic Gains**
	Raw Labor Share			**Adjusted Labor Share**		
1995	-256	527	271	-427	880	453
1996	-277	581	304	-447	937	490
1997	-284	692	408	-459	1,116	657
1998	-262	651	388	-435	1,079	644
1999	-278	555	278	-493	985	492
2000	-288	648	360	-506	1,139	633
2001	-293	713	420	-511	1,242	731
2002	-305	751	446	-525	1,291	766
2003	-316	770	453	-558	1,357	799
2004	-338	1,045	707	-597	1,846	1,249
2005	-337	1,159	822	-593	2,039	1,446
Total	-3236	8091	4856	-5550	13910	8360

4.3. Measuring Cost Competitiveness from Migrant Workers.

One of the arguments advocating the inflow of migrant workers in receiving countries is that migration generally increases unskilled labor supply, which in turn keeps the overall wage low in the receiving country. For example, Kura, et al (2004) analyzed a case of shrimp production sector in Thailand. Migrant workers were concentrated in the shrimp-peeling jobs. Thailand was among the world leading shrimp exporters with a market share of 16 percent, surpassing any other countries in the region. Kura, et al (2004) claimed that the competitiveness of the shrimp industry in Thailand came from the fact that shrimp producers continued to pay low wage to workers, which was facilitated by their hiring a number of migrant workers.

The mainstream international trade theory posits that a country will have a comparative advantage if it produces goods and services based on what it possess in relative abundance. Having more of a given input implies that the price of such a factor will be low relative to other more scarce inputs. Goods produced with relatively cheaper inputs have lower prices and therefore are more competitive than the same goods produced elsewhere where such factors are more expensive. However, in practice, policies that improve the welfare of workers imply higher labor costs and lower price competitiveness. Since labor is usually the largest component of production costs, a sustained rise (decline) in unit labor costs will cause an upward (downward) shift in a firm's average and marginal cost curves, which in turn determines cost competitiveness.[18]

In addition, in a world of high capital mobility, the level of cost-competitiveness may be viewed as a determinant of the magnitude of foreign direct investment flows. Footloose industries tend to locate where unit costs of non-tradable inputs, particularly labor, are low. Costs of tradable inputs such as raw materials and capital are then likely to be approximately equalized internationally. The most

[18] Let's denote the Total Cost is the total expenditure of two production factors $TC = w_n..L + r_n..K$. The marginal cost with respected to L is referred to $MC = \frac{\Delta TC}{\Delta Q} = \frac{\Delta TC}{\Delta L}.\frac{\Delta L}{\Delta Q} = w_n.\frac{1}{MP_L} = ulcs$, where Q is denoted a form of production function $Q = F(K,L)$ and MP_L is the marginal product of labor. This is implied that *ulcs* is an interpretation of the firm's marginal cost and average cost curve

important non-tradable input is labor. Thus, the unit labor cost (i.e., labor cost per unit of output) could be a particularly useful indicator of cost competitiveness.[19]

This section discusses competitiveness in Thailand, measured by the unit labor costs (ulcs), which is affected by migrant workers. Algebraically, ulcs are calculated as the ratio of the nominal wage rate (dollars per worker) to labor productivity, which is the quantity of output produced per worker. In aggregated terms, the real value added can be used as a proxy for quantity of output. The unit labor costs rise when compensation and benefits rise faster than labor productivity. The lower is the ulcs' value, the more competitive is the country's manufacturing sector.[20] The competitiveness of the manufacturing sector is often measured by (i) a low level of nominal wages and (ii) an increase in labor productivity. Since these two variables are given in nominal terms, the ulcs are adjusted using GDP or some price deflator to obtain ulcs in real terms (denoted ulc1).[21] With an upward trend, ulc1 increased from 0.60 in 1980 to 1.34 in 2005. Since the labor share declined, an upward trend of ulc1 must be due to an increase in the GDP deflator. The increases in the GDP deflator should therefore indicate a loss of Thailand's cost competitiveness during the period studied.

Nevertheless, the higher ulc1 may not imply a loss in competitiveness for Thailand when considering intercountry comparisons. By doing intercountry comparisons, the ulcs should be constructed considering not only the ratio of the nominal wage rate to labor productivity, but also the transformation of the local currency (Baht) to the numeraire currency (e.g., US dollar). The definition of ulcs can be further refined using a series of adjustments such as the price purchasing parity (PPP) exchange rate (the price-adjustment effect), which is the ratio of the nominal

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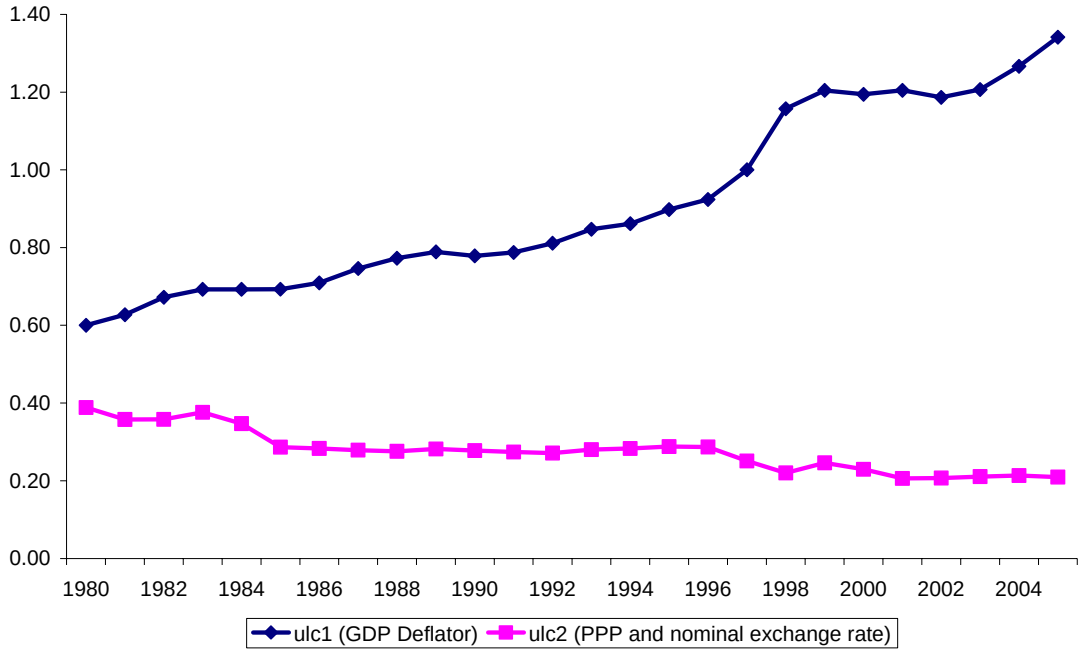
[19] See, for example, Turner and Golub (1997), Felipe and Sapin (2004), and Pholphirul (2005).

[20] The unit labor cost in the manufacturing sector is a key determinant of competitiveness in traded goods markets. By focusing on costs rather than prices, using the unit labor costs takes away some endogeneity of the CPI and export price measures. Golub and Ceglowski (2002) mention some limitations of the unit labor costs. First, data on labor productivity and labor compensation, which are needed to compute the unit labor costs, are not always reliable and available on a timely basis. Second, these measures are not widely available for service sectors, which constitute a growing component of international trade. Third, labor productivity may exhibit short-run counter-cyclical movements. Fourth, the unit labor costs ignore other costs of production (e.g., intermediate goods, non-labor taxes, and capital costs).

[21] $ulc1 = \dfrac{w_n}{\left(\dfrac{VA_n}{P}\right)\Big/L} = \left(\dfrac{w_n L}{VA_n}\right)P$, where P is the GDP deflator.

exchange rate (Baht/US dollar) in PPP terms. Thus, it implies that Thailand gained competitiveness not only because of low wages and high labor productivity, but also because of the depreciation of the Baht against the US dollar.[22] The ulc2 may be defined as pure ulc effects with price-adjustment. It displays a downward trend, which indicates greater competitiveness of the Thai economy compared to other countries during the two decades concerned, which has a mean of 0.28, maximum value of 0.39, and minimum value of 0.21.

Figure 7: Unit Labor Costs (ulcs)



To measure the competitiveness of the Thai economy from migrant workers, we use the survey results from the Asian Research Center for Migration (ARCM, 2000) of Chulalongkorn University, which indicate that migrants should be paid, on average, around 70 percent as much as payments to Thai workers.[23] The ARCM

[22] To compare the computed unit labor costs among countries, the use of purchasing power parities (PPPs) is adopted. We then multiply the ulcs (after the PPP adjustment) by the current nominal exchange rate in order to convert the local-currency price (Baht) to a numeraire currency, generally the US dollar). This is called the "price adjustment effect." So $ulc2 = \left(\frac{W_n L}{VA_n}\right)\left(\frac{ppp}{ER}\right)$, where $\left(\frac{W_n L}{VA_n}\right)$ is the pure ulc effect and $\left(\frac{ppp}{ER}\right)$ is the price adjustment effect.

[23] the Asian Research Center for Migration (ARCM) of Chulalongkorn University collected information from almost 6,000 employers in 50 provinces (ARCM, 2000)

researchers interviewed employers what wages Thai and migrant workers should be paid. Employers reported that Thais should be paid at least 157 Baht ($3.65) a day and migrants at least 124 Baht ($2.88) a day, or about 80 percent as much as what should be paid for Thai workers. Policymakers in the 50 provinces, in which the survey was conducted, also thought that migrants should be paid 80 percent as much as Thais workers, and the Thai workers interviewed thought that migrants should be paid 74 percent as much as they received. Even the migrants interviewed thought that Thais should be paid more than they received. Based on this result, since migrants and native workers are not treated equally in terms of wage compensation, we assume that migrant workers will be paid around 70 percent as much as the Thai workers. Lower the wage of migrant workers therefore implies a higher competitiveness of the country.

Table 11: Appropriate Daily Wages Comparison between Migrant Workers and Thai Workers (Baht/day in 2000)

	Migrants	**Thais**	**Thai Premium**
Employers	124	157	1.27
Employees	136	185	1.36
Policy Makers	118	146	1.24
Other Thai Workers	128	178	1.39
Migrants	118	147	1.25
Average	**125**	**163**	1.30

Source: ARCM (2000)

However, since the majority of migrant workers are unskilled, we simulate their contribution by assuming that migrant workers are 25, 50, 75 and 100 percent as productive as Thai workers. To measure the effect on the competitiveness of the Thai economy from migrant workers, the unit labor costs (ulc1 and ulc2) are calculated using the weighted average of the unit labor cost with migrant workers and the unit labor cost without migrant workers.[24]

[24] For example, ulc1 with migrant workers that are 25 percent as productive as Thai workers = $\left(\frac{M}{L}\right)\left(\frac{0.7w_nL}{0.25VA_n}\right)P+\left(1-\frac{M}{L}\right)\left(\frac{w_nL}{VA_n}\right)P$ and ulc2 with migrant workers that are 25 percent as productive as Thai workers = $\left(\frac{M}{L}\right)\left(\frac{0.7w_nL}{0.25VA_n}\right)\left(\frac{PPP}{ER}\right)+\left(1-\frac{M}{L}\right)\left(\frac{w_nL}{VA_n}\right)\left(\frac{PPP}{ER}\right)$

Even though migrant workers receive lower wages comparing to Thai workers, it does not necessarily mean that employing migrant workers will enhance the country's cost competitiveness. Results found from Table 12 and Table 13 show that, ***based on different level of assumed productivity of migrant workers, the unit labor cost (both ulc1 and ulc2) is lower only when migrant workers are as about productive as Thai workers.*** In this case, employing migrant workers increases the country's cost competitiveness.

Table 12: Unit Labor Cost (GDP Deflator) with Migrant Workers.

Year	*No Migration*	*25% Productivity*	*50% Productivity*	*75% Productivity*	*100% Productivity*
1995	0.898	0.932	0.906	0.897	0.892
1996	0.924	0.960	0.933	0.923	0.918
1997	1.000	1.052	1.014	0.999	0.991
1998	1.157	1.219	1.174	1.156	1.147
1999	1.204	1.248	1.215	1.203	1.197
2000	1.194	1.248	1.208	1.193	1.185
2001	1.205	1.267	1.221	1.203	1.194
2002	1.186	1.249	1.203	1.185	1.176
2003	1.207	1.269	1.223	1.205	1.196
2004	1.266	1.362	1.293	1.264	1.250
2005	1.341	1.459	1.375	1.338	1.321

Source: Authors' Calculation

Table 13: Unit Labor Cost (PPP and nominal exchange rate) with Migrant Workers.

Year	*No Migration*	*25% Productivity*	*50% Productivity*	*75% Productivity*	*100% Productivity*
1995	0.288	0.299	0.291	0.288	0.286
1996	0.287	0.298	0.290	0.287	0.285
1997	0.251	0.264	0.254	0.250	0.249
1998	0.220	0.232	0.223	0.220	0.218
1999	0.246	0.255	0.249	0.246	0.245
2000	0.230	0.240	0.232	0.229	0.228
2001	0.206	0.217	0.209	0.206	0.204
2002	0.207	0.218	0.210	0.207	0.205
2003	0.211	0.222	0.214	0.210	0.209
2004	0.213	0.230	0.218	0.213	0.211
2005	0.210	0.228	0.215	0.209	0.206

Source: Authors' Calculation

Figure 8: Unit Labor Cost (GDP Deflator) with Migrant Workers by different Productivity

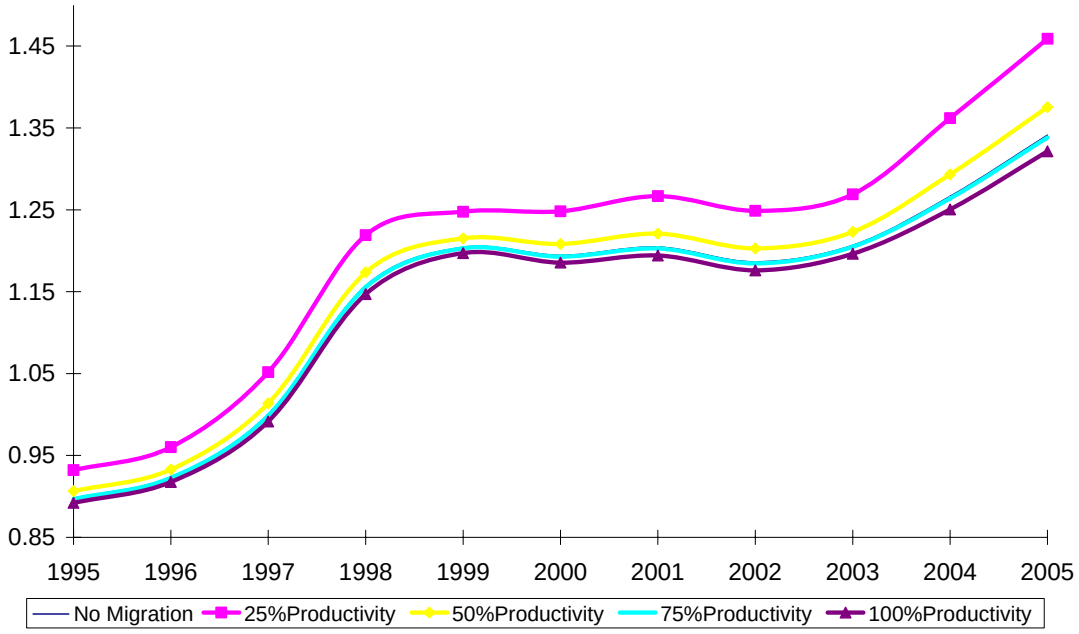
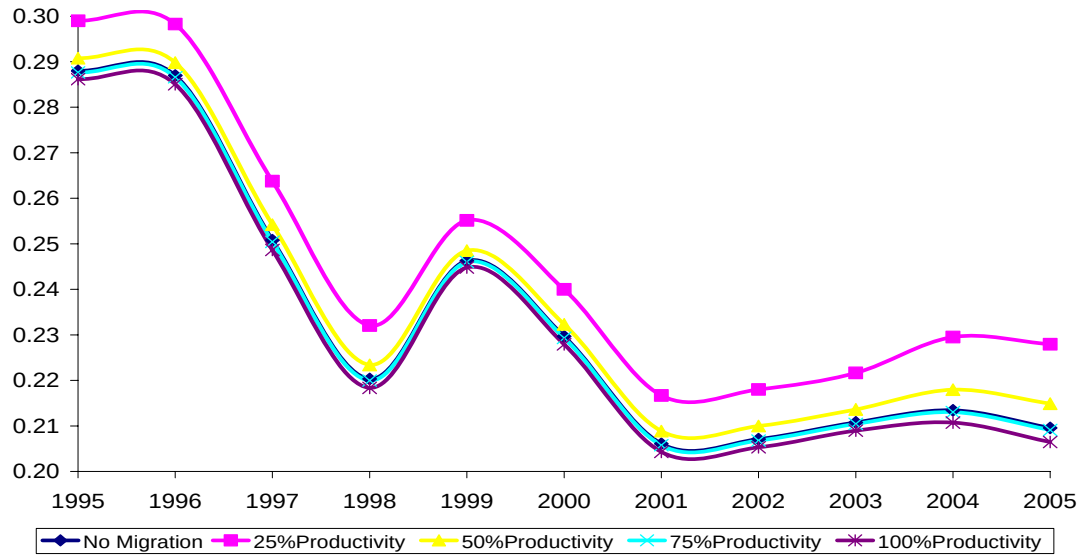


Figure 9: Unit Labor Cost (PPP and nominal exchange rate) with Migrant Workers by different Productivity



V. Future Trend of Migrant Workers

It should be noted that migrant workers in Thailand include both skilled and unskilled workers. Skilled immigrants enter the Thai labor market legally. Approximately 70 percent of them are professional managers and technicians who thus receive industrial promotion privileges under the Board of Investment. Thailand has a relatively large proportion of foreign skilled workers compared to other ASEAN countries as a consequence of a decades-long policy of adopting an FDI-based growth strategy. Thailand's Ministry of Labor indicated that there were nearly 60,000 skilled foreign workers in the country, the majority being from Japan (23.3 percent), followed by the U.K. (8.8 percent), India (8.8 percent), China (7.8 percent), the U.S.A. (7.0 percent), Taiwan (6.3 percent), and others (38.0 percent). Positions filled are generally managers and executives, professionals, and technicians.

Table 6: Number of Foreign Skilled Workers in Thailand (2002)

Country	***Number***	***Occupation***	***Number***
Japan	13,675	Management and Executive	33,638
U.K.	5,148	Professionals	11,832
India	5,135	Technicians	3,775
China	4,593	Craftsmen	1,037
U.S.A.	4,099	Clerks	743
Taiwan	3,681	Plant/machine operators	426
Others	22,266	Others	7,146
Total	58,597	Total	58,597

Source: Department of Employment, Ministry of Labor

In addition, trade liberalization increases job opportunities not only for Thai workers, but also for international irregular migrant workers residing in Thailand. These migrants are mostly unskilled immigrants working mostly in the informal sector, who generate high economic benefit but also social costs for the Thai economy.

Thailand hosts foreign unskilled immigrants from neighboring countries such as Myanmar (80 percent), Cambodia (8 percent), and the Lao PDR (7 percent), many of whom are working and/or residing in Thailand illegally. As trade liberalization under AFTA becomes more effective, it is likely that intra-ASEAN trade will grow dramatically, not only in goods but also in services. The targeted priority areas of the trade in services include financial services, maritime transport, air transport, telecommunications, tourism, construction, and business services.

In addition, the appearance of small and medium enterprises (SMEs) will definitely play a vital role in economic development. Therefore, with free trade of both goods and services resulting from a closer economic integration, the elimination of tariff and non-tariff barriers is expected not only to expand regional trade dramatically, but also to enhance industrial competitiveness of ASEAN member countries in a cost-efficient way. One such way is to rely on foreign immigrants, who are paid lower wages. However, labor migration is expected to generate one of the most salient social and political problems. Labor migration today, in the case of Thailand, occurs mostly, for both legal and irregular migrants, as “cross border” movement. Cross-border migration is often pictured as a threat to national security and a cause of many social problems in the country of destination. Such problems arise from the causes of migration itself, namely, unequal socioeconomic development levels among countries which result in the arrival of job seeking migrants from lower per capita income countries (economic refugees) as well as disequilibrium of demand and supply of the labor market.

Once irregular migrants have arrived in the target country, there are costs imposed to the host countries, for example, the costs borne by public hospitals to care for these migrant workers. Irregular migrants are also often blamed for causing the crime rates to rise in the host countries. The trend toward economic and trade liberalization and thus toward inward flows of population movement among the ASEAN countries is believed to become an even more significant problem in the future. With an inventory of the current problems, national policies to deal with trade liberalization should also include migration policies that identify what role ASEAN can be expected to play in helping manage the irregular migrants in the host countries.

Within AFTA, it is likely that some industries will prosper and grow and thus absorb some of the unemployed in their own countries, thereby reducing the number of migrants seeking job opportunities in the countries. Similar to Malaysia and Singapore, with the growth prospect from economic liberalization, Thailand will possibly face a more serious shortage of skilled manpower in, for example, accounting, engineering, and information technology (IT). At the same time, the immigration to Thailand of unskilled workers from Thailand's neighboring countries should also be expected to increase as demand grows, especially in labor-intensive industries such as agriculture and fisheries, as well as in domestic employment (gardeners, maids, nannies, etc.). The "new" ASEAN member countries, which share borders with Thailand (the Lao PDR, Cambodia, and Myanmar), will most likely contribute to the influx of illegal and unskilled labor in the future as AFTA's schemes are fully implemented at the same level as they have been for the original ASEAN-6.[25] With costs and benefits from these irregular migrant workers in mind, Policymakers in Thailand should carefully manage these natural flows of migrants in a way that maximizes the benefits to Thailand and minimize the costs to both unskilled Thai workers and the migrants themselves.

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[25] However, Thailand's policy towards illegal workers from its neighboring countries has been ambivalent. Foreign workers are required to register and are allowed to work in selected occupations by resolutions of the Cabinet. Most unskilled foreign workers are found mainly in agriculture (especially on rubber and sugarcane plantations and on fruits and vegetables farms), fisheries and fish processing, construction, manufacture (especially in textiles and garment manufacturing), and housemaids. More detailed studies can be found in Martin (2004).

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