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Managing integration for better jobs and shared prosperity in the ASEAN Economic Community: The case of Thailand's automotive sector

Kriengkrai Techakanont

December 2014

Regional Office for Asia and the Pacific

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Preface

By 2015, the ASEAN Economic Community (AEC), envisioned as a single common market and production base, will become a reality. This will lead to the freer flow of goods, services, investment capital and skilled labour in the region. Tariff and non-tariff barriers will be reduced, which will have implications for intraregional trade and investment. New opportunities for growth and prosperity are likely to emerge, but the challenge is to ensure that growth is inclusive and prosperity is shared.

Ultimately, the success of ASEAN regional integration will depend on how it affects the labour market and therefore how it improves the quality of life of women and men in the region. To prepare for the impact and find the opportunities to seize, the International Labour Organization initiated with the Asian Development Bank a joint study to examine the impact of the AEC on labour. Findings from the series of studies that were initiated are collected in the 2014 publication *ASEAN Community 2015: Managing integration for better jobs and shared prosperity*. That report highlights the challenges and opportunities that will accompany the AEC, including managing labour migration, boosting productivity and wages and improving job quality. The report offers policy recommendations for creating better jobs and ensuring that the benefits of the AEC are equitably shared among different countries and sectors.

The background papers to the joint publication are available as part of the ILO Asia–Pacific Working Paper Series, which is intended to enhance the body of knowledge, stimulate discussion and encourage knowledge sharing and further research for the promotion of decent work in Asia and the Pacific. This paper by Kriengkrai Techakanont uses Thailand's automotive sector as a case study on managing integration and to examine issues related to industrial and structural changes that will affect the labour market in Thailand after the AEC takes effect in 2015.

The ILO is devoted to advancing opportunities for women and men to obtain decent and productive work. It aims to promote rights at work, encourage decent employment opportunities, enhance social protection and strengthen dialogue in handling work-related issues. As countries in the Asia and the Pacific region continue to recover from the global economic crisis, the ILO's Decent Work Agenda and the Global Jobs Pact provide critical policy frameworks to strengthen the foundations for a more inclusive and sustainable future.

Yoshiteru Uramoto
Assistant Director General and
Regional Director for Asia and the Pacific

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Sukti Dasgupta, Senior Economist and Head of the Regional Economic and Social Analysis Unit, and Makiko Matsumoto, Specialist on Employment, ILO Decent Work Technical Support Team for East and South-East Asia, provided useful assistance and insights to the author, Kriengkrai Techakanont.

Abstract

This paper examines the socio-economic impact of regional integration for Thailand's automotive industry, through evidence-based analysis and projections. The paper discusses issues related to industrial and structural changes that will affect the labour market in Thailand after the ASEAN Economic Community 2015 takes effect. Thailand's key macroeconomic variables in recent years indicate that there exists significant pressure from rising wage rates, tightness in the labour market and sluggish labour productivity. The greater ASEAN Community will enhance connectivity within and beyond the region, which will help Member States become more dynamic and competitive. In terms of the ASEAN automobile industry, production and sales have been expanding, due to economic development and the investment strategy of Japanese carmakers. A higher degree of trade and investment integration will occur after investment, and trade regimes are liberalized. New investment, or the relocation of existing production from high-cost to low-cost production locations will take place; existing supply chains and production networks will need to be adjusted. Skills development and productivity improvements will be critical ingredients for prosperity in the ASEAN Economic Community. Public and private collaboration at both the country and regional levels will be indispensible.

About the author

Kriengkrai Techakanont is Professor of Economics, Faculty of Economics, Thammasat University.

Acronyms

AEC	ASEAN Economic Community
AFTA	ASEAN Free Trade Area
ASA	Association of Southeast Asia
ASEAN	Association of Southeast Asian Nations
CEPT	common effective preferential tariff
CLMV	Cambodia, the Lao People's Democratic Republic, Myanmar and Viet Nam
GDP	gross domestic product
IDE	Institute of Developing Economies
IMV	Toyota International Innovative Multipurpose Vehicles
JETRO	Japan External Trade Organization
MOU	memorandum of understanding
NESDB	National Economic and Social Development Board
NSO	National Statistical Office
R&D	research and development
RCEP	Regional Comprehensive Economic Partnership
SUV	sport utility vehicle
TAPMA	Thai Autoparts Manufacturers Association
THB	Thai baht
TDRI	Thailand Development Research Institute
TMAP-EM	Toyota Motor Asia Pacific Engineering & Manufacturing

1. Introduction

Although the formation of the Association of Southeast Asian Nations (ASEAN) was based on political and security reasons, its economic development agenda has, since its first Summit in 1976, become the hallmark of the forum. Over the past four decades, each ASEAN Member State has achieved a different level of economic development and industrialization. Some have progressed to become high- and middle-income countries, such as Brunei Darussalam, Indonesia, Malaysia, the Philippines, Singapore and Thailand, while others have only recently embarked on the process. Differences in economic development and resource endowment among the Member States open opportunities for growth and prosperity through more intensive regional integration. Among the ten members there exist sufficiently large resources to tap, downstream industries to create, several road networks and infrastructure programmes to build, and intraregional as well as extraregional demand to satisfy.

With the ASEAN Economic Community (AEC) becoming effective by end-2015, its Member States will need to make structural adjustments to benefit from the freer trade, investment and labour mobility that is expected. However, with different economic backgrounds, levels of industrial development and readiness of the existing supply chain status, each country's adjustments will differ from industry to industry, even when operating within the same country context.

The objective of the study reflected in this paper is to consider the socio-economic impact of regional integration through evidence-based analysis and projections in Thailand's automotive industry, which should provide ASEAN Member States with useful insights. The paper addresses issues related to industrial and structural changes that will affect the labour market in Thailand after the AEC 2015 takes effect. Rapid trade and investment expansion should follow when investment and trade regimes are liberalized. There also should be ample opportunities for multinational corporations to exploit the region's comparative advantage. New investment or relocation of existing production from high-cost to low-cost production locations is likely to happen. Existing supply chains or production networks may need to be adjusted. This may be achieved in varying time scales, reflecting the nature of each industry and the particular location context.

The paper presents a compilation and analysis of data from secondary sources, a desk review of relevant literature and current research and interviews with key tripartite stakeholders. Thematic areas that are likely to affect ASEAN countries are emphasized along with strategy options for policy-makers to promote inclusive and sustainable growth.

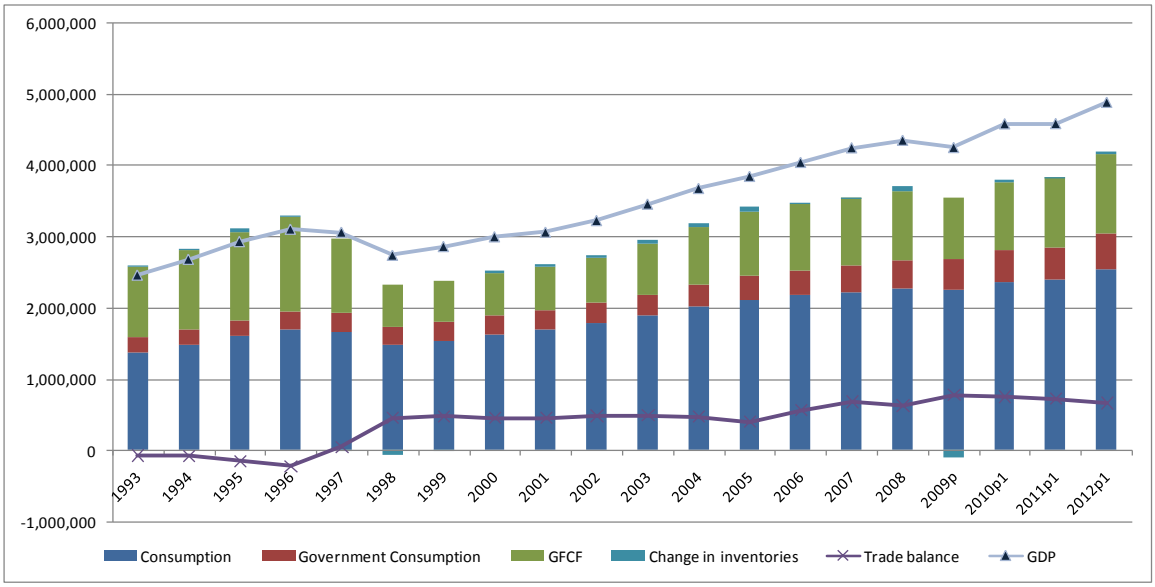
The organization of this paper is as follows: After the introduction, section 2 provides background on the basic context of the Thai economy and considers such aspects as macroeconomic variables, trade, inflation, labour force, unemployment, the poverty line and the movement of foreign workers; section 3 outlines the Thai historical engagement with ASEAN; section 4 present analyses on the impact of ASEAN integration on Thailand's automotive industry, supply chain and labour market; and section 5 concludes with policy recommendations.

2. Country context

2.1 Macroeconomic situation

Originally an agrarian economy, Thailand has developed into a middle-income economy. From 1993 to 2012, the Thai economy gradually expanded at an average growth rate of around 3.4 per cent per year. Real gross domestic product (GDP) shrank twice, in 1997–98 and 2008, due to the Asian financial crisis that began in 1997 and the subprime mortgage crisis in 2008. The main components of Thailand's GDP are private consumption and investment and the international sector. In particular, international trade has become increasingly important to the Thai economy. The share of total trade (exports plus imports) within GDP has increased, from 79 per cent in 1993 to 117 per cent in 2012 (figures 1 and 2).

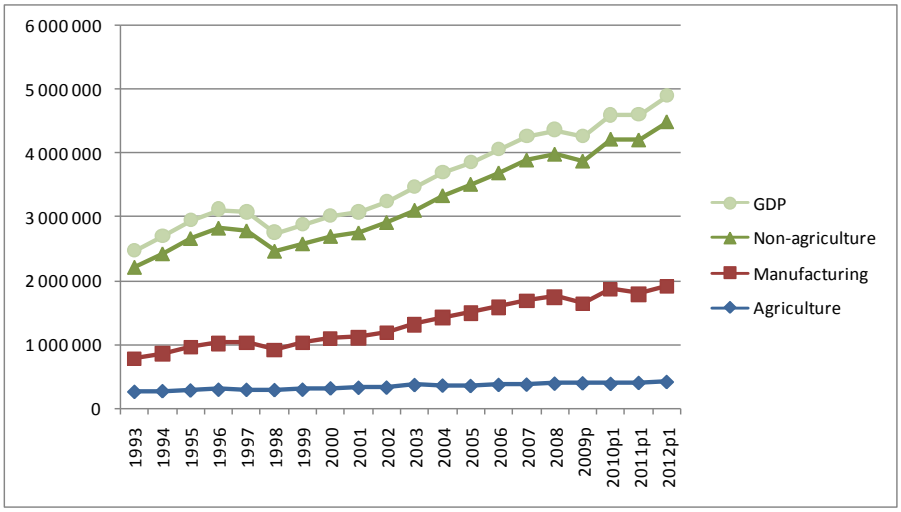
Figure 1. Gross domestic product, 1993–2012 (constant prices 1988)



Note: GFCF = Gross fixed capital formation.
Source: National Economic and Social Development Board (NESDB), www.nesdb.go.th [accessed 31 Oct. 2013].

The share of the agriculture sector to GDP has declined, from 10.3 per cent in 1993 to 8.4 per cent in 2012, while the share of the manufacturing sector (part of the non-agriculture sector) has become more important to the Thai economy. The share of manufacturing to GDP has increased, from 31.6 per cent in 1993 to 39.1 per cent in 2012.

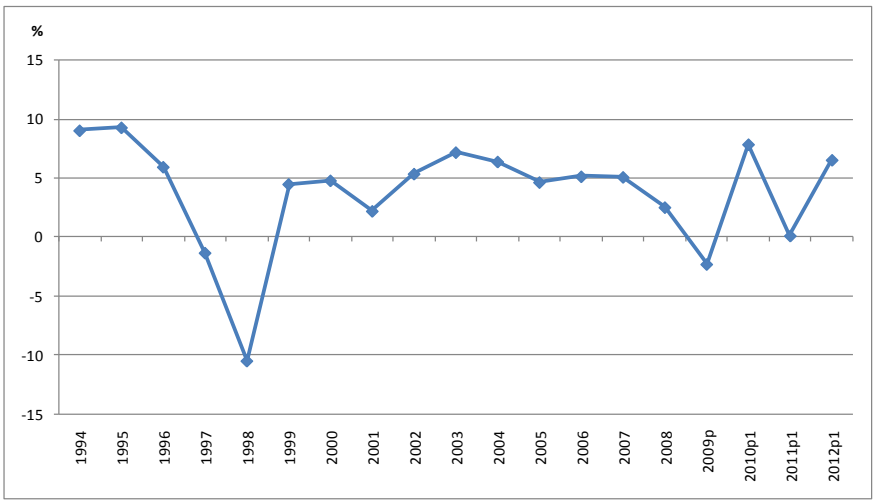
Figure 2. GDP, agriculture and non-agriculture sectors, 1993–2012p1



Source: NESDB, www.nesdb.go.th [accessed 31 Oct. 2013].

Over the past five years, the Thai economy has been affected by the crises in the United States and the European Union. The consequent slowdown in the global economy caused Thai GDP to decline slightly. Thailand was able to recover from the global financial crisis through a series of fiscal stimulus packages and monetary-easing policies. However, in 2011 the economy suffered in the wake of the tsunami that hit Japan and the crippling floods in central Thailand (including Bangkok) in the second half of 2011. The floods caused extensive damage to Thailand's manufacturing and agriculture sectors. As a consequence, real GDP growth fell from 7.8 per cent in 2010 to 0.1 per cent in 2011. In 2012, Thai real GDP jumped up to 6.4 per cent (figure 3).

Figure 3. Real GDP growth rate, 1994–2012p1

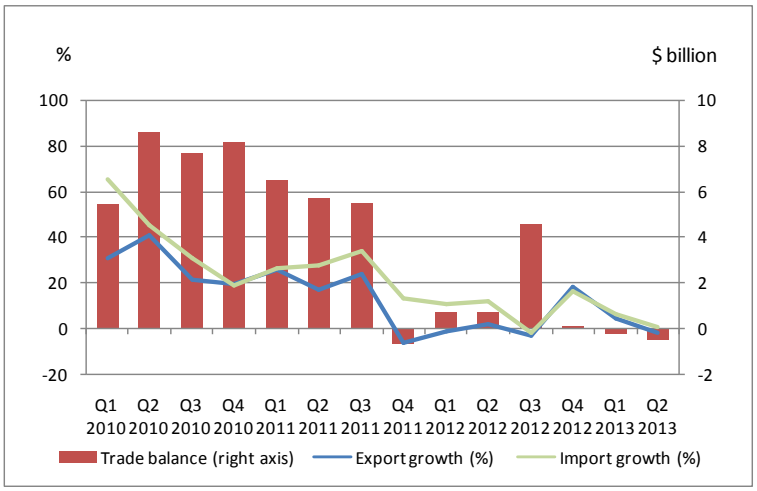


Source: NESDB, www.nesdb.go.th [accessed 31 Oct. 2013].

According to the Bank of Thailand's October 2013 *Monetary Policy Report*, the global economic trend is positive and should gradually recover. However, due to a slowdown in private consumption in almost all sectors,[1] political instability and government expenditure in fiscal year 2013 being less than planned, economic growth will be lower than expected. The Bank of Thailand has reduced its estimated growth in GDP (at 1988 prices), from 5.1 per cent in Q1/2013 to 3.7 per cent in Q4/2013. In addition, due to protests against the Government in Q4/2013, it is likely that the growth rate will be adjusted to around 3 per cent for 2013.

According to trade statistics from the Ministry of Commerce, in 2013 (January to October), key export products were motor vehicles, electronics, computer parts, jewellery, refined fuels, rubber and chemical products. However, some sectors showed a decline in exports, including integrated circuits and rice. The main import products were crude oil, machinery and equipment, gold, steel, automotive parts and electronics and electrical parts. Additionally, Thailand experienced a deficit in its trade balance as well as its current account (figures 4 and 5).

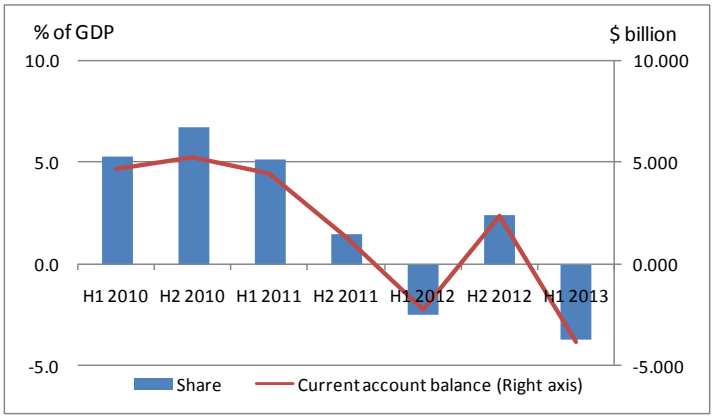
Figure 4. Trade indicators, 2010–Q2/2013



Source: Bank of Thailand, www.bot.go.th [accessed 30 Nov. 2013].

[1] Private consumption expenditure decelerated due to the end of the tax rebate for first-time buyers of automobiles in 2012. This will lead to lower sales of automobiles in 2013.

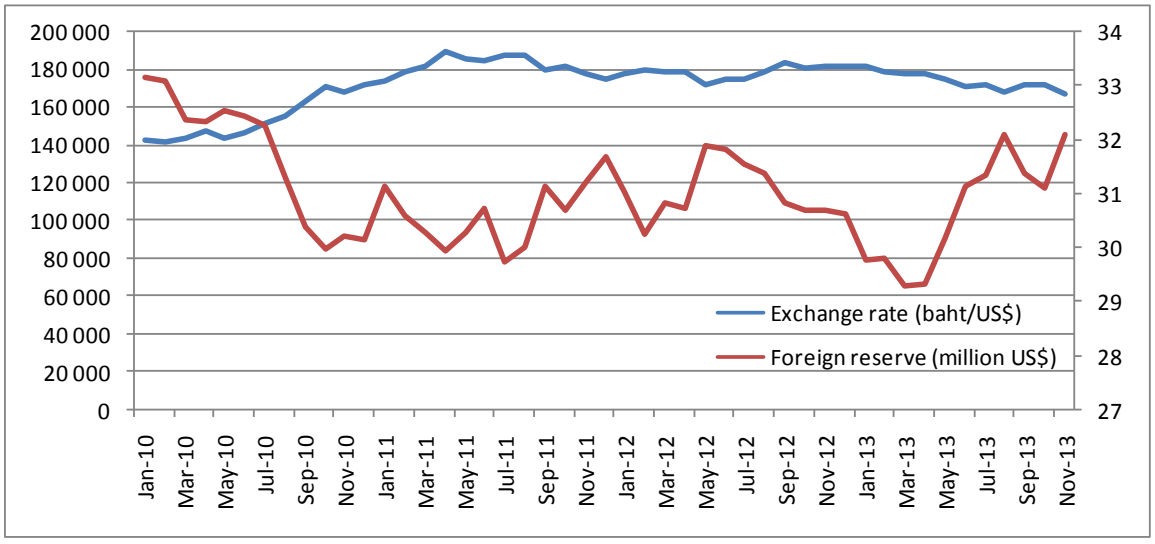
Figure 5. Current account balance



Source: Bank of Thailand, www.bot.go.th [accessed 31 Oct. 2013].

Capital inflows from the second half of 2012 to the first quarter of 2013 caused the Thai baht (THB) to appreciate. The trend reversed to favour outflows in the second quarter due to the anticipation of US Federal Reserve Bank tapering the quantitative easing stimulus package. The Thai baht weakened to THB32.1 per dollar, with foreign reserves at about $159 billion in November (figure 6). At this level, the reserves covered about seven months of imported goods and services.

Figure 6. Foreign reserves and exchange rate, 2010–November 2013



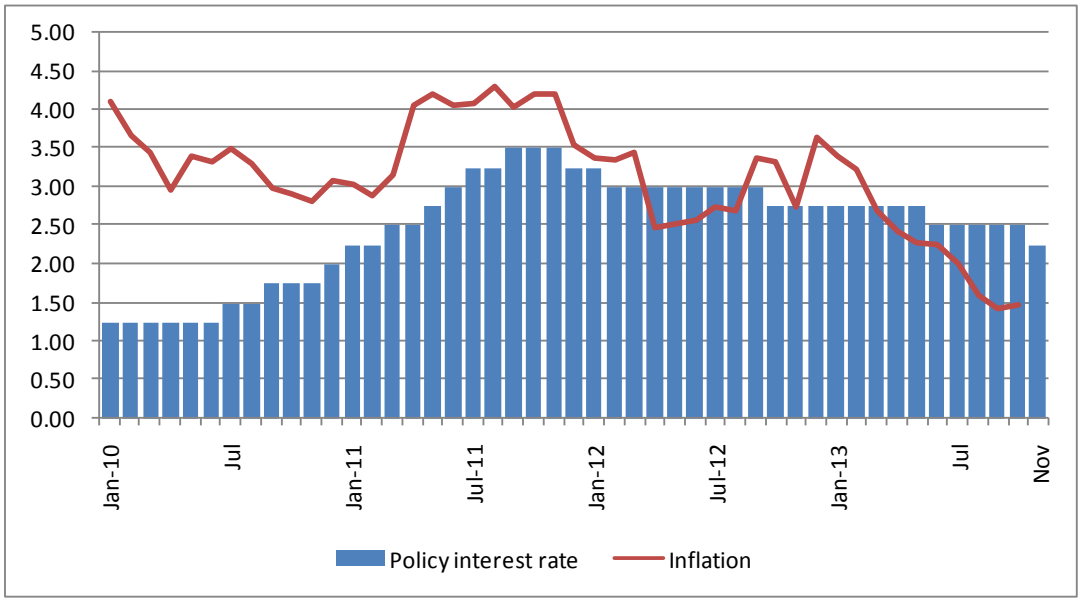
Source: Bank of Thailand, www.bot.go.th [accessed 30 Nov. 2013].

Inflation has decelerated, from 3.6 per cent in late 2012 to 1.4 per cent in October 2013, reflecting a slowdown in domestic demand and low global commodity prices. The Bank of Thailand estimated that the headline inflation rate in 2013 was around 2.2 per cent and core inflation around 1 per cent (figure 7). Low inflation, sluggish domestic demand and fragile investment confidence in light of perceived political

instability prompted the Bank of Thailand to lower its policy interest rate in November by 25 basis points, to 2.25 per cent. This represented the fourth rate cut since 2012. The four main commercial banks reduced lending rates in response, by 0.125 to 0.25 per cent at the end of November, after the latest rate cut.

Although the Thai Government announced a series of large-scale infrastructure projects and spending plans to support private consumption and stimulate domestic demand, it seems that the budget will not be spent as anticipated. Short-term prospects have deteriorated since the first quarter, and the outlook seems uncertain. In addition, the effect of a national minimum wage rise will force the private sector to adjust their production methods to rely less on labour and either move towards more capital-intensive strategies or relocate to other countries with lower labour costs. Private investment is expected to remain low due to the lack of a clear public infrastructure investment programme. The current plan outlines the intention to invest around $67 million in transport infrastructure through 2020. If this plan is clarified, prospects in 2014 will be brighter. Given that the Government dissolved parliament in December 2013, the prospect of economic growth is uncertain.

Figure 7. Headline inflation and policy interest rates, 2010–13 (November)



Source: Bank of Thailand, www.bot.go.th [accessed 30 Nov. 2013].

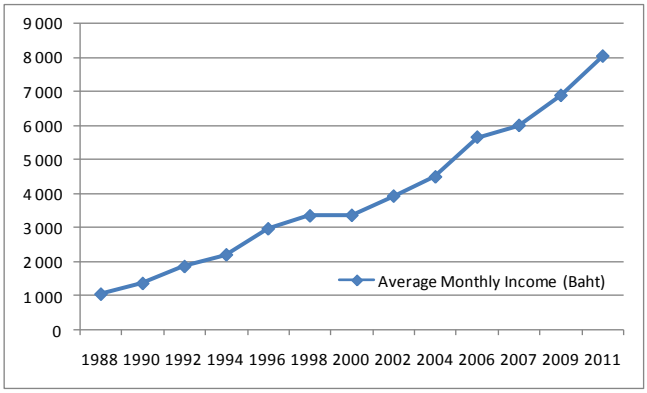
2.2 Household income, poverty and inequality trends

Every country wants to have strong economic growth. However, it is important to be concerned with the quality of growth as well. If economic growth is achieved yet income inequality worsens, the results might not be deemed a success. It is best if a country can reduce the income gap while maintaining economic growth.

From 1993 to 2012, the Thai economy expanded at an average of 3.48 per cent per annum. Average monthly income, in nominal terms, increased from THB1,066 to THB8,029 per month from 1988 to 2011

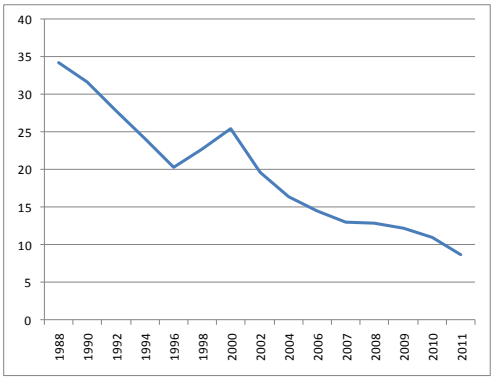
(Figure 8). The poverty headcount (measured as consumption expenditure below the poverty line) in the country has reduced significantly, from 34.2 million in 1988 to 8.7 million in 2011 (figure 9). The ratio of people living below the poverty line reduced from 65.3 per cent to 13.2 per cent over the same period. As shown in figure 10, the chronic poverty problem that was more severe in the past for all areas outside Bangkok has tended to improve, especially after the economy recovered from the financial crisis that began in 1997. The ratio of people living below the poverty line in Bangkok increased in 2011, which may indicate labour mobility from the outlying provinces to Bangkok for job opportunities.

Figure 8. Average monthly income, 1988–2011



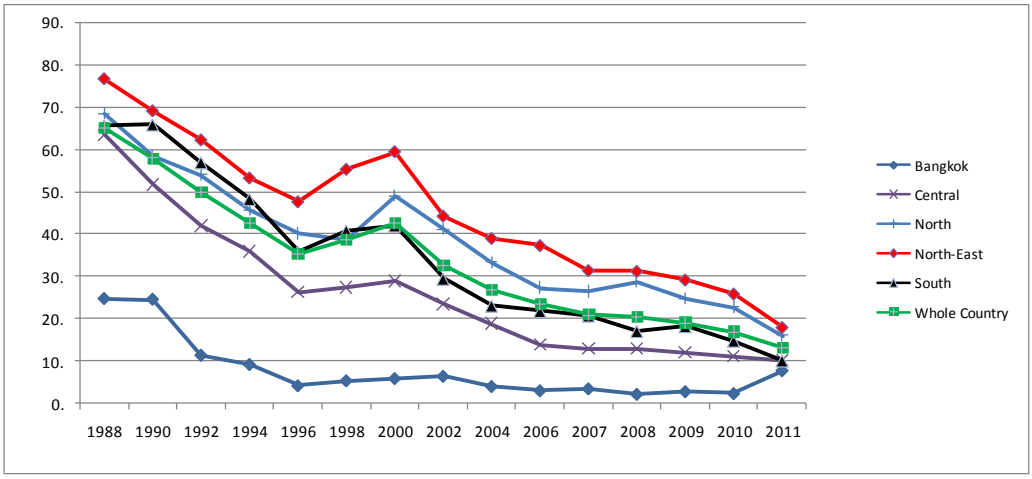
Source: National Statistical Office (NSO), based on NESDB online database, www.nesdb.go.th [accessed 31 Oct. 2013].

Figure 9. Number of people living below the poverty line, by consumption expenditure, 1988–2011



Note: The poverty line is calculated from expenditure at the subsistence level of consumption.
Source: NSO, based on NESDB online database, www.nesdb.go.th [accessed 31 Oct. 2013].

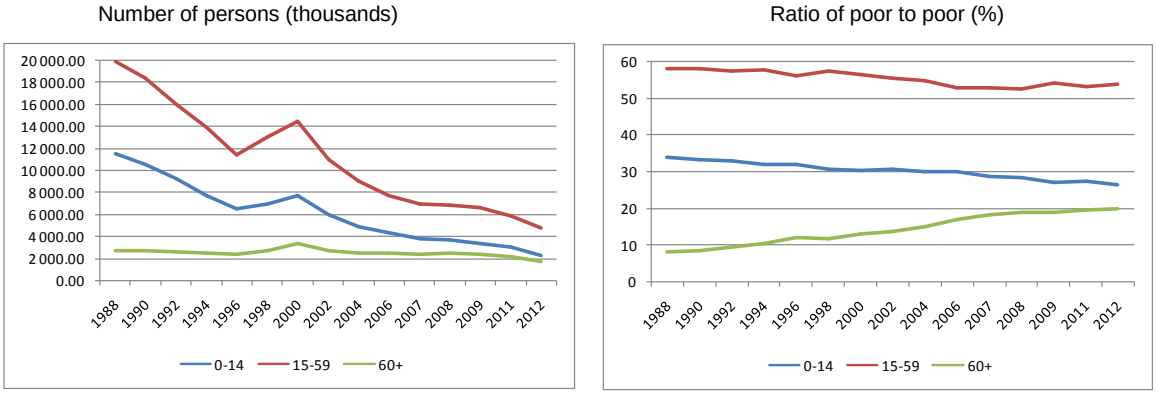
Figure 10. Percentage of people living below the poverty line, by consumption expenditure, 1988–2011



Note: The ratio is calculated by the number of people having consumption expenditure lower than the poverty line divided by total population and multiplied by 100.
Source: NSO, based on NESDB online database, www.nesdb.go.th [accessed 31 Oct. 2013].

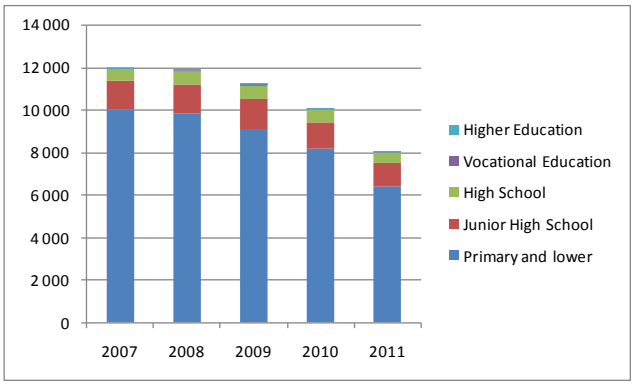
Although the total number of poor people has decreased over time, the number of elderly poor has remained unchanged, resulting in a ratio increase (figure 11). Based on data from the National Statistical Office (NSO), the majority of poor people fall in the group having a low level of education (figure 12). It seems that poverty in Thailand has a positive relationship with age and a negative relationship with educational attainment. Two challenges for the Government are to prepare for an ageing economy and to improve human capital through a more efficient education system.

Figure 11. Number and ratio of people living below the poverty line, by age



Source: NSO, based on NESDB online database, www.nesdb.go.th [accessed 31 Oct. 2013].

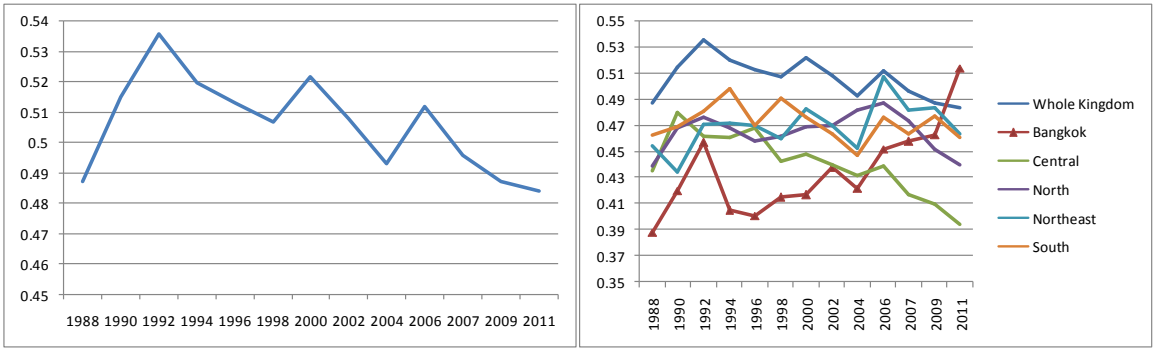
Figure 12. Number of people living below the poverty line, by education level ('000 persons)



Source: NSO, based on NESDB online database, www.nesdb.go.th [accessed 31 Oct. 2013].

The findings presented thus far may suggest that the economic growth over the past two decades has been successful in terms of regional development and mitigation of the poverty problem. Yet, it is important to gauge income distribution. The Thai economy experienced a rapid expansion and inequality tended to be more divided, as reflected in the increase of the Gini coefficient, from 0.487 in 1988 to 0.536 in 1992. Subsequently, the index reduced gradually to 0.487 in 2009 and then to 0.484 in 2011. Over the 24-year period, the Gini coefficient returned to its original status, reflecting the fact that that income inequality is a difficult problem to solve (figure 13).[2] Additionally, between 1992 and 2011, the Gini coefficient improved in almost all regions except the North-East and Bangkok.

Figure 13. Gini coefficient, 1988–2011



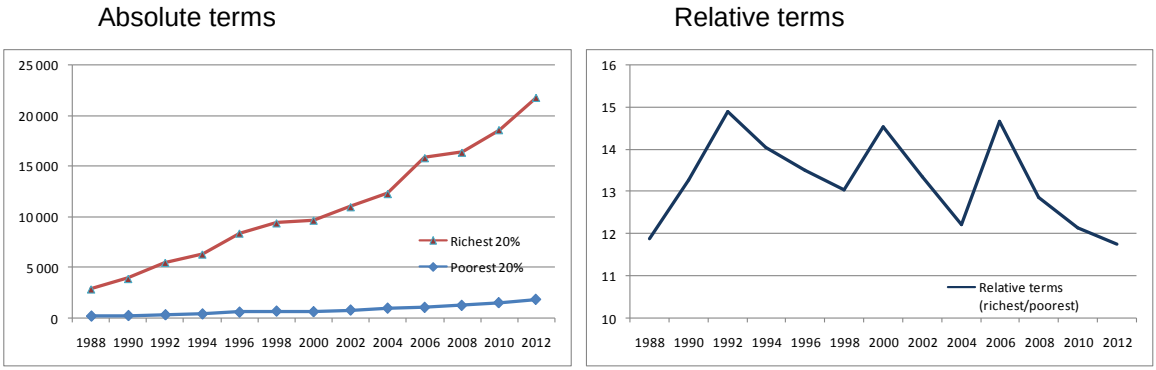
Source: NSO, based on NESDB online database, www.nesdb.go.th [accessed 31 Oct. 2013].

Another dimension of income inequality can be measured by the absolute and relative terms of the income gap between the rich and the poor. Based on the National Economic and Social Development Board online database, the inequality problem has not substantially improved. According to Pootrakool (2013), the group comprising the richest 20 per cent of the population captures more than half of the national income. As shown in figure 14, the income gap between the top 20 per cent richest households and the bottom 20 per cent poorest households has been widening in absolute terms. Between 1988 and 2011, the income of the head of the household in the poorest 20 per cent of the population increased by

[2] Pootrakool (2013) found that the index computing from consumption expenditure shows more improvement. The index started from 0.439 in 1988 and increased to 0.450 in 1992, then gradually reduced to 0.375 in 2011.

THB1,365 per month (from THB244 in 1988 to THB1,609 per month in 2011), while that of the richest 20 per cent increased by THB18,902 per month (from THB2,897 to THB21,799 per month). This clearly indicates more serious income inequality in absolute terms between the poorest and the richest households over a 23-year period of the country's economic development. In relative terms, the ratio of income in the richest 20 per cent of households, compared with the poorest 20 per cent, increased from 11.9 per cent in 1988 to 15 per cent in 1992, before reducing to 11.8 per cent in 2012. Policy-makers should be cautious of the reality that economic development over the past two decades has not been successful in terms of reducing income inequality.

Figure 14. Income gap between richest and poorest households, 1988–2012



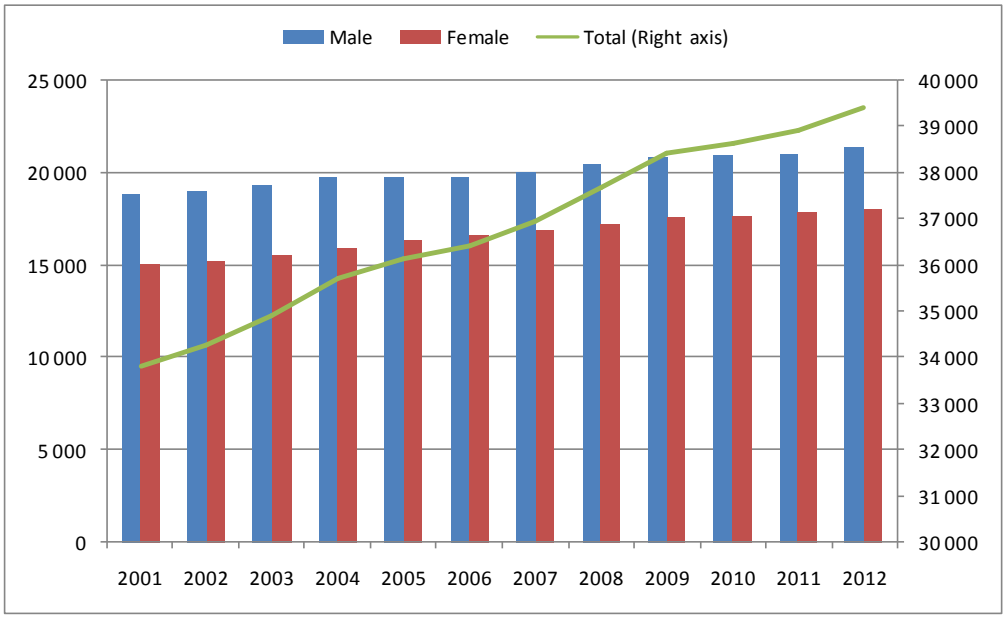
Source: NSO, based on NESDB online database, www.nesdb.go.th [accessed 31 Oct. 2013].

2.3 Labour market situation

By the end of 2012, Thailand had a total population of around 64.5 million people (31.7 million of them male, 32.7 million of them female) and an adult population of 43.2 million people.[3] The population growth rate was 0.6 per cent. Between 2001 and 2012, the labour force increased, from 33.8 million to 39.3 million workers. As shown in figure 15, the male labour force was larger than the female labour force in that same time period, with the labour force participation rate remaining stable, at about 80 per cent for males and 64 per cent for females.

[3] Data from Department of Provincial Administration, Ministry of Interior, http://service.nso.go.th/nso/thailand/dataFile/01/J01W/J01W/th/0.htm [accessed 5 Dec. 2013].

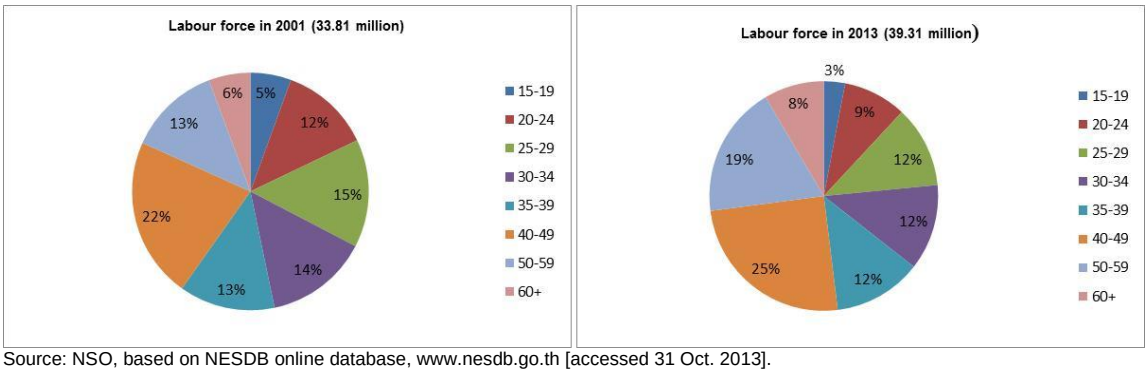
Figure 15. Labour force, by sex ('000 persons)



Source: NSO, based on NESDB online database, www.nesdb.go.th [accessed 31 Oct. 2013].

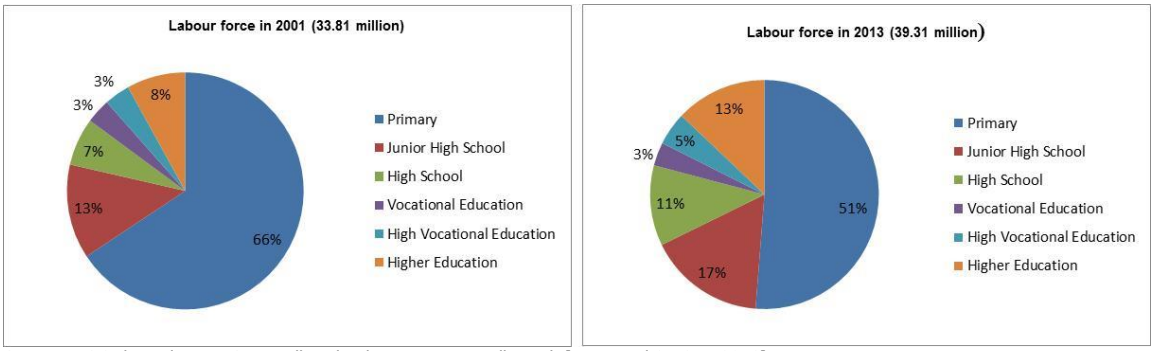
The structure of the labour force in Thailand has changed in terms of age and education, as shown in figures16 and 17. In 2001, about 59 per cent of the labour force was younger than 40, but that ratio reduced to 48 per cent in 2013. In terms of education level, the structure of the labour force also has changed. In 2001, about 66 per cent of the labour force had completed only primary education or less; the ratio reduced to 51 per cent in 2013. This trend will continue, with the average age of the Thai labour force rising and the completed level of education rising. Between 2001 and 2013, the population aged 60 or older increased from 5.8 million to 8.5 million people, while the elderly labour force increased from 2 million to 3 million over the same period (figure 18). Thailand's increasing proportion of elderly labour force over the next ten years will have implications for both the public and private sectors. It is likely that this elderly workforce will gradually have a more important role within the economy.

Figure 16. Thai labour force, by age, 2001 and 2013 ('000 persons)



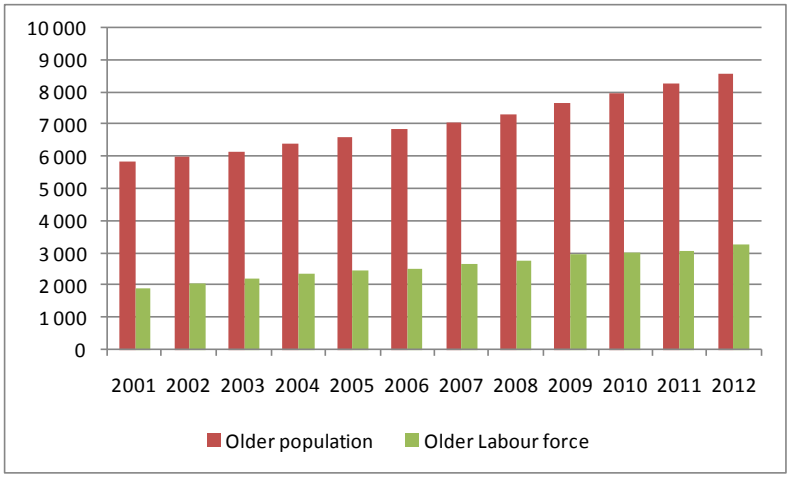
Source: NSO, based on NESDB online database, www.nesdb.go.th [accessed 31 Oct. 2013].

Figure 17. Thai labour force, by education, 2001–13



Source: NSO, based on NESDB online database, www.nesdb.go.th [accessed 31 Oct. 2013].

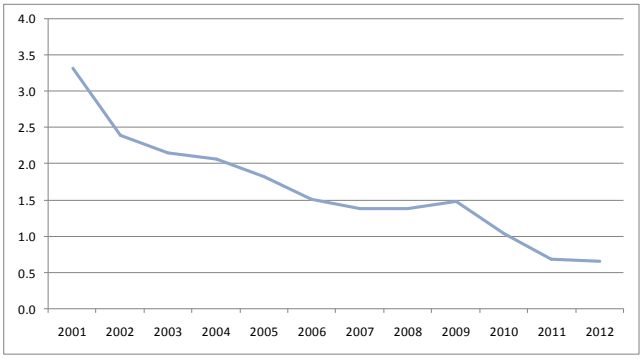
Figure 18. Older labour force, 2001–12 ('000 persons aged 60 or older)



Source: NSO, based on NESDB online database, www.nesdb.go.th [accessed 31 Oct. 2013].

As noted, after recovering from the Asian financial crisis that began in 1997, the Thai economy expanded continuously. In 2001, unemployment stood at about 3.3 per cent; that rate has reduced to 0.6–0.7 per cent in recent years (figure 19). At less than 1 per cent, the unemployment rate is far below the natural unemployment rate of 3 per cent. This clearly reflects a shortage in the labour market. The labour force participation rate in Thailand had been stable, at about 72 per cent, over the past decade. According to the International Labour Organization's LABORSTA database, the labour force in Thailand will grow by 7 per cent between 2010 and 2020.

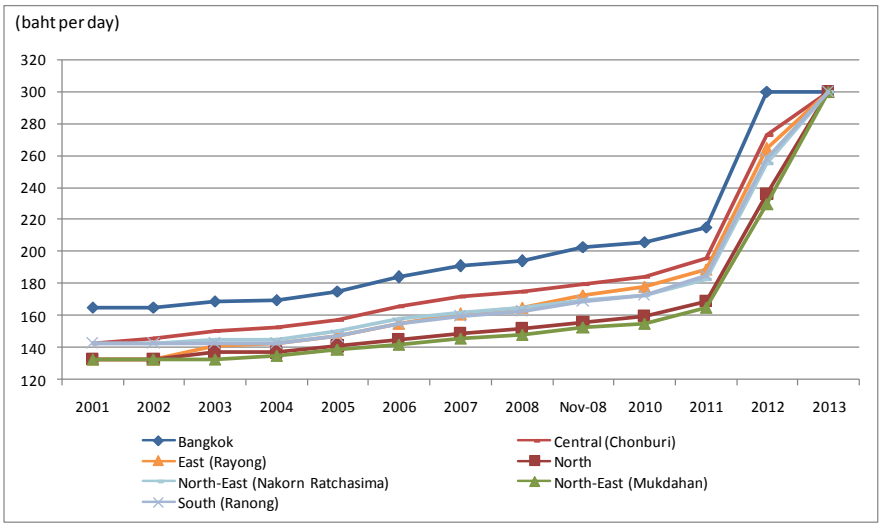
Figure 19. Unemployment rate, 2001–12



Source: NSO, based on NESDB online database, www.nesdb.go.th [accessed 31 Oct. 2013].

In view of such tightness in the labour market, it is not surprising that the minimum wage rate has increased over time. Before 2013, the minimum wage rate differed among provinces and regions. The minimum wage rate was highest in Bangkok and its vicinities and lower in provinces in the Central, South, North and North-East regions. As shown in figure 20, the minimum wage surged in 2012 and remained at THB300 per day in 2013. The effect of the wage increase policy was very strong, especially for provinces located in the northern and north-eastern regions.

Figure 20. Minimum wage, 2001–13



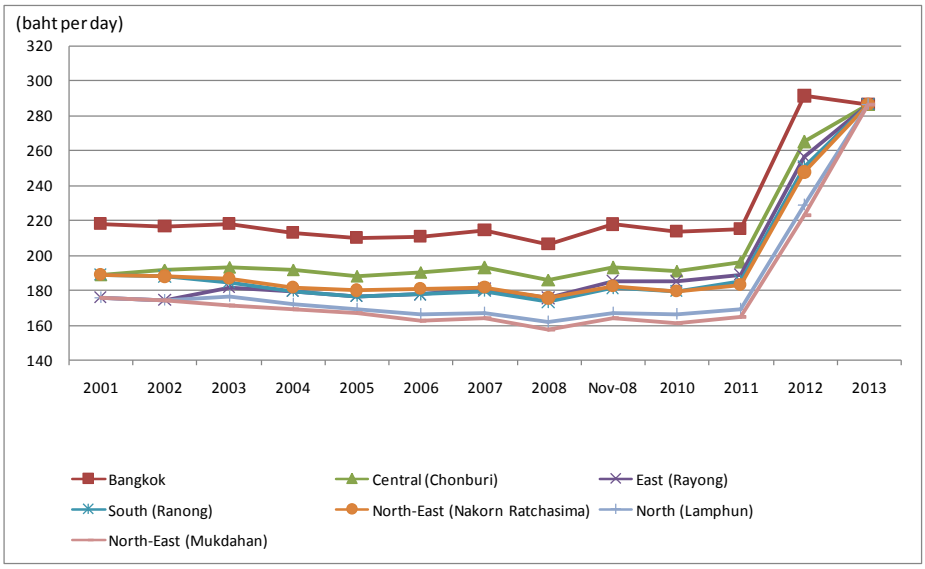
Source: NSO, based on NESDB online database, www.nesdb.go.th accessed 31 Oct. 2013].

Differences in minimum wage among provinces are due to the differences in economic conditions and the cost of living. Comparing minimum wage rates in 2013 with 2011, the rate increased by 39 per cent for Bangkok and vicinity, by 53–58 per cent for the Eastern Seaboard area, 62 per cent for the South, 77 per cent in the North and 63–81 per cent for the North-East. Regional development was promoted because firms were more willing to locate far from Bangkok to access lower labour costs, which then

compensated for higher transportation costs for both bringing in raw materials and shipping finished products to the market. A uniform minimum wage rate may have negative effects on regional development. Some factories may shut down because they are unable to afford higher labour costs along with higher transportation expenses.[4]

The nominal minimum wage rate tended to increase while the real wage rate was quite stable over the past decade. Before 2013, a wage differential among regions was prevalent. A comparison of the real minimum wage rates in 2013 with 2011 reflects an increase by 33 per cent for Bangkok and vicinity, 46–52 per cent for the Eastern Seaboard area, 55 per cent for the South, 70 per cent in the North and 57–74 per cent for the North-East (figure 21). The pattern is similar to the nominal minimum wage rate increase.

Figure 21. Real minimum wage rate 2001–13 (2011 = 100)

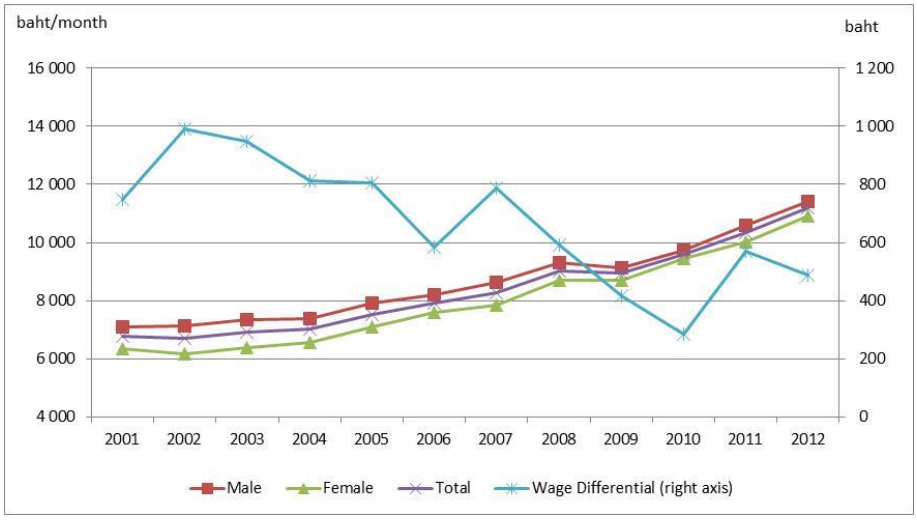


Note: Calculated by nominal minimum wage rate (from NSO) and divided by consumer price index (compiled by the Bank of Thailand, www.bot.th [accessed 31 Oct. 2013]), see Annex II.

Additionally, the Labour Force Survey findings for 2001–12 reveal that the average wage rate has increased. The male average wage rate increased from THB7,095 to THB11,104 per month, while the female rate increased from THB6,347 to THB10,916 per month. Nonetheless, a wage differential between males and females continues. Male workers earned THB988 more than female workers in 2002, and the gap reduced to THB286 in 2010 before widening again in 2012 to THB562 per month (figure 22).

[4] An example is Ecco (Thailand), Co. Ltd, a footwear company located in Pichit Province that decided to shut down its operation because of the uniform minimum wage policy. Minimum wage increased by 83 per cent, from THB163–THB170 per day in 2011 to THB300 a day in 2013. The company will shift all production to another plant located in Ayutthaya Province, within 100 kilometres of Bangkok. According to a media report, the company compensated the laid-off workers in line with the legal requirement and is open to rehiring those who want to move to Ayutthaya (see www.manager.co.th/Local/ViewNews.aspx?NewsID=9560000140720 [accessed 30 Nov. 2013]).

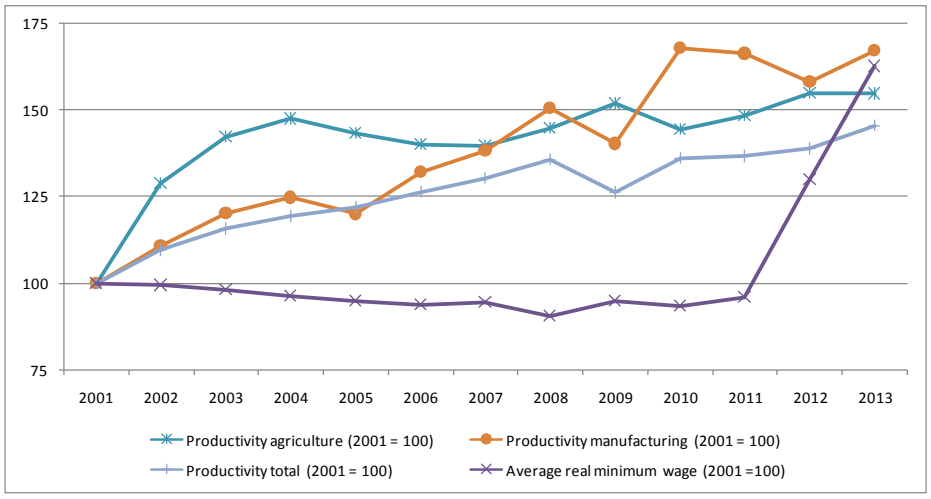
Figure 22. Average wages and wage differentials, 2001–12 (THB per month)



Note: Data for wage rate was taken from Q3 of each year.
Source: NSO, based on NESDB online database, www.nesdb.go.th [accessed 31Oct. 2013].

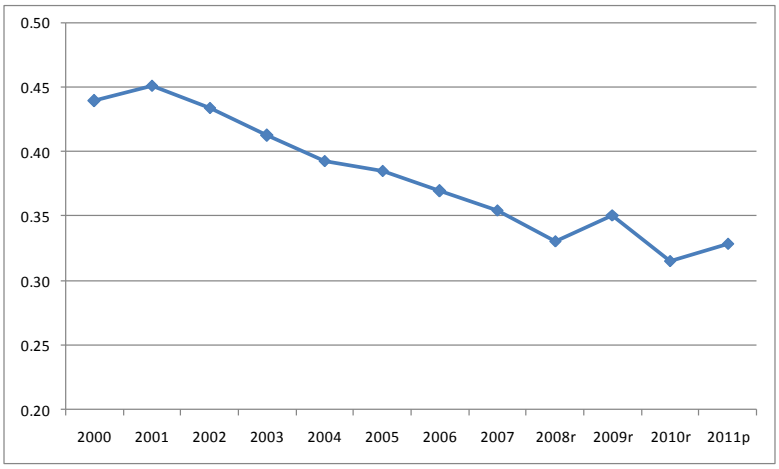
Labour productivity per hour (2001 = 100) on average grew by 3 per cent from 2001 to 2013. Taking only agriculture and manufacturing for comparison, labour productivity in both sectors was higher than the overall rate and grew at an average rate of 3.4 per cent and 4 per cent respectively. After taking the average of real minimum wage rate into consideration, the real wage rate declined from 2001 to 2010 and surged sharply in 2011. From 2011 to 2013, productivity increased about 2 per cent, while the average real wage rate increased 20 per cent (figure 23). Although the share of labour in the manufacturing sector had been declining over the past decade, it started to increase in 2011 (figure 24). The increase in the minimum wage rate indicates that competitiveness in labour-intensive industries will erode.

Figure 23. Labour productivity and average real minimum wage (2001 = 100)



Note: Labour productivity data was taken from Q1 in each year, except Q2/2001. The minimum wage is the average wage rate across all provinces, adjusted against the consumer price index.
Source: Labour productivity data was sourced from the Bank of Thailand, www.bot.or.th [accessed 6 Dec. 2013], and the average minimum wage rate was calculated using figures available at the NESDB, www.nesdb.go.th [accessed 31 Oct. 2013].

Figure 24. Share of labour in the manufacturing sector, 2000–11p

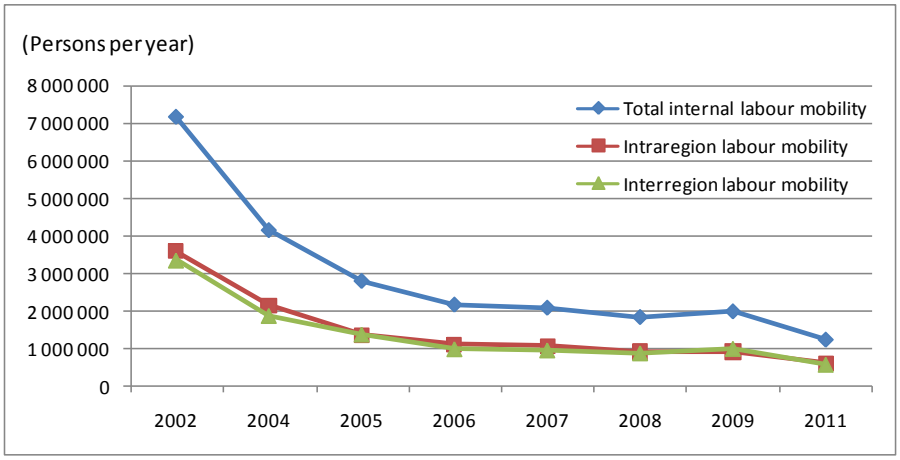


Source: SNA, 2011 rev.

Higher wages will certainly reduce employment in certain sectors, especially labour-intensive employment and jobs relying on low wage rates. Given the large overall demand for labour, these workers should be absorbed into other sectors. Firms need to adjust their production technology to increase labour productivity to offset the higher cost of labour. Upgrading is essential to remain competitive. Employers must invest in their human resources development, while labour needs to improve their human capital, through both formal education and training.

When the minimum wage rate in Central Thailand was higher than it was elsewhere in the country, internal labour mobility was a normal phenomenon. In 2002, more than seven million persons relocated (both intraregional and interregional movement), but the number declined sharply to about 1.2 million persons in 2011 (Figure 25). According to Labour Force Survey findings, only 20 per cent of labour mobility related to changing jobs.

Figure 25. Flow of internal labour mobility, 2002–11



Source: NSO, based on NESDB online database, www.nesdb.go.th [accessed 31 Oct. 2013].

Cross-border labour migration has had an important role in the Thai economy since the 1980s, especially in sectors that recruit relatively few Thai workers, such as construction, fisheries, processed food and garments. Myanmar workers constitute the largest group, although many of them are unregistered. The registration of foreign workers began in 1992 for Myanmar workers in certain areas. Since then, there have been policy initiatives between Thailand and neighbouring countries to improve the registering of workers, including memoranda of understanding (MOU) on cross-border, unskilled labour mobility.[5] An estimated two million migrant workers enter Thailand yearly from neighbouring countries (Myanmar, the Lao People's Democratic Republic and Cambodia) through registered and unregistered channels. Based on data from the Office of Foreign Workers Administration, the stock of foreign workers was about 1.15 million persons in 2012, which was a reduction from 1.7 million in 2011 (Table 1).

Table 1. Stock of foreign workers in Thailand, 2001–12

	2001	2005	2009	2010	2011	2012
Registered foreign workers	**50 844**	**101 111**	**210 745**	**344 686**	**446 785**	**940 531**
Permanent	14 423	14 423	14 423	14 423	983	983
Temporary	26 127	65 809	68 399	70 449	73 841	82 833
Temporary (MOU import workers)	0	0	27 447	26 525	69 712	93 265
Temporary (MOU nationality verification)	0	0	77 914	210 044	276 432	733 603
BOI	10 294	20 879	22 562	23 245	25 817	29 847
Unregistered foreign workers	**572 224**	**745 549**	**1 334 157**	**955 595**	**1 272 415**	**219 345**
Minorities	3 975	40 256	19 775	23 340	24 351	25 732
Three nationalities under Cabinet-Council's Conclusion (Cambodia, Lao PDR and Myanmar)	568 249	705 293	1 314 382	932 255	1 248 064	193 613
Total	**623 068**	**846 660**	**1 544 902**	**1 300 281**	**1 719 200**	**1 159 876**

Source: Office of Foreign Workers Administration, Ministry of Labour

3. Thailand's historical engagement with ASEAN

Continuous cooperation among the ASEAN Member States for more than four decades has gradually removed barriers and enhanced common interests and encouraged peace and prosperity for the people who live there. ASEAN is now at a crossroads, poised to move towards becoming a single market and production base, which will provide increased opportunities for Member States to prosper. In 2015, the AEC, a single and common market for ASEAN, will become a reality for its 600 million people. This will lead to the free flow of goods, services, investment capital and skilled labour among the Member States. This section elaborates on Thailand's important role in this process.

Thailand's engagement with ASEAN dates back to the establishment of the Association of Southeast Asia (ASA), which was created by Malaysia, the Philippines and Thailand in 1961. In August 1967, the leaders of Indonesia, Malaysia, the Philippines, Singapore and Thailand discussed and signed a document that

[5] Thailand signed an MOU with the Lao People's Democratic Republic in 2002, with Cambodia in 2003 (Ministry of Labour) and with Myanmar in 2003 (with the Ministry of Foreign Affairs) (Kohpaiboon and Kulthanavit, 2010).

came to be known as the ASEAN Declaration.[6]According to the Declaration, ASEAN represents "the collective will of the nations of Southeast Asia to bind themselves together in friendship and cooperation and, through joint efforts and sacrifices, secure for their peoples and for posterity the blessings of peace, freedom and prosperity."[7] The Declaration outlines the aims and purposes of ASEAN:

1. To promote economic growth, social progress and cultural development.
2. To promote regional peace and stability through the rule of law.
3. To promote collaboration in economic, social, cultural, technical, scientific and administrative initiatives.
4. To provide mutual assistance in educational, professional, technical and administrative initiatives.
5. To collaborate in the expansion of trade, including the international commodity trade, improvement of transportation and communications and raising living standards.
6. To promote South-East Asian studies.
7. To cooperate with other similar international and regional organizations.

According to Pollard (1970, p. 251), during the early stages, the Malaysian prime minister wanted to include Burma (as it was called then), Cambodia, Indonesia, the Lao People's Democratic Republic, Singapore and South Vietnam (as it was called then) in the ASA. This was publicized after the exchange of notes on the normalization of full diplomatic relations between Malaysia and the Philippines in June 1966. There were political and military influences on each leader, particularly looming concerns concerning the threat of communism. Thus, the motivation behind the birth of ASEAN was that governments could concentrate on nation building, the common fear of communism, reduced faith in or mistrust of external powers in the 1960s and the desire for economic development. The bloc grew when Brunei Darussalam became the sixth member in January 1984. Viet Nam became the seventh member in July 1995. Two years later, the Lao People's Democratic Republic and Myanmar (Burma) joined, followed by Cambodia in April 1999.

ASEAN has transformed itself from a loose association into a rules-based regional organization – under the ASEAN Charter as of 2008 – that is now recognized as a dynamic regional grouping. In particular to political and security cooperation, ASEAN Members States have concluded several agreements, including:

1. Zone of Peace, Freedom and Neutrality Declaration (Kuala Lumpur Declaration), Kuala Lumpur, 27 November 1971.
2. Declaration of ASEAN Concord (Bali Concord I), Bali, 24 February 1976.
3. Treaty of Amity and Cooperation in Southeast Asia, Bali, 24 February 1976.
4. Treaty on the Southeast Asia Nuclear Weapon-Free Zone, Bangkok, 15 December 1995.
5. ASEAN Vision 2020, Kuala Lumpur, 15 December 1997.
6. Declaration of ASEAN Concord II (Bali Concord II), Bali, 7 October 2003.
7. Declaration on the Conduct of Parties in the South China Sea, Phnom Penh, 4 November 2002.
8. Charter of the Association of Southeast Asian Nations (ASEAN Charter), Singapore, 20 November 2007.
9. ASEAN Regional Forum, 1994, with Thailand hosting the ASEAN Summit.

[6] The five Foreign Ministers who signed the document were Adam Malik of Indonesia, Narciso R. Ramos of the Philippines, Tun Abdul Razak of Malaysia, S. Rajaratnam of Singapore and Thanat Khoman of Thailand.

[7] See www.asean.org/asean/about-asean/history [accessed 31 Oct. 2013].

In 1992, ASEAN achieved an important milestone in regional economic integration with consensus to establish the ASEAN Free Trade Area by 2010. Since then, ASEAN has continuously pursued closer economic cooperation in trade, services and investment and moved towards becoming a single market and production base to increase regional competitiveness. This includes the ASEAN Framework Agreement on Services, which was adopted in 1995, designed to eliminate restrictions on intra-ASEAN trade in services and the ASEAN Investment Area, which was established in 1998 to liberalize intra-ASEAN investment.

Membership has been a cornerstone of Thai foreign policy, through which the Government emphasizes enhanced cooperation within ASEAN frameworks for building stronger trust and confidence among all members. Thailand is keen to promote peace, stability and prosperity in the region; it has actively contributed to ASEAN since the early days. Under the Thai chairmanship in 2008–09, one Ministerial Meeting and two ASEAN Summits (the 14th and 15th ASEAN Summits) were conducted in Thailand.

During the 14th ASEAN Summit (in Cha-am), the members agreed on the Cha-am Hua Hin Declaration on the Roadmap for the ASEAN Community (2009–15).[8] The roadmap lays down a series of measures to direct the community-building efforts across three pillars: i) the ASEAN Political-Security Community; ii) the ASEAN Economic Community; and iii) the ASEAN Socio-Cultural Community.

The AEC Blueprint is designed to help establish ASEAN Member States as a single market and production base.[9] The underlying goal is for the ASEAN region to become more dynamic and competitive. The Blueprint will "strengthen the implementation of its existing economic initiatives; accelerating regional integration in the priority sectors; facilitating movement of business persons, skilled labour and talents; and strengthening the institutional mechanisms of ASEAN" (ASEAN Secretariat, 2009, p. 21). Additionally, the Blueprint is to address development inequalities to strengthen cooperation and accelerate the integration of the "latecomers", especially Cambodia, the Lao People's Democratic Republic, Myanmar and Viet Nam (CLMV economies). It will incorporate a wider, expanded range of trade-related areas, such as "human resources development and capacity building; recognition of professional qualifications; closer consultation on macroeconomic and financial policies; trade financing measures; enhanced infrastructure and communications connectivity; development of electronic transactions through e-ASEAN; integrating industries across the region to promote regional sourcing; and enhancing private sector involvement for the building of the AEC" (ASEAN Secretariat, 2009, p. 22).

In fostering a more outward-looking mindset and promoting increased extra-ASEAN trade, the AEC aims to become a region fully integrated into the global economy. As then ASEAN Secretary-General Surin Pitsuwan acknowledged in 2010: "ASEAN has earned the place to play a central role in the evolving regional architecture by virtue of not only being the hub in economic integration initiatives in the region but also by being able to provide the platform for political and economic dialogue and engagement among major global players … [however], ASEAN cannot afford to be complacent." The ASEAN foreign

[8] See www.asean.org/news/item/cha-am-hua-hin-declaration-on-the-roadmap-for-the-asean-community-2009-2015 [accessed 15 Nov. 2013].

[9] As stated in the AEC Blueprint, all members agree to act in accordance with the "principles of an open, outward-looking, inclusive, and market-driven economy consistent with multilateral rules as well as adherence to rules-based systems for effective compliance and implementation of economic commitments" (ASEAN Secretariat, 2009, p. 21).

ministers have agreed on specific steps to promote ASEAN centrality, including institutionalizing regional consultations and coordinating regional and international forums, such as the Asia–Pacific Economic Cooperation (APEC), the Asia–Europe Meeting and the World Trade Organization.[10]

ASEAN leaders also have agreed to start negotiating on the Regional Comprehensive Economic Partnership (RCEP), which will encompass six dialogue partners (Australia, China, India, Japan, the Republic of Korea and New Zealand). By mid-2013, ASEAN countries had signed 40 agreements, and several dozen were under negotiation. This is clearly consistent with the objective of integrating ASEAN with the extra-ASEAN world. The conclusion of the RCEP boosts the concept of ASEAN centrality in both regional and global institutional frameworks for cooperation. At the same time, the RCEP will serve to unite ASEAN under the AEC. With this, ASEAN should be able to pursue its goals on the international and regional stage much more forcefully and effectively (Chia, 2013, p. 34).

Thailand proposed the concept of enhanced ASEAN connectivity, comprising physical, institutional and people-to-people connectivity. The implementation of the Master Plan on ASEAN Connectivity is a top priority. When ASEAN becomes one community, enhanced connectivity within and beyond the region is vital. The flow of goods, services and labour will be freer, especially via land links through transportation networks among Thailand and the CLMV economies. The road network that links Thailand with those four countries includes the East–West economic corridor, the Central subcorridor, the southern coastal subcorridor and the southern economic corridor. Road networks can enhance economic development and productive integration between Thailand and CLMV economies.

4. Impact of ASEAN integration on Thailand's labour market

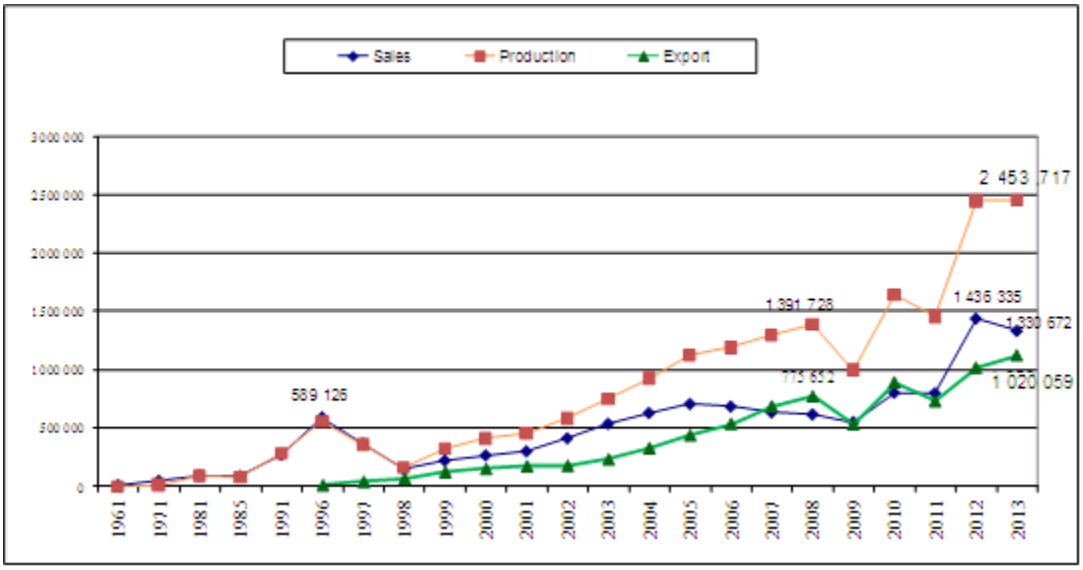
The ASEAN cooperation has developed tremendously and expanded to integrate several East Asian countries over the past two decades, including the key groupings of ASEAN+3 (with China, Japan and the Republic of Korea), ASEAN+6 (with Australia, China, India, Japan, the Republic of Korea and New Zealand) and APEC (Kawai and Wignaraja, 2007). This section singles out Thailand's automotive industry for analysis of the impact of ASEAN integration on a particular segment of an ASEAN Member State's economy.

[10]These characteristics are interrelated and mutually reinforcing. Incorporating the required elements of each characteristic in one Blueprint ensures the consistency and coherence of these elements as well as their implementation and proper coordination among relevant stakeholders. See http://thailand.prd.go.th/view_news.php?id=4811&a=3 [accessed 30 Nov. 2013].

4.1 Current status of the Thai automotive industry

With a production volume of 2.45 million units, domestic sales of 1.4 million units and exports of more than 1 million units in 2012, there is no doubt that Thailand now constitutes a leading production hub and export base for automobiles within ASEAN (figure 26). The automotive industry in Thailand started in the early 1960s under an import-substitution policy and a revision of the investment promotion law designed to encourage automotive assembly. It would be misleading to disregard the intervention of the Thai State and the series of protection policies it instituted to streamline the industrialization process incrementally. Because of that and even though there was no indigenous manufacturing, the Thai automobile industry was transformed from a domestic-oriented to an export-oriented industry and became a vital industrial sector.[11]

Figure 26. Thailand's automobile production, sales and exports, 1961–2012



Source: Federation of Thai Industry.

The automobile industry's contribution to the whole economy has been substantial. In the past decade, the industry has contributed significantly to the Thai economy in terms of value added and employment. According to Thailand Development Research Institute (2012), total employment, classified by education level, in the automotive industry (consisting of automobile assembly, body parts, auto parts and components and motorcycle assembly) increased from 121,576 in 2001 to about 300,000 people in 2011 (table 2). In terms of exports, the industry's contribution was impressive. It ranked among Thailand's main export products from 2007 to 2011 before moving into the top spot in 2012, with a value of about $22 billion (table 3).

[11] For more details about the historical development of the automotive industry, see Doner (1991), Poapongsakorn and Techakanont (2008) and Techakanont and Charoenporn (2011).

Table 2. Employment in the automotive industry, 2001 and 2011

Education level	Manufacturing sector (%)			
	Automobile assembly	Autoparts & components	Motorcycle assembly	Total
2001				
Lower secondary or less	45.8	50.2	71.1	52.1
Upper secondary	20.9	16.4	10.6	17.0
Vocational Education	7.7	7.4	8.4	7.7
Higher Vocational Education	15.8	10.1	5.4	11.2
Higher education	9.8	12.9	4.6	10.6
Unknown		2.9		1.5
Total	100	100	100	100
2011				
Lower secondary or less	29.0	41.5	57.3	39.9
Upper secondary	19.8	26.8	19.3	25.0
Vocational education	11.5	7.1	3.8	7.8
Higher vocational education	18.1	14.4	8.8	14.8
Higher education	20.9	9.7	10.8	11.9
Unknown	0.8	0.5		0.6
Total	100	100	100	100

Education level	Manufacturing sector: Number of persons			
	Automobile assembly	Autoparts & components	Motorcycle assembly	Total
2001				
Lower secondary or less	17 806	32 054	13 434	63 294
Upper secondary	8 128	10 499	2 001	20 628
Vocational education	2 987	4 729	1 589	9 305
Higher vocational education	6 135	6 457	1 021	13 613
Higher education	3 789	8 250	862	12 901
Unknown		1 835		1 835
Total	**38 845**	**63 824**	**18 907**	**121 576**
2011				
Lower secondary or less	17 204	92 935	9 533	119 672
Upper secondary	11 778	60 047	3 212	75 037
Vocational education	6 827	15 951	631	23 409
Higher vocational education	10 734	32 213	1 462	44 409
Higher education	12 387	21 660	1 800	35 847
Unknown	454	1 207		1 661
Total	**59 384**	**224 013**	**16 638**	**300 034**

Source: TDRI, 2012, Table 5.7.

Table 3. Main export products, 2007–12 (US$ million)

		2007	2008	2009	2010	2011	2012
1	Motor cars, parts and accessories	12 978	15 586	11 121	17 712	16 985	22 913
2	Automatic data processing machines and parts there of	17 332	18 384	16 017	18 837	17 064	19 057
3	Precious stones and jewellery	5 382	8 270	9 761	11 652	12 301	13 148
4	Refined fuels	4 097	7 913	5 428	7 072	10 092	12 881
5	Rubber	5 640	6 792	4 306	7 896	12 698	8 746
6	Polymers of ethylene, propylene, etc. in primary forms	5 212	5 520	4 457	6 344	8 803	8 532
7	Chemical products	3 920	4 309	4 466	5 778	8 293	8 516
8	Rubber products	3 654	4 550	4 488	6 434	8 392	8 410
9	Electronic integrated circuits	8 418	7 241	6 445	8 066	7 910	6 689
10	Rice	3 467	6 204	5 046	5 341	6 432	4 632

Source: Ministry of Commerce, www.moc.go.th [accessed 5 Dec. 2013].

According to the Thailand Automotive Institute, in 2011 the industry comprised 16 major car assemblers, seven motorcycle manufacturers and about 2,000 parts suppliers. Most constituted small and medium-sized companies. Because Thailand has no discriminatory policy, all key assemblers are subsidiaries of foreign companies, especially Japanese firms. Thailand was chosen to be a production and export hub for one-tonne pickup trucks and, recently, economy-sized "eco" passenger cars. Thailand was able to attract global car manufacturers because of a sufficient pool of qualified engineers and technicians, efficient infrastructure, sound macroeconomic policy, a commitment to liberalization and an extensive supplier network. Thailand is clearly the strongest automotive production base in South-East Asia.

4.2 Effect of regional integration on the Thai automotive industry

An important milestone in ASEAN economic integration was the creation of the ASEAN Free Trade Area (AFTA) in 1992. The core of AEC is a tariff reduction agreement among member countries (ASEAN Trade in Goods Agreement), which was developed from similar agreements, including the Common Effective Preferential Tariff (CEPT), with the added inclusion of a regional investment incentive programme known as the ASEAN Industrial Cooperation, which began in 1996 and has since allowed approved projects the privileges of the final targeted AFTA/CEPT tariff rates. Under CEPT, the tariff on goods traded with a 40 per cent ASEAN content requirement were to be subject to a 0–5 per cent tariff for intra-ASEAN trade by 2002/2003; 2006 for Viet Nam, 2008 for the Lao People's Democratic Republic and Myanmar and 2010 for Cambodia. By 2010, most tariff reduction targets had been gradually completed.[12]

[12] Malaysia previously was allowed to defer the transfer of 218 tariff lines of completely built units (CBU) and completely knock-down (CKD) automotive units until 1 January 2005. Due to the acceleration of the CEPT, as of 2004, Malaysia started reducing its tariff for CBU and CKD automotive units to gradually meet its CEPT commitment one year earlier than schedule. See www.asean.org/communities/asean-economic-community/category/asean-free-trade-area-afta-council [accessed 30 Nov. 2013]. Because the CEPT scheme covers almost 100 per cent of all tariff lines in ASEAN by the first half of the 2000s, the only products not included are those in the general exceptions category and sensitive agricultural products. For the automotive industry, there is virtually no tariff for old members but some for the four newer ASEAN Member States.

To evaluate the structural changes from the start of AFTA, an overview of the evolution of the automobile industry trade is useful. Information from the UN Comtrade database shows intra-industry trade in the automotive industry between Thailand and its trade partners, including Indonesia, Malaysia, the Philippines and Viet Nam (together they are perceived as the ASEAN-5), Japan, China and the Republic of Korea (ASEAN+3), Australia and India (ASEAN+6), between 1992 and 2011 (see Annex I for the list of parts and Harmonized System of tariff nomenclature (HS) Code).

As shown in tables 4–6, there exists an asymmetrical relationship of intraregional imports and exports between Thailand with ASEAN and ASEAN+3. Although Thailand's net export of the automotive industry (both vehicle and auto parts industries) increased significantly from 1992 to 2011, exports grew more than fiftyfold while imports grew only fourfold (table 4). The disaggregated data on vehicles (automobiles and motorcycles) and auto parts shows that Thailand transformed from a net importer in 1992 to become a net exporter in automobiles (table 5). Interestingly, intra-industry trade in auto parts grew tremendously during that period and Thailand became a net exporter of auto parts after 2002. Comparing the auto parts trade balance between 1996 and 2011, Thailand had a trade deficit of about $3.7 billion that then became a trade surplus of about $3.2 billion (table 6).

Intra-industry trade between Thailand and ASEAN Member States has surged considerably since 2004. From 1992 to 1996, only a few automotive products were included in the CEPT. The majority of automotive products were brought into the CEPT's domain in 2000 and the tariff was lowered to 3–5 per cent by 2003. A prominent player that enhanced regional production network in ASEAN was the Toyota IMV project, which launched mass production in 2004. Currently, the proportion of products with 0 per cent tariff rates is already at 99 per cent for the six original members. For the other four – Cambodia, the Lao People's Democratic Republic, Myanmar and Viet Nam, which joined later – the proportion of products with zero tariff rates is at 69 per cent; those countries will complete the reduction in 2018. As a result, it is likely that the implementation of the AEC in 2015 will have little impact on the current trade pattern.

Table 4. Thai automotive industry trade with selected countries, select years

Country/region	Exports				Imports			
	1992	1996	2002	2011	1992	1996	2002	2011
ASEAN	25 359 414	249 565 760	634 316 665	6 694 812 090	17 178 797	105 816 848	357 226 737	1 598 414 340
Indonesia	3 285 372	27 234 220	218 087 109	2 925 323 256	1 769 302	7 685 068	100 068 005	792 731 754
Malaysia	10 752 858	47 757 452	199 432 075	1 731 205 017	5 141 955	29 532 595	77 659 135	250 328 557
Philippines	5 337 714	53 828 744	108 334 948	1 053 458 116	10 262 881	68 518 102	177 867 402	447 626 983
Viet Nam	5 983 470	120 745 344	108 462 533	984 825 701	4 659	81 083	1 632 195	107 727 046
ASEAN+3	85 691 855	362 933 227	1 216 529 105	9 399 304 693	2 504 598 124	4 882 960 930	2 730 515 797	10 929 899 592
Japan	55 451 799	99 507 208	520 301 107	2 260 252 889	2 426 929 200	4 638 219 151	2 275 380 027	7 934 914 606
China	1 745 554	6 142 284	39 587 883	339 310 727	11 767 391	31 045 095	58 658 186	945 044 874
Rep. of Korea	3 135 088	7 717 975	22 323 450	104 928 987	48 722 736	107 879 836	39 250 847	451 525 772
ASEAN+6	98 683 964	401 372 293	1 659 963 433	13 118 215 790	2 512 283 024	4 920 565 408	2 744 802 195	11 282 022 610
India	148 877	1 065 199	47 697 599	753 354 930	2 408 749	6 259 013	5 373 541	310 389 531
Australia	12 843 232	37 373 867	395 736 729	2 965 556 167	5 276 151	31 345 465	8 912 857	41 733 487
World	468 003 778	1 239 036 633	4 305 948 834	27 413 441 950	3 170 626 195	6 131 114 121	3 554 106 129	13 452 735 016
$ millions	468	1 239	4 306	27 413	3 171	6 131	3 554	13 453

Note: Automotive industry includes both final products (vehicles) and intermediate products (autoparts).
Source: Compiled from the UN Comtrade database.

Table 5. Thai vehicles trade with selected countries, select years

Country/region	Exports				Imports			
	1992	1996	2002	2011	1992	1996	2002	2011
ASEAN	5 632 919	117 514 454	102 575 144	2 739 888 311	1 274 286	355 948	36 502 202	364 413 314
Indonesia	1 707	302 219	60 393 069	1 374 211 623		22 113	10 537 193	222 083 746
Malaysia	259 264	659 408	28 709 974	609 478 294	1 274 286	329 667	14 847	65 196 413
Philippines	11 898	17 204 954	9 023 670	616 311 403		4 168	25 938 205	65 804 938
Viet Nam	5 360 050	99 347 873	4 448 431	139 886 991			11 957	11 328 217
ASEAN+3	7 744 963	128 448 210	198 347 829	3 393 556 132	808 234 533	679 062 241	218 025 390	1 214 459 593
Japan	592 152	4 752 574	80 990 484	561 927 050	773 488 716	595 004 868	163 546 872	693 665 191
China	1 519 892	5 347 051	14 270 757	84 215 225	620 135	487 618	629 962	64 870 410
Rep. of Korea		834 131	511 444	7 525 546	32 851 396	83 213 807	17 346 354	91 510 678
ASEAN+6	7 778 187	152 138 767	530 216 708	5 782 691 920	809 296 781	703 127 563	218 101 269	1 273 346 913
India	10 864	61 322	291 948	2 380 374		11 854	2 072	56 785 818
Australia	22 360	23 629 235	331 576 931	2 386 755 414	1 062 248	24 053 468	73 807	2 101 502
World	77 235 865	366 860 787	2 081 568 887	12 512 644 650	1 220 081 578	1 460 492 531	347 129 552	1 795 778 974
$ millions	77	367	2 082	12 513	1 220	1 460	347	1 796

Source: Compiled from UN Comtrade database.

Table 6. Thai autoparts trade with selected countries, select years

Country/region	Exports				Imports			
	1992	1996	2002	2011	1992	1996	2002	2011
ASEAN	19 688 565	131 109 143	530 763 184	3 951 352 242	15 781 390	105 067 524	318 323 053	1 228 674 959
Indonesia	3 283 665	26 822 830	157 668 555	1 551 047 473	1 769 302	7 641 135	89 483 156	569 495 594
Malaysia	10 492 940	46 417 902	170 481 722	1 119 026 548	3 744 548	28 831 372	75 290 781	183 841 178
Philippines	5 300 699	36 622 493	98 676 631	436 530 441	10 262 881	68 513 934	151 928 896	381 814 641
Viet Nam	611 261	21 245 918	103 936 276	844 747 780	4 659	81 083	1 620 220	93 523 546
ASEAN+3	77 803 385	233 257 901	1 016 287 517	6 001 505 161	1 692 787 586	4 195 673 677	2 508 186 810	9 648 290 335
Japan	54 754 070	94 557 468	438 603 336	1 697 809 259	1 651 534 267	4 040 513 536	2 110 867 581	7 237 929 774
China	225 662	707 446	25 201 713	255 087 536	11 094 409	29 607 030	57 513 337	824 070 224
Rep. of Korea	3 135 088	6 883 844	21 719 284	97 256 124	14 377 520	20 485 587	21 482 839	357 615 378
ASEAN+6	90 736 833	248 005 270	1 127 476 523	7 328 483 653	1 699 167 975	4 208 630 053	2 522 099 385	9 940 340 180
India	138 013	1 003 877	47 331 697	750 860 786	2 372 790	6 244 003	5 318 954	252 898 776
Australia	12 795 435	13 743 492	63 857 309	576 117 706	4 007 599	6 712 373	8 593 621	39 151 069
World	388 149 051	868 115 261	2 203 753 319	14 869 376 614	1 939 530 949	4 635 312 575	3 198 048 826	11 573 581 240
$ millions	388	868	2 204	14 869	1 940	4 635	3 198	11 574

Source: Compiled from UN Comtrade database.

The ASEAN automotive industry developed because of the Japanese carmakers' strategy to penetrate the domestic market when it was still protected by the Government's industrial policy from 1970 to the 1990s. The AICO scheme appears to have been the key driving force of regional integration automobile production because it opened up opportunity for firms to use excess capacity and to be more specializing in some specific products. Multinational companies could consolidate their production bases in ASEAN-4

(Indonesia, Malaysia, the Philippines and Thailand). However, AICO became less important because import duties among the ASEAN-6 members were almost zero for most items in 2010, indicating the possibility of a higher degree of regional integration.

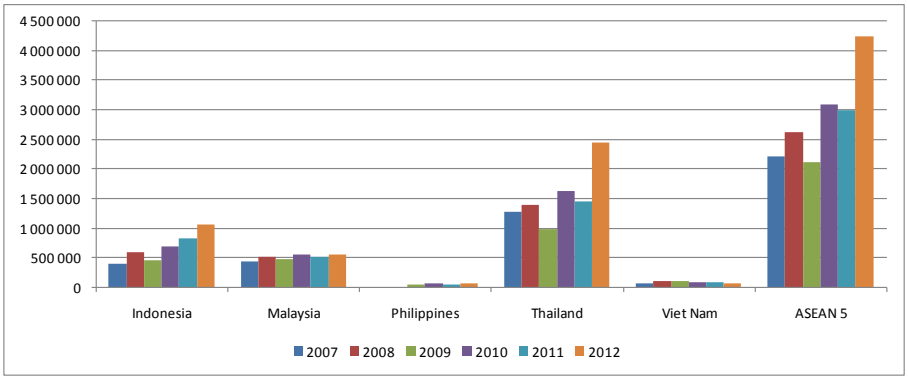
As for the Thai automotive industry, Japanese firms have long been the primary players in upgrading both production capabilities and supporting industries. Previous studies have pointed out the importance of Thai industrial policies that gradually changed from strict intervention to more liberalization. As that was occurring, several Japanese firms decided to use Thailand as their export base for pickup trucks and to link with production bases in Indonesia, Malaysia, the Philippines and extra-ASEAN, such as China, India, Japan and South Africa.

Among the ten members of ASEAN, only five countries (Malaysia, Indonesia, the Philippines, Thailand and Viet Nam) are major demand and production centres. Figures 27 and 28 provide the production and sales within the ASEAN-5 countries (Indonesia, Malaysia, the Philippines, Thailand and Viet Nam) from 2007 to 2012. The leading production hub is clearly Thailand and Indonesia, with annual production of 2.45 million units and 1.06 million units, respectively. Total production of ASEAN-5 countries was 4.23 million units in 2012.The market size in 2012 was 3.47 million units (with Thailand at 1.43 million units, Indonesia at 1.11 million units and Malaysia at 0.62 million units.

Figure 29 indicates that the production structures in ASEAN differ, reflecting the strategy of multinational corporations in response to local government intervention over the past four decades. This is believed to be the global strategy of multinational corporations to choose a single appropriate location for satisfying both domestic and export markets. In other words, it is a portion of a division of labour strategy of Japanese carmakers production networking between ASEAN countries. In line with this strategy, Thailand's product champions are one-tonne pickup trucks and small ("eco") cars; Indonesia's champions are sport utility vehicles (SUV), multipurpose vehicles and big trucks; Malaysia's champion is passenger cars; and Viet Nam's is motorcycles.

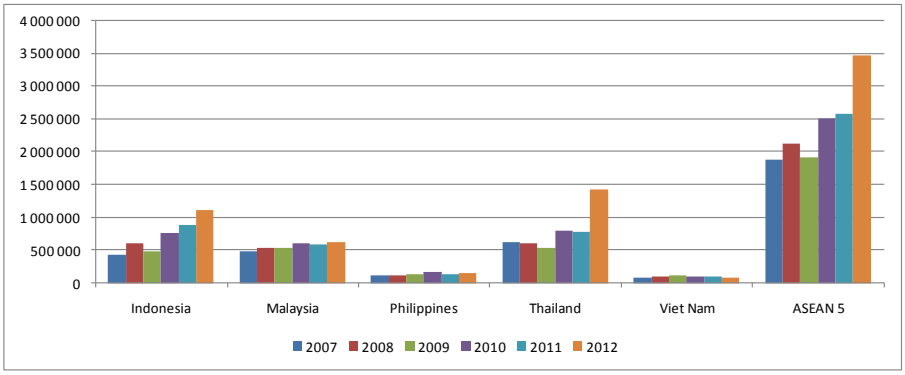
This by no means overlooks the historical policy frameworks that each country has pursued over the past four decades. In particular with the AEC, vehicles and parts will flow freely among the ASEAN nations without import taxes.

Figure 27. Automobile production in ASEAN-5, 2007–12



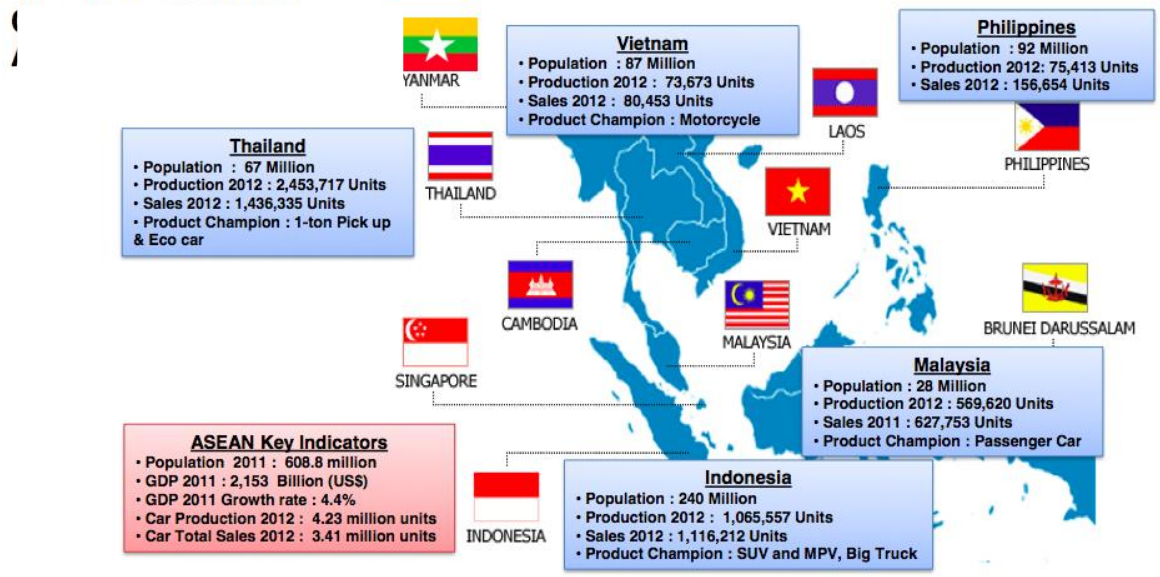
Source: ASEAN Automotive Federation (AFA), www.asean-autofed.com [accessed 31 Oct. 2013].

Figure 28. Automobile sales in ASEAN-5, 2007–12



Source: AFA, www.asean-autofed.com [accessed 31 Oct. 2013].

Figure 29. Overview of automotive industry in ASEAN-5



Source: Thailand Automotive Institute, presentation at Automotive Summit 2013, Moving towards Global Green Automotive Industry, 21–22 June 2013.

As global competition becomes more intense, it is likely that carmakers will be more serious in consolidating their production network in the region. Each country will be allocated production according to its potential domestic demand, availability of skilled labour and economic and political stability. In the next five years, Thailand will continue to secure itself as a centre of production for passenger cars, pickup trucks and the "eco-cars", while Indonesia will be a centre for SUVs. This is because those are products popular for consumers in each country.[13] Viet Nam will specialize in motorcycles. Again, this is naturally

[13] The products, pickup trucks for Thailand and Kijang (SUV) for Indonesia, are popular simply because each government incentivizes them to be cheap through lower taxes than what is paid for passenger cars.

due to its large market size. However, with its cheap labour cost, Viet Nam is now producing some labour-intensive parts, such as wire harnesses for automotive parts.

Due to Malaysia's relatively small domestic market, compared with Thailand and Indonesia, some Japanese car manufacturers have decided to use the country as an assembly base for niche product lines and export to ASEAN countries and thus utilize the 0 per cent tariff. For instance, Mazda Corporation began producing its new SKYACTIV CX-5 in Malaysia[14] and exporting to Thailand in 2013. Subaru is producing its Subaru XV for Malaysia's domestic market and for exporting to Indonesia, Thailand and elsewhere in ASEAN.[15] This is a clear example of how Japanese carmakers have consolidated and used their production network to penetrate the ASEAN market and to use it for a platform for the global market.

4.3 Human resources and skills development

As previously noted earlier, the THB300 minimum wage came into effect in 2013 and the growth rate surpassed that of labour productivity. Employment in the automotive sector grew significantly, from 121,576 workers in 2001 to 300,034 workers in 2011 (table 2).[16] Over the same period, on average, the industry employed a larger share of labour with a higher education level; for example, in automobile assembly, the share of labour with a vocational level education or higher increased from 33 per cent to 50 per cent, while in auto parts it went from 30 per cent to 31 per cent, and in motorcycle assembly it went from 18 per cent to 23 per cent.

The labour shortage has been challenging Thai industry. On average, the labour shortage was about 3–4 per cent in 2011; although the most serious was in the group of unskilled workers with a low education level who work as operators in the production line. Additionally, skilled labour, such as technicians and engineers, was also in short supply. In 2011, there was a shortage of about 12,500 workers in the automotive sector (TDRI, 2012, p. 3.31).

The Federation of Thai Industries estimates that Thailand will have a total production output of 3.5–4 million vehicles by 2020. If the production grows at this pace, both automobile and parts manufacturers must make strategic moves to improve their productivity. They inevitably will need to develop the skills of their employees, adopt more automation, invest in new machinery and move up the value chain to higher value-added products and parts.

According to the Thai Autoparts Manufacturers Association (TAPMA), firms need to react to the labour shortage with both quality and quantity improvements. They need to increase the capital–labour ratio in their production to cope with the higher labour costs and at the same time improve their labour

[14] See www.cbt.com.my/2013/09/20/mazda-malaysia-exports-cx-5-to-thailand/ [accessed 30 Nov. 2013].

[15] See http://news.motorstop.asia/malaysia/subaru-to-start-local-assembly-in-malaysia-from-q3-2012-begin-with-compact-suv/ [accessed 30 Nov. 2013].

[16] As production increased from 459,418 to 1,457,795 units in 2001 and 2011, the average number of cars per person in a year increased from 3.7 to 4.8.

productivity. TAPMA estimates that total employment in 2010 in the automobile and auto parts industry was about 457,000 persons and that the industry will demand an additional 118,200 persons in 2015 (59,100 persons from secondary school, 17,730 persons from vocational education, 29,550 from higher vocational education and 11,820 persons from higher education).[17]

The Thailand Development Research Institute (2012) has forecasted the supply of labour towards 2022 and demand for labour in major sectors (tables 7 and 8). A labour shortage is evident if there is no productivity improvement; the gap will rise from less than 1 million persons in 2014 to more than 6 million persons in 2022. Thus, without any productivity improvement, the labour shortage will be more severe and the production goal may be impossible to reach. This may jeopardize the status of Thailand as a leading automobile industry in ASEAN.

Table 7. Estimated aggregate supply of labour, 2014–22

	2014	2016	2018	2020	2022
15–19 years old	1 109 865	1 020 510	955 002	879 187	782 341
20–24 years old	3 538 641	3 438 781	3 268 902	3 133 625	3 080 297
25–39 years old	14 188 399	14 121 555	14 095 443	14 028 738	13 874 065
40–49 years old	9 879 088	` 9 883 646	9 823 933	9 754 731	9 687 619
50–59 years old	7 732 850	8 175 010	8 531 560	8 822 989	9 019 226
60–69 years old	3 091 796	3 500 031	3 962 046	4 455 805	4 916 116
Older than 70 years	731 337	821 979	924 283	1 057 120	1 204 806
Total	**40 271 976**	**40 961 512**	**41 561 168**	**42 132 195**	**42 564 469**

Source: TDRI, 2012, Table 3.18.

Table 8. Estimated labour demand in major sectors, 2014–22

Sectors	2014	2016	2018	2020	2022
Agriculture	15 134 658	15 395 160	15 634 208	15 832 603	16 037 796
Industry	8 371 589	8 753 332	9 180 053	9 705 893	10 176 115
Foods & beverages	1 230 246	1 307 354	1 378 466	1 450 079	1 525 509
Textile & clothing	924 167	886 115	849 217	810 747	777 246
Manufacturing equipment	169 348	172 083	174 147	175 347	177 202
Electric appliances & electronics	441 199	465 265	483 991	494 983	511 766
Automobiles & automotive parts	318 322	396 306	476 303	554 254	654 809
Others	5 288 307	5 526 210	5 817 930	6 220 483	6 529 584
Services	17 822 909	18 947 135	20 135 248	21 391 608	22 729 054
Total	**41 329 155**	**43 095 627**	**44 949 510**	**46 930 105**	**48 942 965**

Source: TDRI, 2012, Table 3.19.

[17] Thavorn Chalassathien, Deputy Secretary General, the Federation of Thai Industries, presentation at Automotive Summit 2013, 20–21 June, 2013, Bangkok.

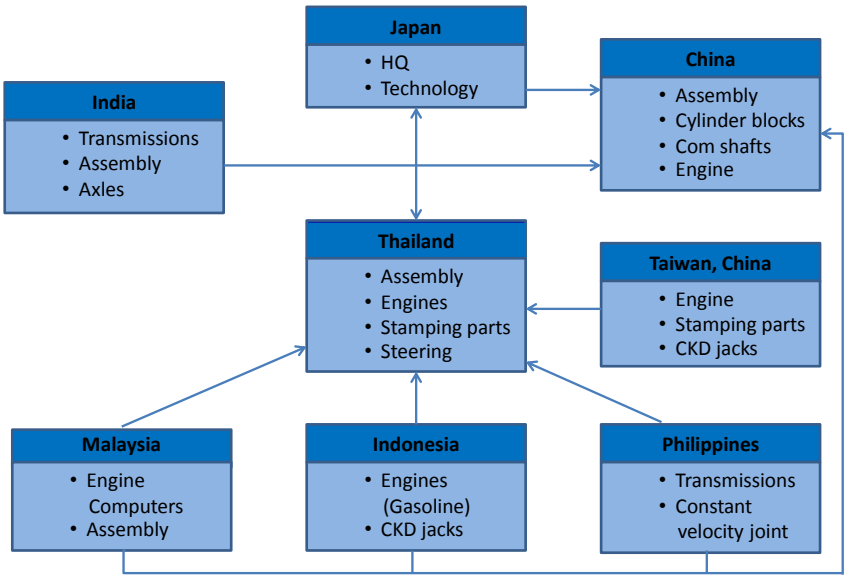
4.4 Future prospects of the Thai automotive industry towards the AEC

It is a challenging question of how the Thai automotive industry will be affected by and will adjust to the AEC. The free flow of goods, investment and skilled labour will open up opportunity for firms to export and import goods and components more easily, to use foreign workers or to relocate some portions of their production to neighbouring countries. Because Japanese firms are key players in the automotive industry, their strategies will define the new horizon of the regional production network.

Techakanont (2013) cited Thailand's automotive industry as an integral part of the global production network of many assemblers. The Toyota International Innovative Multipurpose Vehicles (IMV) project in Thailand is a good example of regional production integration that links to the global strategy of Toyota. The IMV production started somewhat simultaneously in four production bases – Thailand, Indonesia, Argentina and South Africa. Thailand and Indonesia are actually the primary production bases, with Thailand producing four models of the new Hilux Vigo and Indonesia specializing in one model, Innova. Figure 30 outlines the Toyota production network in ASEAN and East Asia.

As well, Honda produces passenger cars (City, Jazz, Civic and Accord) in Thailand and SUVs (Stream) in Indonesia. Ford and Mazda also have expanded their operations in Thailand with new models of passenger cars and pickup trucks.

Figure 30. Toyota regional production network in East Asia



Source: Cheewatrakoolpong, Sabhasri and Bunditwattanawong, 2013, originally from Dent, 2008.

In addition, there is evidence that Toyota, Honda and Isuzu have made efforts to improve the technological capabilities of Thailand's production.[18] Techakanont (2013) confirmed that a higher level of technology has been transferred to Thailand, enabling both carmakers and parts suppliers to upgrade to more sophisticated production technology. For instance, engineers at Toyota were involved in the development of the latest model. Recently, Toyota asked its first-tier suppliers to work at Toyota Motor Asia Pacific Engineering & Manufacturing (TMAP-EM) to join the early product development process. This study found that Thailand has gradually developed from a production hub to a process and product engineering hub for Japanese carmakers. In the past few years, TMAP-EM accepted engineers from Toyota operations in ASEAN, Taiwan (China) and Argentina to collaborate with Thai engineers to prepare a new model to be launched in their home country. As well, TMAP-EM sent engineers to its overseas plants during the preparation of the mass production launch.

According to a series of interviews with Thai government officers (including an economist at the Office of Industrial Economics in the Ministry of Industry and researchers with the Thailand Automotive Institute), an official with the Thai Autoparts Manufacturers Association, one carmaker, two Thai suppliers and one Japanese supplier, the pressure of the new minimum wage and labour shortage are not severe for carmakers. The salaries they pay and what they provide for workers' welfare are, on average, higher than in other industries. The difficulties appear to be felt by parts suppliers, especially second- and third-tier suppliers. The following section highlights the perspectives from those interviews on possible scenarios and adjustment plans for operations within the AEC.

4.4.1 Perspectives from policy-makers and association officials[19]

With the AEC approaching, the resulting single market and production base will lead to a more consolidated production network. Because Thailand has the largest market and production capacity among ASEAN countries, more investment is likely to flow into the country. The Government recently announced a new investment incentive for its eco-car Phase II, with the following details:

- submit application to the Board of Investment by 31 March 2014;
- begin production within 2019;
- tax exemption privileges for six years;
- to qualify for tax exemptions,
  - energy-efficient fuel efficiency must be increased from 5 litres per 100 km in the first phase to 4.3 litres per 100 km,
  - vehicles must be environmentally friendly (5 euro), emitting no more than 100 grams of CO_2 per km, and adhere to impact-protection standards set by the UNECE Reg. 94 and Reg. 95,

[18]Toyota established Toyota Technical Center–Asia-Pacific (TTCAP), which became Toyota Motor Asia Pacific Engineering & Manufacturing (TMAP-EM) to perform engineering and R&D functions for Toyota's regional and global operations. Honda Motor established two R&D centres for Honda in Thailand, which are Honda R&D Southeast Asia Co., Ltd., a research and development centre for motorcycles and related products in ASEAN, and Honda R&D Asia Pacific Co., Ltd. a four-wheel vehicle research and development centre for the Asia and Oceania region. Isuzu Motor (Thailand) set up Isuzu Technical Center of Asia Co. Ltd in 1991. This was promoted as the first automotive R&D company in Thailand with an objective to train Thai engineers in automotive design.

[19] This section is drawn from the interviews with an economist at Office of Industrial Economics, Ministry of Industry, researchers of Thailand Automotive Institute and the president of Thai Autoparts Manufacturers Association in October and November 2013.

- new investment must be at least THB5 billion of capital (excluding land) for old firms and THB6.5 billion for new firms;
- scale should be 100,000 cars per year (by the fourth year of production); and
- the preferential excise tax rate requires eco-cars to have engine sizes smaller than 1,300 cc (for petrol engines) and 1,500 cc (for diesel engines).

Production in Thailand will expand; with the new eco-car, the Government estimates an increase of 500,000 units per year. The market will shift predominately to the smaller car segment due to the lower excise taxes. With an increase in the wage rate and low unemployment, carmakers are likely to install new state-of-the-art machinery to lessen the human resources burden. It is imperative that they upgrade their employees to enable them to handle the more demanding engineering activities that will be transferred from Japan to Thailand. In particular, in the new eco-car project, the technological requirements will be heightened. As the Thailand Development Research Institute (2012) points out, there will be a labour shortage and productivity improvement will be the only way to meet the demands of their planning.

According to the Thailand Automotive Institute Master Plan for Automotive Industry (2012–16), the AEC poses strategic challenges to Thailand. On technology, Thailand needs to move up the value chain, especially in undertaking research and development (R&D) activities. Producers need to be prepared to meet more stringent environmental and safety standards. However, they believe that car producers in Thailand have already started their R&D activities and that development has achieved the necessary rate of momentum that can be increased still further to fulfil their targets. In the medium term, they believe that Thailand can still maintain its position as a regional hub for automobile production in ASEAN. Human resource development is the most important factor to success.

A central problem in the automotive industry's human resource development is skills mismatch. One of the Thailand Automotive Institute researchers noted in the interview for this study that his organization receives many complaints from members (carmakers and part suppliers) that newly graduated students do not possess the skills necessary for production. Thus, they need to train newly recruited workers. The Japanese Government is helping to resolve the skills mismatch through human resource development support, most recently through the Japan–Thailand Economic Partnership Agreement.[20]With that cooperation, the Thailand Automotive Institute launched the Automotive Human Resources Development Project in 2006[21] to upgrade the capabilities of local parts manufacturers.[22]

[20] The project was agreed upon by the Thai and Japanese Governments in 2007; it aims i) to develop high-standard training systems for human resources development in the automotive sector; ii) to develop competent Thai trainers to transfer knowledge to Thai co-workers or trainees; iii) to enhance the effectiveness of skills training to support future expansion of the industry; and iv) to establish a human resources development centre for the automotive sector, which will be well equipped with tools and testing facilities to support the development of personnel in the areas of manufacturing, testing and R&D.

[21]Four leading Japanese companies participated in the programme, providing training experts and course materials, including Toyota (the Toyota Production System), Honda (mould and die technology), Nissan (skills improvement programme) and Denso (manufacturing skills and mind management). The training covered theoretical knowledge, hands-on skills and psychological attitudes. The Thailand Automotive Institute has successfully bridged traditional interests and overcome a high level of mutual distrust among the main players.

[22] In 2013, the Thailand Automotive Institute organized a training programme in R&D to help auto parts producers and automakers in Thailand enhance their capabilities to meet new demands. The value analysis and value engineering is the first step for auto parts makers to enter into R&D activities with their customers. In the previous fiscal year programme, some

From the Thailand Automotive Institute's perspective, the AEC will place more intense demands on human resource development within the labour force. Automakers and parts suppliers will need to invest more in physical capital to mitigate the effects of both labour shortages and rising labour costs. The direction of the automobile industry should veer into higher value-added activities; basic value analysis and value engineering and basic knowledge in R&D are important areas of knowledge that need to be mastered in the near term.

4.4.2 Perspectives from a Japanese parts supplier[23]

Yazaki (Thai Arrow Products) is a Japanese wire harness producer and has invested in Thailand since the 1960s, expanding the business to four factories and one office in Thailand. Its main product is the wire harness for automobiles. Within its Thai operation, it supplies almost all the carmakers in Thailand. It has invested extensively in Asia to supply parts to customers in each location. Yazaki invests in 43 countries, 160 affiliates and 444 locations. It employed, as of June 2013, a total of 250,600 persons. In 2012, Thai Arrow Product expanded operations to Cambodia.

Yazaki views the new Thai minimum wage as a turning point that has eroded the competitiveness of labour-intensive manufacturing, such as wire harnesses. However, Yazaki always looks for business opportunities in other countries, including the CLMV economies. Although Thailand is a major production hub for wire harnesses in South-East Asia, Yazaki had actually expected increasing wages and costs of production and had been preparing for operations in other countries since the 1990s.

Possible locations are Cambodia, the Lao People's Democratic Republic and Myanmar. Although Yazaki wanted to invest in Myanmar, the political instability there hindered their plan. Consequently, Yazaki invested in the Lao People's Democratic Republic and Cambodia. The main reason was not to utilize the cheaper labour costs but to prepare for further relocation if production in Thailand loses its competitive edge.

The investment in the Lao People's Democratic Republic started 13 years ago. At first, Yazaki wanted to invest in Sawannakhet Province because of the Thai-Lao Friendship Bridge located there (which provides easy access to Thailand). But it seemed the project would take years to materialize. Hence, Yazaki decided to cooperate with a Laotian company located in Vientiane. Production was not expected to be achieved at a reduced expense because of the high transportation costs involved. As it turned out, the cheaper labour costs were insufficient to compensate for the transport expenses. However, the company strategy to learn about foreign investment conditions potentially promoting future expansion may prove fruitful within the Yazaki long-term regional and global integration strategy.

companies achieved tremendous results, such as an 8 per cent cost reduction of auto parts after engaging in the R&D (value analysis and value engineering) basic course.

[23] Drawn from an interview with Kenji Uematsu, General Manager, Corporate Planning Division, on 26 Nov. 2013.

The lessons to be learned from Yazaki represent a valuable example of the relocation of a labour-intensive production stage to a low labour-cost country. Typically, a simple production process that heavily relies on labour is able to easily relocate. Wire harness is a product that fits into this category. The Yazaki official interviewed for this study is confident that Thailand will assume the same role as Japan has over the past 20–30 years in terms of providing technical support to overseas operations. This is due to the manufacturing experience with Japanese production systems over the past four decades that Thailand has been accumulating.

Yazaki has two plants in Viet Nam[24] (in Binh Duong and Haiphong). There is a link between Thailand and Viet Nam in the second factory, which has investment equity from Japan, at 62.5 per cent, and from Thailand (a Thai Yazaki affiliate), at 37.5 per cent. In 2005, they had 2,500 employees; by 2011 they were employing 5,000 workers. The company received an additional license to expand with a new factory. Its main customers are Toyota (exporting to Japan and North America), Nissan (for South America and Japan), Mitsubishi (Japan) and to domestic carmakers, such as Toyota Viet Nam, Honda Viet Nam and UD Automobile. The majority of sales are for export to two main customers, Toyota and Nissan in Japan. Less than 5 per cent of sales are to local assemblers. The investment strategy of Yazaki is to use Viet Nam's comparative advantage, especially in low labour costs, to be a primary export base for many customers in Japan and the United States. Most of them import materials from other plants, especially from Japan, Thailand and China, and then assemble their products in Viet Nam.

Thai factories are used mainly for domestic producers because of the large home-based demand, with annual production reaching 2.4 million units in 2012. In contrast, Viet Nam automobile production is still small; hence, it is economical to use the Vietnamese production base for export purposes. As yet there is no significant link between the Vietnamese and Thai plants. Yazaki also has operations in the Lao People's Democratic Republic and Cambodia and there is greater potential for links with the Thai operations due to their cheaper labour costs and the reasonable transportation costs.

Links with Cambodia, the Lao People's Democratic Republic, Myanmar and Viet Nam are possible for wire harness production because the manufacturing is labour-intensive and does not have strict "just-in-time"[25] production lines. With the transportation network through the East–West economic corridor and the southern economic corridor, there are possibilities to expand production into the neighbouring countries. The AEC will facilitate cross-border trade and available road networks could cut down maritime shipment times from Viet Nam to Bangkok from ten days to three via road haulage, and from Sawannakhet to Bangkok in less than one day.

Despite the high labour costs in Thailand, Yazaki has no plan to use foreign workers from neighbouring countries. Foreign workers would not lower their production costs because the Thai minimum wage would still be applied. Within the automotive industry, the wage rate is higher than the minimum wage level. It may be better to locate plants to locations where firms are able to minimize transportation costs as well as access cheaper labour. A special economic zone may provide a solution. Recently, Yazaki

[24] This section is drawn from an interview with an IDE-JETRO researcher, who visited Yazaki in Viet Nam in January 2012.

[25] "Just-in-time" is a philosophy to eliminate waste and means making "only what is needed, when it is needed, and in the amount needed." See www.toyota-global.com/company/vision_philosophy/toyota_production_system/just-in-time.html [accessed 30 Nov. 2013].

made a deal with a local manufacturer in Mae Sot (which will be the first special economic zone on the Thailand–Myanmar border in Tak Province) to probe the possibility. Yazaki provides equipment and trains local staff and Myanmar labour to assemble its wire harness sets, which are delivered to automakers in Thailand.[26]

How will Thai operations change after 2015? Yazaki is confident that Thai staff members are capable in both manufacturing and management skills. However, what will be critical for Thai labour is its ability to manage efficiently in different cultural conditions. Yazaki firmly intends to use Thailand as a regional headquarters for production, which will control satellite production locations that expand to the CLMV economies in the near future. This is known as the "Thailand plus one" strategy by Japanese auto parts firms. Global sourcing in automobiles has now been adopted and the suppliers are determined at the product development stage. If Yazaki wins an order, it will need to supply all production locations throughout the world. Hence, for customers in Thailand, there is no need for wire harnesses to be produced by Yazaki Thailand if it is unable to compete with other Yazaki plants.

Based on the current situation, the Thai auto parts industry is poised to lose its comparative advantage in labour-intensive manufacturing – but not because of the AEC. Rather, it is experiencing a normal trend in economic development, similar to what Japan and other industrialized countries have experienced. Yazaki in Thailand will take the same path. Currently, Yazaki is trying to reduce its workforce and move to produce higher value-added products, such as combination meters and column switches. For all companies, skills development and new investment will be necessary to maintain competitiveness.

4.4.3 Thai suppliers' perspectives[27]

The two firms highlighted in this section are large conglomerates, with a history in Thailand that traces back to the 1970s.[28]

Supplier A was established in 1975 to make auto parts and grow alongside its customers. Its main products are springs, axels, brake systems and casting iron items. Its major customers are Auto Alliance, Hino, Honda, Isuzu, Kubota, Mitsubishi Motors, Nissan and Toyota. Supplier A also has various technical relationships with international organizations. For example, under the recommendation of its Japanese customers, Supplier A has a technical assistance agreement with a first-tier supplier in Japan for developing new production processes.

In 2009, the firm made a decision to stop using technical agreements and to become independent in technology-related affairs. It invested about THB400 million in a testing laboratory for springs, stabilizer bars and brakes (some parts). The firm thought it necessary to pursue this path because of the limitations inherent in its technical agreements. After setting up the testing laboratory, product development activity has begun. There are about 40 full-time staff members in the R&D section. Supplier A lost its first-tier

[26] Based on an interview with a management staff of a Japanese car manufacturer in Thailand on 28 Oct. 2013.

[27] This section is drawn from interviews with two Thai parts suppliers on 10 and 25 Oct. 2013.

[28] They spoke only on agreement they would remain anonymous.

status after the Asian financial crisis and now is attempting to improve its capability to become a first-tier supplier again. Although carmakers now require suppliers to have product engineering and product development standards up to benchmark levels, Supplier A's top management is committed to rise to a higher level of production and willing to increase its budget and establish the R&D section as a separate company.

Supplier A is an example of how a local firm struggles with moving into more complicated technological processes in functional parts. Its basic technology tends to be insufficient; hence, external sources of knowledge are crucial. Many local firms acquire technology by hiring Japanese experts to fill in the technological gaps in high value-added activities, such as R&D and testing. When Supplier A obtained a design patent on a disk brake in 2007, it established a cooperation arrangement with King Mongkut's University of Technology North Bangkok and Thailand's National Metal and Materials Technology Center for access to testing capabilities and material technology for product development that Supplier A cannot do on its own. Supplier A also has sent its engineers to learn about new technologies from its partners in other countries as well.

Supplier A thinks that the realities of the AEC will have little impact on its current operations as well as on other auto parts competition. It has no plan to use foreign workers from CLMV economies because it needs skilled labour. In particular, to move up the value chain, it is imperative to have product engineering and design capabilities. Recruiting a few Japanese experts could fill such a gap. In addition, it is not economical to relocate to CLMV economies to lower production costs due to the nature of its capital-intensive production technology and the bulkiness of its products. Supplier A is contemplating investing in other emerging economies. This will be a future step of outward foreign direct investment by Supplier A, a step other Thai conglomerates in the automotive industry are beginning to make.

Supplier B established itself in 1986 as a first-tier supplier and produced trimming parts and other components for almost all carmakers in Thailand. It upgraded its technological capabilities to satisfy customers' needs in the areas of process and product engineering and design capabilities. It has managed to maintain its first-tier status.

According to the interviews conducted for this study, all carmakers currently require "product engineering" (development) capabilities from suppliers. This requirement started in early 2000 when Supplier B joined the global sourcing of Isuzu for front bumpers and reinforcements within their global model. It was the first challenge in the area of product development and engineering activity. To conform to customer requirements, additional investment in hardware technology was needed, such as computer-aided engineering and simulator software. In addition, the supplier needed to send "guest engineers" to Isuzu headquarters to collaborate throughout the entire process of product engineering. Since then, the requirement on product engineering has become the norm for new models launched in Thailand, and the requirements are becoming ever more stringent.

Supplier B's technological capabilities have improved. Automation in its production process expanded over the past 15 years, from 25 per cent to 75 per cent. The firm participated in the product development stage of new pickup trucks of several brands that were launched in Thailand between 2009 and 2012. Product development activities have been extended to cover brake systems, clutch parts, oil tubes and door sashes. Currently, Supplier B employs 26 R&D engineers. For some orders that required product

engineering and product development capabilities, the firm sent guest engineers to participate in the product development stage at customers' R&D centres. This represents a current trend wherein local suppliers are asked to be involved in the product development stage with carmakers in Thailand.

Supplier B is expecting little impact of the AEC on its operations. The firm has made location-strategic and dedicated investment in the same industrial estates near its customers. This is designed to minimize transportation costs. For metal stamping parts, transportation costs are more crucial than wages due to the stringent just-in-time delivery requirements. In view of the labour shortages and rising labour costs, the supplier started using foreign workers in 2010, mainly from Myanmar and peaking at around 400 hires. They were unskilled and were employed under the MOU admission, working on a temporary basis. But the foreign workers were unable to satisfactorily substitute for Thai workers on the production line. They could work only on simple tasks that had no interaction with the production line. Soon, Supplier B reduced the number of foreign workers and at the time of the interview, only 40 foreign workers remained of a once total force of 1,600 people.

To cope with labour shortages and rising wages, Supplier B has continuously supported new ideas to incorporate automation into its production line. There are no plans to increase the number of workers, even though business is now expanding. Increasing sales while maintaining, or even lowering, the workforce means productivity improvement. This implies that automakers and first-tier suppliers will demand higher skills from the labour force. The skills that are crucial for first-tier suppliers include process engineering, mould and die design, value analysis and value engineering and R&D capabilities. Higher education or training in these skills will be increasingly important for suppliers to remain competitive. However, Supplier B stated that his company may not be a representative example because it has sufficient financial capital and is competing with other global suppliers. Foreign workers may be more important for lower-tier local suppliers.

5. Conclusions and policy recommendations

5.1 Conclusions

Thailand's economy has been growing since the recovery from the Asian financial crisis and deeper integration into the global economy. Economic development has been successful in terms of a reduction in the number of people living below the poverty line. Nevertheless, the inequality problem persists, reflected by a wide income gap between the top 20 per cent of the wealthiest households and the bottom 20 per cent. The labour shortage has had an abiding presence, as indicated by the very low unemployment rate and small expansion of the labour force, driving wage rates to increase at a higher rate than productivity. Although, the wage increase was in part due to the prevailing government policy. Labour shortages and low productivity may constrain future expansion of the Thai economy. Competitive advantage in labour-intensive activities will soon erode, hence, the economy must restructure and attempt to move up to higher value-added production.

The establishment of the AEC in 2015 will create a single market and production base, opening opportunities for all members. Regional integration in the automobile trade among ASEAN has been enhanced since the start of the AICO scheme in 1996. Intraregional trade surged tremendously after 2002. Thailand and Indonesia were selected to be primary production and export bases for Japanese carmakers, and each country is now specializing in specific models. This study found that Japanese carmakers have had a leading role in the division of labour within automobile production and regional integration among the ASEAN-5 countries. Combining both production volume and sales, ASEAN will soon be a major exporter at the global level.

Currently, Thailand is the leading country in terms of production and sales in ASEAN. The Thai Government has a vision of increasing production to 3.5–4 million units by 2020. To achieve the target, the industry will demand 570,000 more workers if productivity improves by 15 per cent from the 2010 levels (TDRI, 2012). Accelerating productivity growth and skills development are critical in addressing the challenges fraught with the labour shortage and skills mismatch. The structure of labour demand in the automotive industry will need to change to encompass more semi-skilled and high-skilled labour.

Interviews with a variety of actors in this development confirm that the Thai automotive industry has gradually become involved in higher technological levels, such as process and product engineering, design and R&D activities. In addition, Toyota has selected Thailand to be a regional headquarters in engineering activity, providing technical support to Toyota operations in ASEAN and Asia. This trend also applies to local suppliers. They have to participate early in the product development stage to secure new orders from carmakers.

Also according to the Thailand Development Research Institute (2012), the quantity shortage of labour is due to the smaller number of workers of vocational education level, hence, the number of technicians produced is less than the industry demands. Regarding the quality shortage, automakers and auto parts firms found that technicians and engineers are lacking in some basic skills, such as management, engineering and R&D capabilities. These skills are important to maintain Thailand's position as a leading production and engineering hub in ASEAN.

Although problems from labour shortages and high wages persist, relocation to lower labour-cost countries, such as Cambodia, the Lao People's Democratic Republic, Myanmar or Viet Nam, is not suitable to organizations in the automobile industry due to stringent just-in-time delivery requirements. Employment of foreign workers in simple production operations and labour-intensive activities makes better sense. The relocation of manufacturing to neighbouring countries will continue, but the location will be near the borders of Thailand where road transportation networks are accessible. The ASEAN highway network, especially the East–West economic corridor and the southern economic corridor, may shape a new pattern of trade and investment, which in turn will integrate the CLMV economies into the automobile production network.

5.2 Policy recommendations

To be ready and to take full advantage of the AEC, the following should be considered:

1. The Government should promote and upgrade the skills of automotive human resources to international standards. The skills that will be more important include mould and die making, automation and control technology, production management, lean manufacturing, prototype making and total production management. This will call for cooperation between the Federation of Thai Industries, the Ministry of Labour, universities and the Department of Skill Development to set the targets for labour demanded by the industry, in terms of both quantity and quality. The Thailand Advanced Institute of Science and Technology will need to take an important role in this process.

2. The productivity of existing workers in the industry should be upgraded through skill certification. Skill certification aims to improve labour productivity by ensuring that staff meet minimum skill and capability requirements. This can be done under the National Qualification Framework for workers in the automobile and autoparts industries. The Federation of Thai Industries, Thai Autoparts Manufacturers Association and the Department of Skill Development should cooperate in developing and expanding the necessary range of working standards required to satisfy industry needs.

3. Public and private cooperation in human resource development should be enthusiastically promoted. Under the Japan–Thailand Economic Partnership Agreement, the Japanese and Thai Governments agreed to promote the Automotive Human Resource Development Institute Project, which aims to create high-standard training systems for human resources development within the automotive sector. Under this project, the Thailand Automotive Institute can assemble and distribute training course information to its members, especially local parts suppliers. The Institute Project should cover more participants and wider technical areas than the Automotive Human Resources Development Project. Additionally, this cooperation can be undertaken in other contexts. For instance, the Government can request technical support from private firms to contribute in terms of equipment or know-how to promote skills development. Examples of this include the roles of Toyota and Yaskawa in supporting the Department of Skill Development, both in terms of hardware (equipment for training) and software (training courses).

4. The ASEAN skills recognition framework should be supported and promoted. This is included under the ASEAN Labour Ministers Work Programme 2010–2015. According to this programme, ASEAN has been interested in "progressive labour practices" and links to regional business competitiveness. Recommendations in this programme include a number of discrete actions, such as skill development aiming to improve labour productivity and expansion of labour mobility (including unskilled labour). Thailand can be a facilitator to promote ASEAN skill competitions to strengthen human resources development in Cambodia, the Lao People's Democratic Republic, Myanmar and Viet Nam.

5. Regional development should be encouraged and endorsed. There are some constraints because of the uniform minimum wage, which discourages firms from locating in remote areas. In particular with the automotive industry, firms agglomerate in the central and Eastern Seaboard areas. It is less likely for the whole cluster to relocate. However, with rising wage rates, firms may decide to relocate to neighbouring countries, such as Cambodia, the Lao People's Democratic Republic or Myanmar. In this case, the Government may try to expand the concept of a special economic zone to facilitate the relocation of labour-intensive production to the border of Thailand. The Government is planning to establish the Mae Sot and Mae Sai districts as special economic zones on the western and northern borders of Thailand. Road networks could promote regional economic development and productive integration between Thailand and CLMV economies.

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Annex I. List of parts and HS code from UN Comtrade

Main product groups	Product groups	HS code	Name of the HS 6-digit products
Vehicles	Automobiles	870210	Diesel-powered buses
		870290	Buses, except diesel powered
		870310	Snowmobiles, golf cars, similar vehicles
		870321	Automobiles, spark ignition engine smaller than1,000 cc
		870322	Automobiles, spark ignition engine of 1,000–1,500 cc
		870323	Automobiles, spark ignition engine of 1,500–3,000 cc
		870324	Automobiles, spark ignition engine of >3000 cc
		870331	Automobiles, diesel engine smaller than1,500 cc
		870332	Automobiles, diesel engine of 1,500–2,500 cc
		870333	Automobiles, diesel engine larger than 2,500 cc
		870390	Automobiles NES, including gas turbine powered
		870410	Dump trucks designed for off-highway use
		870421	Diesel powered trucks weighing less than5 tonnes
		870422	Diesel powered trucks weighing 5–20 tonnes
		870423	Diesel powered trucks weighing more than 20 tonnes
		870431	Spark ignition engine trucks weighing less than 5 tonnes
		870432	Spark ignition engine trucks weighing more than 5 tonnes
		870490	Trucks NES
		870510	Mobile cranes
		870520	Mobile drilling derricks
		870530	Fire fighting vehicles
		870540	Mobile concrete mixers
		870590	Special purpose motor vehicles NES
	Motorcycles	871110	Motorcycles, spark ignition engine smaller than50 cc
		871120	Motorcycles, spark ignition engine of 50–250 cc
		871130	Motorcycles, spark ignition engine of 250–500 cc
		871140	Motorcycles, spark ignition engine of 500–800 cc
		871150	Motorcycles, spark ignition engine larger than 800 cc
		871190	Motorcycles with other than a spark ignition engine
Parts	Tires and glass	401110	Pneumatic tyres new of rubber for motor cars
		401120	Pneumatic tyres new of rubber for buses or lorries
		401140	Pneumatic tyres new of rubber for motorcycles
		401220	Pneumatic tyres used
		401290	Solid or cushioned tyres, interchangeable treads
		401310	Inner tubes of rubber for motor vehicles
		700711	Safety glass (tempered) for vehicles, aircraft, etc.
		700721	Safety glass (laminated) for vehicles, aircraft, etc.
		700910	Rear-view mirrors for vehicles

Main product groups	Product groups	HS code	Name of the HS 6-digit products
	Engines and engine parts	840731	Engines, spark-ignition reciprocating, small than50 cc
		840732	Engines, spark-ignition reciprocating, 50–250 cc
		840733	Engines, spark-ignition reciprocating, 250–1,000 cc
		840734	Engines, spark-ignition reciprocating, larger than 1,000 cc
		840790	Engines, spark-ignition type NES
		840820	Engines, diesel, for motor vehicles
		840991	Parts for spark-ignition engines, except aircraft
		840999	Parts for diesel and semi-diesel engines
		841330	Fuel, lubricating and cooling pumps for motor engines
		842123	Oil & petrol filters for internal combustion engines
		842131	Intake air filters for internal combustion engines
		842542	Hydraulic jacks/hoists except for garages
	Electric parts	850710	Lead-acid electric accumulators (vehicle)
		850720	Lead-acid electric accumulators except for vehicles
		850730	Nickel-cadmium electric accumulators
		850740	Nickel-iron electric accumulators
		850780	Electric accumulators, NES
		851210	Lighting & signalling equipment as used on bicycles
		851220	Lighting & visual signalling equipment NES
		851230	Sound signalling equipment
		851240	Windscreen wipers, defrosters & demisters
		851290	Parts of cycle & vehicle light, signal, etc. equipment
		851829	Loudspeakers, NES
		852721	Radio receivers, external power, sound reproduce & record
		852729	Radio receivers, external power, not sound reproducer
		853921	Filament lamps, tungsten halogen
		853929	Filament lamps, except ultraviolet or infra-red, NES
		854430	Ignition & other wiring sets for vehicles, aircraft & ships
	Chassis fitted with engines	870600	Motor vehicle chassis fitted with engine
	Vehicle bodies and parts	870710	Bodies for passenger carrying vehicles
		870790	Bodies for tractors, buses, trucks, etc.
		830120	Locks of a kind used for motor vehicles of base metal
		830230	Motor vehicle mountings, fittings, of base metal, NES
		870810	Bumpers and parts thereof for motor vehicles
		870821	Safety seat belts for motor vehicles
		870829	Parts and accessories of bodies NES for motor vehicles
		870891	Radiators for motor vehicles
		870892	Mufflers and exhaust pipes for motor vehicles
		870894	Steering wheels, columns & boxes for motor vehicles

Main product groups	Product groups	HS code	Name of the HS 6-digit products
		910400	Instrument panel clocks, etc. for vehicles & aircraft, etc.
		940120	Seats, motor vehicles
		940190	Parts of seats
	Brakes and parts under foot	870831	Mounted brake linings for motor vehicles
		870839	Brake system parts except linings for motor vehicles
		870850	Drive axles with differential for motor vehicles
		870860	Non-driving axles & parts for motor vehicles
		870870	Wheels, including parts & accessories for motor vehicles
		870880	Shock absorbers for motor vehicles
	Transmissions and machinery parts	848310	Transmission shafts and cranks, cam and crank shafts
		848320	Bearing housings, etc., incorporating ball & roller bearing
		848330	Bearing housings, shafts, without ball & roller bearings
		848340	Gearing, ball screws, speed changers, torque converter
		848350	Flywheels and pulleys, including pulley blocks
		848360	Clutches, shaft couplings, universal joints
		848390	Parts of power transmission, etc. equipment
		870840	Transmissions for motor vehicles
		870893	Clutches and parts thereof for motor vehicles
	The other auto parts	870899	Motor vehicle parts NES
	Motorcycle parts	871419	Motorcycle parts except saddles
	Trailers	871620	Trailers for agricultural purposes
		871631	Tanker trailers and semi-trailers
		871639	Trailers NES for the transport of goods
		871640	Trailers, semi-trailers NES
		871680	Wheelbarrows, handcarts, rickshaws, etc.
		871690	Trailer & non-mechanically propelled vehicle parts NES

Source: UN Comtrade.

Annex II. Nominal (minimum) wage and CPI 2001–13

Region	Bangkok	Central (Chonburi)	East (Rayong)	South (Ranong)	North-East (Nakorn Ratchasima)	North (Lamphun)	North-East (Mukdahan)	CPI (2011 = 100)
2001	165	143	133	143	143	133	133	75.70
2002	165	146	133	143	143	133	133	76.20
2003	169	150	141	143	145	137	133	77.60
2004	170	153	143	143	145	137	135	79.80
2005	175	157	147	147	150	141	139	83.40
2006	184	166	155	155	158	145	142	87.30
2007	191	172	161	160	162	149	146	89.20
2008	194	175	165	163	165	152	148	94.10
Nov-08	203	180	173	169	170	156	153	93.30
2010	206	184	176	173	173	160	155	96.33
2011	215	196	189	185	183	169	165	100.00
2012	300	273	264	258	255	236	230	103.02
2013	300	300	300	300	300	300	300	104.68

Source: Nominal minimum wage rate compiled from NSO data; consumer price index from the Bank of Thailand website, www.bot.or.th/english/Pages/BOTDefault.aspx [accessed 31 Oct. 2013].

Managing integration for better jobs and shared prosperity in the ASEAN Economic Community: A case of Thailand's automotive sector

This paper examines the socio-economic impact of regional integration through evidence-based analysis and projections for Thailand's automotive industry. The paper discusses issues related to industrial and structural changes that will affect the labour market in Thailand after the ASEAN Economic Community 2015 takes effect. Thailand's key macroeconomic variables in recent years indicate that there exists significant pressure on rising wage rates, tightness in the labour market and sluggish labour productivity. The greater ASEAN Community will enhance connectivity within and beyond the region, which will help Member States become more dynamic and competitive. In terms of the ASEAN automobile industry, production and sales have been expanding due to economic development and the investment strategy of Japanese carmakers. A higher degree of trade and investment integration will occur after investment and trade regimes are liberalized. New investment or the relocation of existing production from high-cost to low-cost production locations will take place; existing supply chains and production networks need to be adjusted. Skill development and productivity improvements will be critical ingredients for prosperity in the ASEAN Economic Community. Public and private collaboration at both the country and regional levels will be indispensible.

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