

Part III: Vietnam's Export Potential and Quality of Growth

Chapter Seven

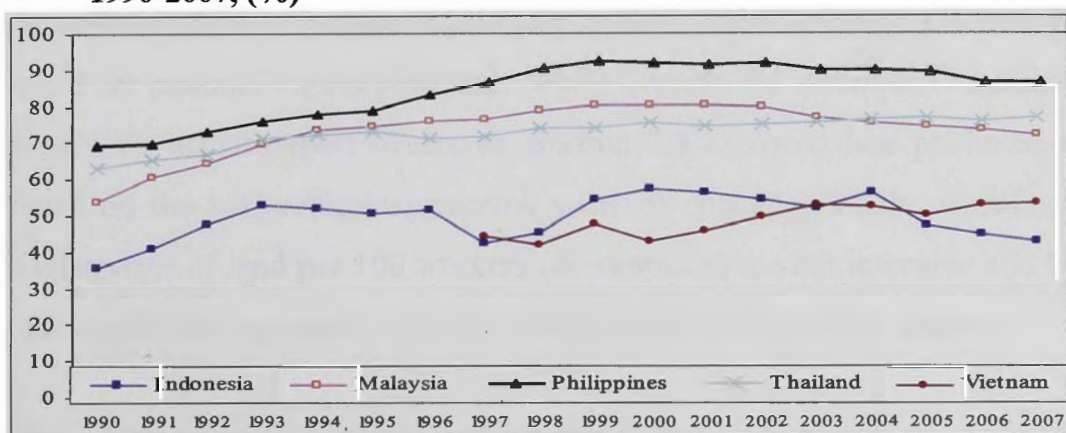
VIETNAM'S EXPORT POTENTIAL

7.1 Introduction

Countries at any level of development must rely on international exchanges for the resources that they themselves lack. Trade must bridge gaps not only in natural resources but also in technological know-how and skills; and in the case of the less-developed countries these latter gaps are immense and growing. Communications and trade connecting these countries with the outside world represent the vital umbilical cord nurturing their growth (Keesing, 1967: 312).

Figure 7.1 shows an overview of the ASEAN-5's patterns of manufactured exports over 1990-2007. Over this period, the Philippines' shares of manufactures in total merchandise exports were highest, peaked at 92 per cent in 1999 and settled at 86.3 per cent in 2007. While those of Malaysia peaked at 80 per cent in four consecutive years from 1999 to 2002 and settled at 72 per cent in 2007, Thailand reached the highest at 77 per cent in 2007. Meanwhile, Indonesia's manufacturing exports fluctuated over this period from the lowest 35 per cent in 1990, peaking at 57 per cent in 2000 and gradually declining to 43 per cent in 2007.

Figure 7.1: ASEAN-5's Share of Manufactures in Total Merchandise Exports, 1990-2007, (%)



Note: Vietnam's data are available from 1997 only.

Source: World Bank database.

Generally speaking, while the second-tier NICs' patterns of manufactured exports seem to reach a saturation point in trading to the world, Vietnam has experienced an increasing trend from 44 to 53.6 per cent between 1997 and 2007. The question is how much more room for development of Vietnam's manufactured exports? In other words, what is Vietnam's manufacturing export potential?

According to CIEM (2002: 87-8), Vietnam's trade sector and economic structure is somewhat anomalous with its resource endowment and level of development. One anomaly is the relatively small share of manufacturing in domestic production and exports. Within manufacturing, another anomaly is the relatively small share contributed by small and medium sized (SMEs) export-oriented companies, and particularly private ones. Although there are these anomalies, it is apparent that the manufacturing sector is growing considerably, and that the role of export-oriented SMEs is expanding, especially in the last few years.

As concluded in Chapter Five with respect to Vietnam's competitiveness that findings of two approaches, the constant market share model and the WEF's global competitiveness index rankings, point to different directions raised concerns about the quality of Vietnam's economic growth and its export potential. While the next Chapter Eight will explore the quality of Vietnam's growth, this chapter will probe Vietnam's export potential to see whether Vietnam has a good foundation for sustaining a high growth in the long run, in order to enhance its standard of living as well as to achieve the NIC status by 2020 as discussed in Chapter Six.

To specifically explore those abovementioned questions, the remainder of this chapter is organised as follows. Section 7.2 briefly reviews the Heckscher-Ohlin model to understand the national export structure. While Section 7.3 discusses Vietnam's and the ASEAN-4's actual export structures, Section 7.4 explores their predicted export ones based on the two variables, average years of education of the workforce and square kilometres of land per 100 workers (decomposed to skill-intensive and labour-intensive manufacturing export). Finally, Section 7.5 concludes this chapter.

7.2 Overview of the Heckscher-Ohlin Model to Understand the National Export Structure

While the Ricardian model focuses only on one factor of production, which is labour as a required element for producing goods and services, the Heckscher-Ohlin (H-O) model expands the number of factors of production from one to two, which are labour and capital in the production of two final goods. This model defines the ratio of the quantity of capital to the quantity of labour used in the production process as the capital-labour ratio. This implies that different industries in the same country (or different countries) producing different products have different capital-labour ratios.

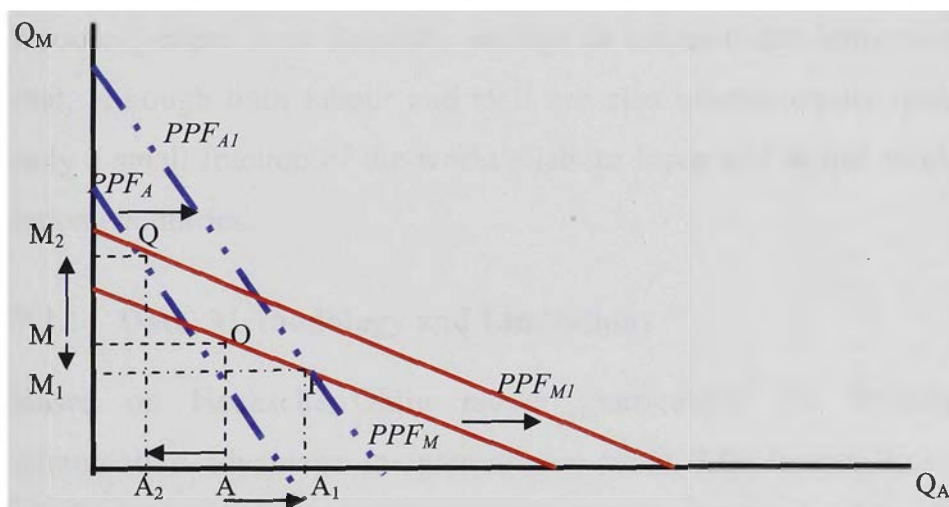
Now, let us suppose a country produces two different types of goods, for instance agricultural (A) and manufacturing (M). An assumption must be made as to which industry has the larger capital-labour ratio, it must be M in this case; and the other good A, must have a large labour-capital ratio. The good M produced by the former is called capital-intensive, and the good A produced by the latter is called labour-intensive. The production of capital-intensive or labour-intensive goods depends mainly on whether a country's resource endowments are abundant in capital or in labour. In general, while the developed countries (North) are capital-abundant relative to developing countries (South), the South are labour-abundant relative to the North, since the North has a larger ratio of capital per unit of labour than the South's ratio. Based on this notion, the H-O theorem predicts the pattern of trade between countries, and it confirms that a capital-abundant country will specialise in exporting the capital-intensive good (M) while the labour-abundant country will specialise in exporting the labour-intensive one (A).

Beside the H-O theorem, there are three other main theorems associated with the H-O model: (1) the Stolper-Samuelson theorem; (2) the factor-price equalization theorem; and (3) the Rybczynski theorem. In this chapter, we discuss only the latter, the Rybczynski theorem. The Rybczynski theorem expresses the association between changes in national factor endowments and changes in the production of the final goods within the context of the H-O model. In brief, it says that when a country's factor endowment increases, it will cause an increase in production of the good, which uses that factor intensively, and consequently a decline in the production of the other

good. This theorem is useful in addressing issues such as population growth, labour force growth and human skill growth etc.; of course, all within the context of the Heckscher-Ohlin model.

Let us have a look at Figure 7.2 to verify the Rybczynski theorem. The production possibility frontier PPF_A and PPF_M represent the labour constraint and the capital constraint respectively. Suppose that the production initially occurs at point O, the intersection between PPF_A and PPF_M . Now, if there is an increase in labour endowment, causing a parallel shift in the labour constraint to the right from PPF_A to PPF_{A1} ; the production will shift from point O to P, which means the agricultural products, a type of labour-intensive good, will rise from A to A_1 ; and the manufactured good, a type of capital-intensive good, will fall from M to M_1 . On the other hand, if the capital-intensive endowment rises, the capital constraint PPF_M will shift right outward to PPF_{M1} , causing a shift of point O to point Q. Consequently, the manufactured good M will increase to M_2 , and the production of agriculture will decrease from A to A_2 .

Figure 7.2: Production Possibility Frontier



It is noted that the difference between the Ricardian and Heckscher-Ohlin model is the former postulates the difference of production technologies between countries, while the latter assumes that production technologies are the same. Also, the Heckscher-Ohlin model assumes there are no differences in the aggregate preferences between countries. The only difference exists is that different countries have different resource

endowments, and this major discrepancy is sufficient to cause different *PPFs* in the two countries such that equilibrium price ratios would differ in autarky.

Mayer and Wood (2001: 6) state that countries tend to export goods whose production makes intensive use of abundant resources in that field, and conversely to import goods which require large inputs of resources that are locally scarce. The resources whose varying supply among countries causes this variation in export composition are three broad ones: skill (or 'human capital', acquired through education and training); land (meaning natural resources of all sorts); and labour (the number of people in the workforce).

However, Mayer and Wood leave out the capital factor (physical or financial) from the list of resources with the reason that capital nowadays is highly mobile among countries, and the cost of capital is similar in most countries as domestic capital markets are linked to international capital markets. So, comparative advantage in merchandise exports among countries is not influenced by the capital intensity factor. Furthermore, if a country has a comparative advantage in a good because of the abundance of a resource, then it can usually obtain the capital needed to develop this resource, either from domestic savings or international borrowings. They also claim that, although both labour and skill are also internationally mobile to some extent, only a small fraction of the world's labour force and skilled workers is able to move among countries.

7.2.1 Data, Methodology and Limitations

Based on Heckscher-Ohlin model (particularly the Rybczynski theorem) of comparative advantage in international trade, Mayer and Wood (2001) develop a model explaining variation among countries in the share of manufactured exports as a consequence of variation in their relative supplies of only two of the three resources: skill and land (instead of capital and labour in the H-O model). Manufactures (as the good M in Section 7.2) of course need a more educated labour force than agriculture, and thus require a much higher ratio of skill to land. This means that countries with high ratios of skill to land tend to export manufactures, and countries with low ratios of skill to land tend to export primary products. Based on this idea and assuming that

manufacturing and primary production are equally labour-intensive, as well as bringing all three resources into the model, Mayer and Wood regress the following equation in their cross-country study for 111 nations:

$$(Xm/Xp) = a + \beta h_i - \gamma n_i + p_i + u_i \quad [7.1]$$

where: Xm = exports of manufactures;

Xp = exports of primary products;

h_i = ratio of skill to labour in country i ;

n_i = ratio of land to labour in country i ;

p_i = total adult population (15-64 years old) in country i ;

a = intercept; and

u = error term.

The skill ratio h expresses as skill per worker (measured in the labour force's average years of school), the land ratio n as land per worker (measured in the country's total land divided by the adult labour force), and the variable p_i used as the country's size to capture possible effects of that country's economies of scale. All the variables are expressed in logarithms. Mayer and Wood (2001) also insist that this specification can be used to explain variation among countries in the composition of manufactured exports. However, since all manufacturing requires only small inputs of land, the ratio of skill-intensive to labour-intensive manufactured exports is not affected much by cross-country variation in n , and depends mainly on variation in h : the share of skill-intensive items in manufactured exports tends to be greater in countries with more skill per worker.

In addition, according to OECD (2003), growth in output per employed person is partly attributable to increases in the average level of skill (or human capital) of those in employment, and educational attainment accounts for a good proportion of human capital embodied in workers. Barro (1991) presents evidence from a broad cross-section of countries, supporting the hypothesis that human capital formation, measured by average years of schooling, is an important contributor to growth. More specifically, Dowrick (2002) insists that countries at a given level of development tend to experience faster rates of growth if they start off with a higher proportion of

teenagers in secondary education, and an increase of one year of schooling in the average educational attainment in the workforce, for example, can be expected to increase the level of output by around eight percent in a typical OECD country.

However, the skill per worker measured by the average school years of the adult population is not an ideal and specific indicator to reflect a true situation of the education quality of a country's labour force, because it does not mention some other channels of education system such as special short courses, on-the-job training etc., as well as cross-country differences in the quality of curriculum, teachers, school facilities, size of classrooms and in particular each country's specifically cultural tradition etc. There is strong cross-country correlation between years of schooling and other aspects of skills; countries with longer schooling tend to provide better quality schooling (Barro and Lee, 1997). Likewise, with respect to land per worker, the use of total land area obviously is not a good gauge of natural resources availability as countries have different land size and quality: arable land and non-arable land such as desert, forest, mineral ores and oil field etc. Particularly Vietnam and Indonesia, among the ASEAN-5, are oil exporters and thus, using total land area may underestimate their natural resources potential. Consequently, the calculations of their manufactured exports potential may be less accurate and overestimated.

Despite the above, the ratio of skill per worker to land per worker, using the adult labour force's average years of education and square kilometres of land per worker, is still a useful and practical way to investigate the development potential of a country's manufacturing sectors. As stated by Mayer and Wood (2001: 9):

It is an unbiased measure, because what each country has, per square kilometre of its surface area, in terms of soil fertility, water resources, minerals and so on, can be regarded as the outcome of a random draw. All resource availability measures are of relative quantities rather than relative prices, even though it is fundamentally the relative cheapness of abundant factors that gives a country a comparative advantage in goods that use them intensively. One reason for using quantity data is that H-O theory predicts that trade reduces (or even eliminates) inter-country differences in factor prices by raising the demand for abundant resources and reducing the demand for scarce ones, making prices in principle a less reliable indicator of the relative abundance of resources. Another, more

practical reason, is that relevant and comparable data on the prices of skill, land and labour do not exist for most countries.

Worth noting is that lacking of data on education prevents us establishing a specific model for the ASEAN-5; we therefore use the Mayer and Wood equation [7.1] above, which can fully be presented in logarithms as follows:

$$\ln(X_m/X_p) = -7.43 + 1.44 \ln(\text{skill/worker}) - 0.57 \ln(\text{land/worker}) + 0.27 \ln(L) \quad [7.2]$$

(-9.0)⁷⁵ (7.1) (-6.3) (2.9) $R^2 = 0.62$

With respect to division of manufactured exports between skill-intensive and labour-intensive product categories,⁷⁶ Mayer and Wood regression is estimated using a smaller set of sixty-nine nations whose manufactures account for 10 per cent at least of total exports. The regression is presented in the following logarithm equation:

$$\ln(X_{sim}/X_{lim}) = -3.7 + 1.59 \ln(\text{skill/worker}) - 0.07 \ln(\text{land/worker}) + 0.01 \ln(L) \quad [7.3]$$

(-4.1) (6.2) (-0.8) (0.1) $R^2 = 0.38$

where: X_m = exports of manufactures;

X_p = exports of primary products;

X_{sim} = exports of skill-intensive manufactures;

X_{lim} = exports of labour-intensive manufactures; and

L = total adult population (15-64 years old).

Obviously, in both equations [7.2] and [7.3], the largest and most significant coefficient is the skill per worker (average adult years of schooling), which means countries with higher average adult years of schooling tend to export more skill-intensive product categories than labour-intensive and agricultural product categories

⁷⁵ The figures in parentheses are t-statistics at the 0.01 significant level.

⁷⁶ Mayer and Wood classify labour-intensive and skill-intensive as follows. (1) **Labour-intensive**: leather and rubber products (SITC2 61-62); wood and paper products (63-64); textiles, clothing, footwear and travel goods (65, 83-85); non-metallic mineral products (66 less 667); iron and steel and metal products (67, 69); furniture and plumbing equipment (81-82); ships, bicycles and trains (78 less 781-784; 79 less 792) and miscellaneous (89, 9 less 941, 971). (2) **Skill-intensive**: chemicals (5 less 522. 24; 522. 56, 524); cut diamonds (667. 29); non-electrical machinery (71-74); computers and office equipment (75); communication equipment (76); electrical machinery (77); motor vehicles and aircraft (781-784; 792) and scientific instruments, watches and cameras (87, 88). Note: The SITC 5-8 categories allocated to primary rather than manufactured exports are phosphorus pentoxide and phosphoric acids (522. 24); aluminium hydroxide (522. 56); radioactive material (524); pearls and precious stones, except cut diamonds (667 except 667. 29) and non-ferrous metals (68).

as in countries with lower levels of skill per worker. The coefficients of the other two variables in equation [7.3], square kilometres of land per worker and total adult population, are small and statistically insignificant as well as the coefficient of determination of the regression ($R^2 = 0.38$). Therefore, Mayer and Wood's model tends to be biased in favour of education variable; particularly only 38 per cent of the variability in the ratio of skill-intensive to labour-intensive can be explained by the variables on the right-hand side of the equation [7.3].

Nevertheless, Mayer and Wood's model can be useful to relatively predict a country's economic structure based on the level of education of the workforce and land per worker.

Data on education, specifically average years of schooling are obtained from Barro and Lee, while all other data are obtained from the World Bank database.

7.3 ASEAN-5's Actual and Predicted Export Structures

Table 7.1 shows an overview of the ASEAN-5's export structures in 2000 and 2007. While Thailand and Vietnam experienced an export decline by 1.8 and 4 percentage points respectively in agriculture; Indonesia, Malaysia and the Philippines increased their agricultural exports by 8.5, 3.6 and 1 percentage points respectively. This can be seen as Malaysia and Indonesia have more land per worker than the other countries in the group as illustrated in figures 7.3 and 7.5 below. With respect to fuels and mining products, while all the ASEAN-4 countries increased their exports in this sector, Vietnam dropped its fuels and mining exports by 5.5 percentage points, from 27.7 to 22.2 per cent. However, while manufactured exports of Indonesia, Malaysia and the Philippines declined by 15, 9 and 5.4 percentage points respectively over this period; the share of Vietnam's exports in this sector increased significantly by nearly 10 percentage points, from 44 to 54 per cent, and that of Thailand was stable at 77 per cent of total exports.

Table 7.1: ASEAN-5's Merchandise Export Structure Between 2000 and 2007 (%)

	2000			2007		
	Agriculture	Fuels & Mining	Manufactures	Agriculture	Fuels & Mining	Manufactures
Indonesia	12.2	29.7	58.1	20.7	36.5	42.9
Malaysia	8.2	10.7	81.0	11.8	16.1	72.1
Philippines	5.3	3.0	91.7	6.3	7.3	86.3
Thailand	18.3	4.5	77.2	16.5	6.3	77.1
Vietnam	28.2	27.7	44.1	24.2	22.2	53.6

Source: World Bank database.

It is noted that in 2007, Vietnam and Indonesia still have highest potential in agricultural exports with more than 20 per cent of total merchandise exports. Also, the share of fuels and mining exports of Vietnam and Indonesia was more than 20 and 30 per cent respectively, compared with more than 10 per cent only for Malaysia and less than 10 per cent for the Philippines and Thailand. This raises somewhat limitations of Mayer and Wood model when using total land area as a variable as discussed earlier.

The following Table 7.2 and figures 7.3 and 7.4 present the ASEAN-5's square kilometres of land per 100 workers and average years of school of the labour force (between 15 and 64 years old). In the first figure, it is noticeable that the Philippines'

and Vietnam's patterns almost overlap on each other as one single line. This is because Vietnam's area (325,490 square km) is slightly larger than that of the Philippines (298,170 square km), and concomitantly the size of Vietnam's labour force with 53,940,579 workers is also a little larger than that of the Philippines with 50,644,619 workers (World Bank data for 2005).

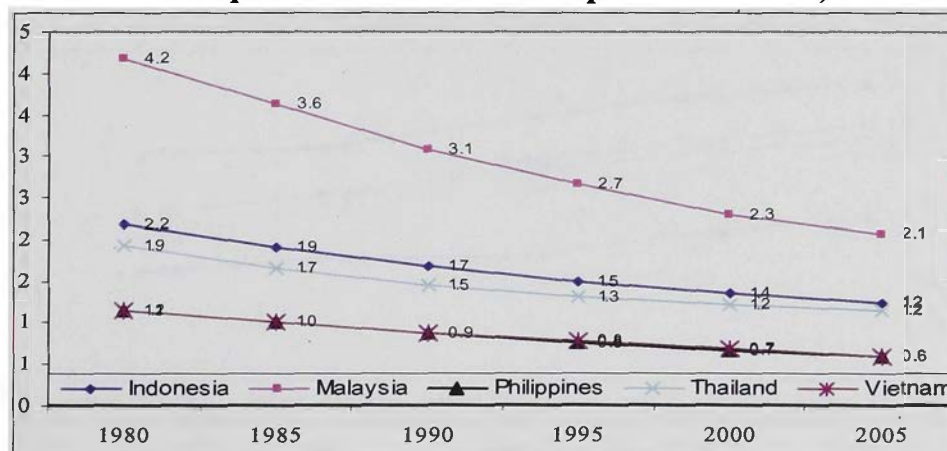
On the other hand, the data on average years of education in Figure 7.4 also show a somewhat good match in the level of education between Vietnam and the Philippines. These interesting factors would draw a quick conclusion that Vietnam's manufactured exports potential would reach a level of around 90 per cent of total merchandise exports as in the case of the Philippines (see Figure 7.1). This statement will be next demonstrated mathematically with more details by using the equation [7.2].

Table 7.2: ASEAN-5's Average Years of Education of Labour Force and Square Kilometres per 100 Workers for 1990, 2000 and 2005

	1990		2000		2005	
	Average Years of Education	Square Km per 100 Workers	Average Years of Education	Square Km per 100 Workers	Average Years of Education	Square Km per 100 Workers
Indonesia	4.01	1.68	4.55	1.35	4.99	1.24
Malaysia	6.03	3.08	6.49	2.30	6.80	2.06
Philippines	7.28	0.87	7.88	0.67	8.21	0.59
Thailand	5.58	1.46	6.08	1.22	6.50	1.15
Vietnam	6.28	0.88	6.74	0.68	7.20	0.60

Source: Data on average years of education for the ASEAN-4 are obtained from Barro and Lee, while those of Vietnam are obtained from Vietnam GSO.

Figure 7.3: ASEAN-5's Square Kilometres of Land per 100 Workers, 1980-2005



Source: World Bank database.

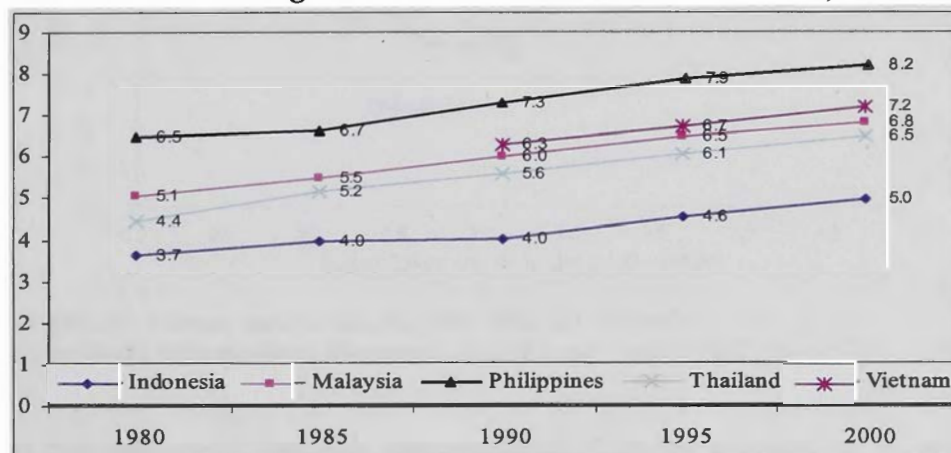
In general, the ASEAN-5's patterns in figures 7.3 and 7.4 show an opposite trend. While the trend in the former is declining because of growing population in each

country, the one in the latter is increasing as countries developing over time usually improve their level of education. In 2005, Vietnam's and the Philippines' labour force was largest, crowded with 0.6 square kilometre of land per 100 workers, then came Thailand, Indonesia and Malaysia with 1.15, 1.24 and 2.06 square kilometres respectively.

Also, in the same year, Vietnam's and the Philippines' average years of education of the labour force were highest among the ASEAN-5 with 7.2 and 8.2 years respectively; while those of Indonesia, Malaysia and Thailand were 5.0, 6.8 and 6.5 years respectively.

Based on these two variables and Mayer and Wood model's argument that countries with higher ratios of skill to land tend to export manufactures and countries with low ratios of skill to land tend to export primary products. This seems to be true for the second-tier NICs but not for Vietnam at the present time, although Vietnam's level of education of the labour force was the second highest in the group after the Philippines; since the share of manufactures of these countries was much higher than their combined share of agriculture and fuels and mining, while that of Vietnam was an inverse until 2007 this ratio was slightly higher for manufactures. If Mayer and Wood's model applied to Vietnam is right, then Vietnam must still have a large untapped potential in manufactured exports.

Figure 7.4: ASEAN-5's Average Years of Education of Labour Force, 1980-2000

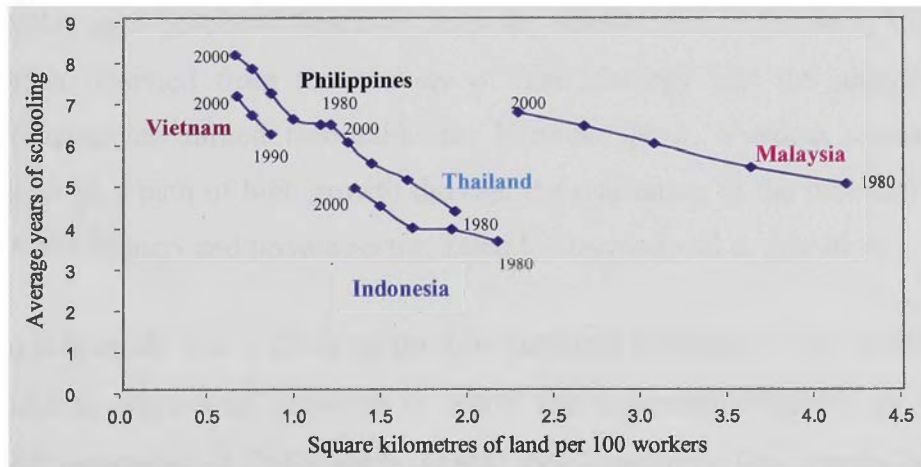


Source: ASEAN-4's data on average years of education are obtained from Barro and Lee (2000); while those of Vietnam are obtained from Vietnam GSO.

Figure 7.5 combines together the ASEAN-5's two factors, average years of schooling and square kilometres of land per 100 workers at five-year intervals from 1980 to 2000. Over the period covered by the figure, each country moved upwards to the left reflecting an increase in average years of schooling and the population growth over time as mentioned above.

While Vietnam and the Philippines have more years of schooling and less land per worker than the others in the group, Malaysia has a combination of both more skill per worker than Indonesia and Thailand, and more land per worker than any other country in the group. Also, as previously mentioned, Mayer and Wood estimated the regression and produced equation [7.2] based on data of 111 countries in 1990. We therefore use the ASEAN-5's data for this year to track their untapped potential in manufacturing sector. However, there were only small disparities between this year's results and those of 2005 as variation of the two variables, average years of education of the labour force and square kilometres of land per worker, is very minimal in a relatively short span of time such as ten or fifteen years; particularly the latter variable would never have a significant change.

Figure 7.5: ASEAN-5's Average Years of Schooling and Square Kilometres of Land per 100 Workers, 1980-2000 (5-year intervals)



Note: Data for Vietnam are available for 1990, 1995 and 2000 only.
Sources: World Bank database, Barro and Lee (2000) and Vietnam GSO.

In this part, we only apply the data into equation [7.2] for Vietnam as an example; the calculations for the ASEAN-4 are not mentioned here and their results are presented together with those of Vietnam in Figure 7.6 below.

$$\begin{aligned}
Ln(X_m/X_p) &= -7.43 + 1.44 Ln(6.28) - 0.57 Ln(0.0088) + 0.27 Ln(37157114) \\
&= -7.43 + 1.44 (1.837) - 0.57 (-4.733) + 0.27 (17.431) \\
&= 2.619
\end{aligned}$$

$$\Rightarrow X_m/X_p = 13.728 \quad [7.8]$$

$$\Rightarrow X_m/X = 13.728 \div (1 + 13.728)$$

$$\Rightarrow X_m/X = 0.93 \quad [7.9]$$

(X is total merchandise exports.)

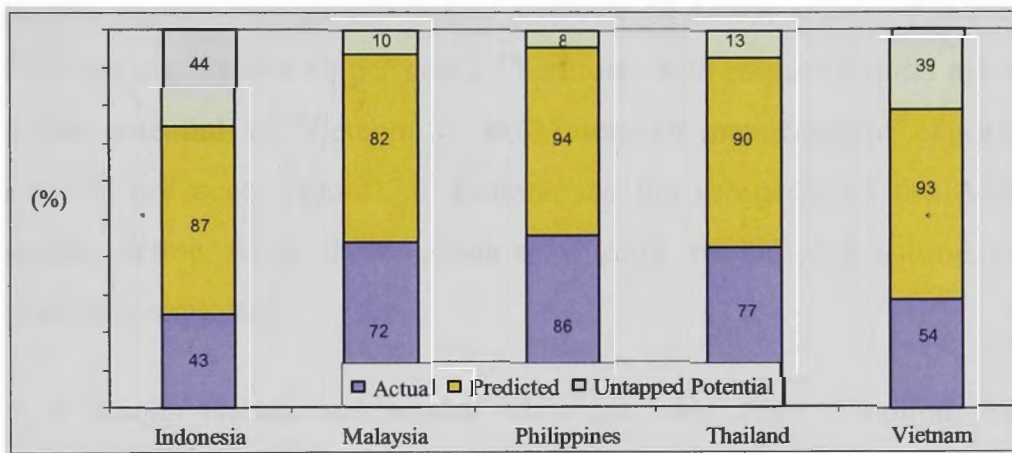
The results suggest that if Vietnam knows how to take advantage of its untapped potential in developing the manufacturing sector to the fullest, then its estimated earnings from manufacturing exports might amount to 1,372 per cent of those from agricultural exports. Most importantly, there is still room for around 40 per cent of manufactured exports to develop as stated by Jenkins (2004) that: 'Given its factor endowment, Vietnam should have a much higher level of exports of labour-intensive manufactures than it had in the late 1990s'. Also, as Ebashi (1997: 65) remarks:

Vietnam has not been able to make full use of its economic potential, despite its large and industrious work force imbued with strong entrepreneurial spirit, its relatively rich natural resources, and to favourable geographical location. In the past, socialist ideology and the international environment did not allow Vietnam to develop such potential. However, since the introduction of Doi-Moi, Vietnam has been liberated from the custody of that ideology and the international environment has turned favourable for Vietnam. Now, Vietnam seems well launched on a path of high growth through the realisation of the potential of its innovative farmers and private sector, aided by international cooperation.

In addition, it is noted that a study of the International Monetary Fund (2006) used the gravity model to regress an equation in which the dependent variable is the bilateral trade of 182 countries in 2002 with 32,942 observations. The result for Vietnam, although did not determine its predicted export structure as analysed in this chapter, however the IMF's study did confirm that: 'The differences between the actual and predicted trade values between Vietnam and the APEC countries, as well as the Asia and Pacific region as a whole, indicate that there is still, on average, some unexploited trade potential' (IMF Country Report, 1/2006: 27). Figure 7.6 below presents the ASEAN-5's actual and predicted export structure of manufacturing exports in 2007.

While it appears that Malaysia, the Philippines and Thailand have used their manufactured production potential to the fullest with an untapped gap as little as 10 per cent, 8 per cent and 13 per cent respectively, Indonesia and Vietnam still have a large untapped potential with 44 and 39 per cent respectively. It is noticeable that Indonesia's untapped potential of 44 per cent from this study is consistent with a conclusion from the IMF Country Report, using the gravity model, in which it states that: 'It is found that Indonesia under-trades with the world economy by around 40 per cent below potential trade, after controlling for size, the level of development and geography' (IMF, Country Report, August 2007: 10).

Figure 7.6: ASEAN-5's Actual and Predicted Structure of Manufactured Exports (%)



Note: Untapped potential is the difference between the actual and predicted manufactured exports.
Source: Author's estimates based on WTO database.

7.4 Actual and Predicted Skill-Intensive and Labour-Intensive Manufactured Export Structure

With regard to Vietnam's development potential in skill-intensive and labour-intensive manufactured exports, the results can be drawn by applying the equation [7.3] above.⁷⁷

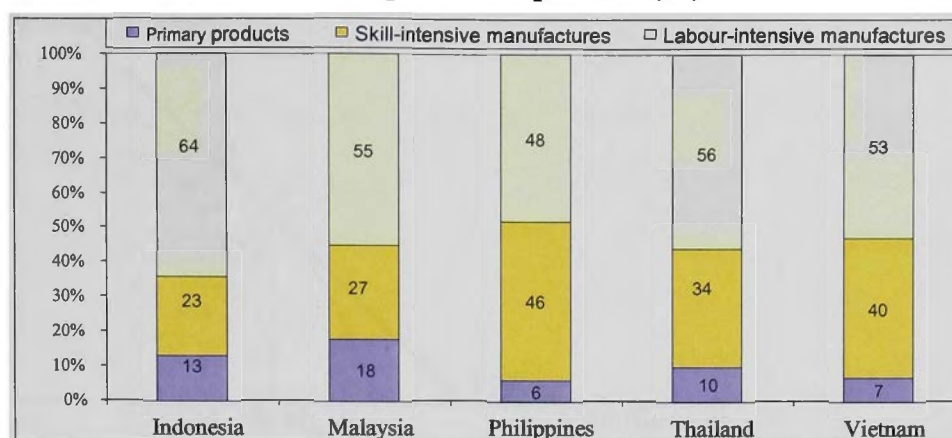
Likewise, based on average adult years of education, square kilometres of land per worker and the labour force between 15 and 64 years old, the predicted earnings from skill-intensive manufactured exports would amount to 76 per cent of earnings from labour-intensive manufactured exports, or equivalent to 43 per cent of total manufactured exports compared with 53 per cent of labour-intensive manufactured exports (93 per cent minus 40 per cent). Therefore, with respect to total merchandise exports, the potential of Vietnam in skill-intensive manufactured exports would amount to 40 per cent. Figure 7.7 summarises the prospects of the ASEAN-5's exports composition when these countries' human capital and natural resources potential is fully exploited.

In brief, if human capital and natural resources were fully exploited, Vietnam's exports structure would encompass 53 per cent of labour-intensive manufactures, 40 per cent of skill-intensive manufactures and 7 per cent of primary products. It is noted that the 7 per cent of agriculture exports appears to correspond with the projected 11 per cent of Vietnam's agricultural output in 2020 as discussed in Chapter Six.

Among the ASEAN-5, the Philippines is the only country that has higher skill-intensive manufactures than Vietnam with 46 per cent; followed by Thailand with 34 per cent, then Malaysia and Indonesia with 27 and 23 per cent respectively.

Indonesia has the largest labour force in labour-intensive manufactures with 64 per cent of total merchandise exports, while this ratio for Malaysia, the Philippines and Thailand is 55 per cent, 48 per cent and 56 per cent respectively.

⁷⁷ It should be emphasised that the calculations provided by Mayer and Wood equation [7.3] are only relative indicators with statistical limitations as discussed earlier.

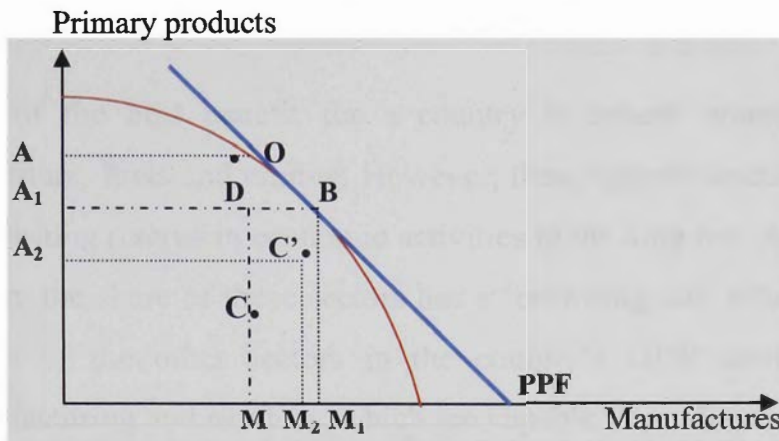
Figure 7.7: ASEAN-5's Predicted Exports Composition (%)

Source: Author's calculation based on WTO database.

It should be emphasised again that the ASEAN-5's untapped potential in manufacturing exports drawn from Mayer and Wood's model provides only as a relative measure to estimate a country's economic structure based on the level of the labour force's education and land resources. It should be concluded that Vietnam has the potential for much increased manufacturing exports without providing an appropriate percentage quantity due to statistical limitations of the model, particularly the unreliability of the equation [7.3] with a relative strength of 38 per cent only.

Figure 7.8 discusses the optimal reallocation of resources for Vietnam. Let us assume that the initial allocation of resources for Vietnam is optimal and that production of manufactures and primary products is located on the production possibility frontier as at point O. As discussed in Figure 7.2 of section 7.2 regarding the H-O model, there is a trade-off between the production of manufactures and primary products. In other words, any increase in the production of manufactures must transpire at the expense of the primary sector. A movement along the PPF curve from point O to point B will increase the production of manufactures from M to M₁, and at the same time cause a decrease in the production of primary products from A to A₁.

If Vietnam allocates resources that are sub-optimal, the production will take place within the production possibility frontier such as at point C; a better allocation of resources would shift C to C', where the production of both manufactures and primary products consequently raises to M₂ and A₂ respectively.

Figure 7.8: Optimal Reallocation of Resources

However, if Vietnam allocates resources to such point as D, there is no capacity for increasing production in primary sector as the dotted line A_1DB represents the country's production possibility frontier that has reached zero marginal productivity in primary production. This means any additional worker assigned to agriculture will not produce any additional output, while raising the number of workers sharing the same incomes in the agriculture sector and thus lower their wages. This is probably true in the case of Vietnam when the square kilometres of land per 100 workers are very small at 0.60 as mentioned in the previous section. Therefore, a better allocation of resources in this case would be a movement of point D along side the dotted line A_1D to B, causing an increase in the production of manufactures from M to M_1 while leaving the production of primary products unchanged at A_1 . Belser (2000: 16) states as follows:

There is currently a large labour surplus in Vietnam's agriculture. The average amount of agricultural land per capita is less than one tenth of an hectare (UNDP, 1999a) and peasants are estimated to be working only 71 per cent of their time (GSO, 1999a). Thus, the agricultural labour force is already larger than what the limited available land can absorb. In such circumstances one may reasonably assume that marginal labour productivity is close to zero, and that each manufacturing job that is not created represents, in the countryside, one more mouth to feed with the same rice bowl. This implies that labour could be drawn from the primary sector into manufacturing without substantially reducing the production of primary goods.

7.5 Conclusion

It is of the best benefit for a country to inherit abundant natural resources in agriculture, fuels and mining. However, these natural assets of a nation are subject to diminishing returns in economic activities in the long run. Also, in simple arithmetical reason, the share of these sectors has a 'crowding-out' effect, lowering the scope for export of the other sectors in the country's GDP such as manufacturing, non-manufacturing and services, which are capable to produce increasing returns and high productivity to help the transition of a developing economy rapidly transforming to a developed one. Furthermore, unlike the export of natural resource-based products, manufacturing exports will help a country's trade balance due to imported inputs for production, and thus maintain a constant exchange rate and a stable economy. In developing countries just integrated into the global trade system like Vietnam, trade deficit in the initial stage of openness due to high proportion of imports of capital goods and intermediate inputs will keep a lower exchange rate, and consequently enhances Vietnam's export-led growth strategy.

Mayer and Wood's model suggests that if Vietnam knows how well to make the most of its human-capital and land resources potential, then it can maximise its manufactured exports potential to the fullest as there is still room for the growth of this sector; and simultaneously minimise its agricultural exports. However, as mentioned earlier, the use of Mayer and Wood's model is just a relative measure to predict a country's potential of manufactured exports because of the limitations of this model as discussed above, and the assumption that manufacturing and primary production are equally labour intensive. This assumption might be true for Vietnam and Indonesia but not so for the second-tier NICs. Furthermore, this model, although distinguishes between skill-intensive and labour-intensive production of an economy, but does not verify whether the classification of skill intensive is indicated by high or low value-added industries.

Nevertheless, relative to other developing countries and to the ASEAN-4, the analysis of this chapter, based on average years of education of the workforce and square kilometres of land per worker, and on the Mayer and Wood relationship, has simply

brought to light that Vietnam inherits both abundant natural resources in agriculture, fuels and mining and an educated labour force, and suggests that Vietnam has the potential for much increased manufacturing exports. In other words, there is substantial scope for further overall growth in Vietnam's total exports, as stated by Belser (2000) that 'Vietnam's high human capital and its large supply of labour relative to land suggest that there is scope for significantly raising manufacturing exports in the near future through a better allocation of resources'.

The fact that Vietnam has strong export potentials in three key areas of agriculture, mining and manufacturing may explain the divergent phenomenon of competitiveness as described in Chapter Five and mentioned earlier in the introduction of this chapter. This means that Vietnam's exports can continue to expand strongly in world markets for some time even if its structural and institutional competitiveness has been declining as shown by the WEF's rankings.

The results of the earlier chapters raise questions, however, about how effectively Vietnam is making use of the education and skills of its population in manufacturing, and hence whether this potential will be realised. Thus, the final chapter of the thesis will address issues surrounding the quality of Vietnam's growth, and hence of its ability, on current policies, to achieve its development path.

This chapter concludes with the following statement.

The Vietnamese economy is still facing numerous difficulties and challenges. The competitiveness of the economy remains low due to factors such as inadequate infrastructure, outdated technology, shortage of skilled workers, poor management and a handicapped business environment etc. The state sector is not yet efficient and has failed to take a leading role as expected while the private sector is still in the early stage of development. Export continues to rely mainly on natural resources, agriculture and other traditional products. The financial and monetary system remains weak. Unemployment and underemployment are still high (VinaTradeUSA, 2006).

Chapter Eight

THE QUALITY OF VIETNAM'S GROWTH

8.1 Introduction

In the long-run, development is largely about increasing the productivity of the labour force, so this is a useful lens through which to analyse the quality of growth and the likelihood that a given growth path will contribute to effective development. The World Bank (2008) states that to assess the capacity of countries in the region to sustain the rapid growth rates of recent years, it is important to determine the extent to which this growth has been accompanied by improvements in productivity. The neoclassical model of growth and a large body of supporting empirical literature have shown that productivity differences are an important determinant of differences in income levels across countries and that productivity growth is the ultimate driver of growth in the long run.

Indeed, the growth of an economy can be observed by the growth of labour productivity or vice versa, as there is a positive correlation between output growth and productivity growth. By definition, the total output growth is the sum of total input growth and total productivity growth. Therefore, it appears that higher (lower) output growth to be associated with higher (lower) productivity growth. And higher productivity growth helps the economy competitive with others by holding the product costs down. This will both keep inflationary pressures moderate and increase the profit, which will then be partly transferred to the workers' real wages. On the other hand, the increase of entrepreneurs' profit will facilitate more investments on research and development, new innovation, new machinery and technology as well as improve human capital by means of education and training. All these activities will further enhance output growth, and this business cycle will keep moving. The end result, thus, is that higher productivity growth contributes significantly to the economic well-being of a country and the quality of life of the workers, as Krugman

(1990: 9) puts in his words: 'Productivity isn't everything, but in the long run it is almost everything. A country's ability to improve its standard of living over time depends almost entirely on its ability to raise its output per worker'.

Having said this, higher productivity growth must be the most important goal for developing countries to aim at in order to reduce poverty and maintain the living standards for both the working class and the aging dependent population; as well as simultaneously enhance their economic prosperity and international competitiveness.

The process of economic development in Vietnam witnesses a substantial reallocation of human resources from low value-added agriculture towards higher value-added industries such as manufacturing, non-manufacturing and services. The World Bank (2001: 12) also states that:

Every country that has successfully modernised labour has been drawn out of agriculture into higher value adding industries. Such a transition will be important in Vietnam not only to enable the industrial growth required to drive growth, but also to increase productivity and to enable agricultural wages to rise. If farmers are to enjoy the same real income gains as the population as a whole, the number of workers in agriculture will need to fall significantly over the decade.

This shift of employment has increased to some extent the labour productivity in agricultural sector, partly due to labour detachment. The services sector has grown in relative proportion to the reduction of employment in agriculture. However, the share of employment in Vietnam's services sector was lowest among the group over 1990-2006. Table 8.1 shows the sectoral shares of total output and total employment of China and the ASEAN-5 for two specific years 1990 and 2006. It is noted that while all countries' labour force experienced a shift from agriculture to manufacturing, non-manufacturing and services sector, the Philippines is the only country experienced a reduction of employment in manufacturing between two periods.

Vietnam faced remarkable challenges in resource reallocation of its economic structure because of serious structural distortions originated from the central planning policy before Doi-Moi, an oversized agricultural (collective farms) and heavy industry

sector (SOEs), and an underdeveloped manufacturing and services sector. That is why, by 2006, within the group, the share of Vietnam's agriculture and non-manufacturing outputs was highest at nearly 20 per cent, while the share of manufacturing and services sector was lowest at 23⁷⁸ and 38 per cent respectively. Nevertheless, Vietnam has gone a far way to higher shares of output and employment in manufacturing and non-manufacturing sector with output increased respectively from 13.9 and 12.3 per cent to 23.3 and 19.2 per cent; and from 7.2 and 4.9 per cent to 12.3 and 6.6 per cent for employment between 1990 and 2006. At the same time, one can see a dramatic change in the reduction of Vietnam's agricultural share of output and employment, from 33.6 and 73.7 per cent to 19.7 and 55.6 per cent respectively. These sectoral shifts reflect Vietnam's ambition to become a newly industrialising country by the year 2020.

Table 8.1: China's and ASEAN-5's Sectoral Shares of Total Value Added (constant 2000) and Total Employment, 1990 and 2006 (%)

		Agriculture		Manufacturing		Non-manufacturing Industry		Services	
		Output	Employment	Output	Employment	Output	Employment	Output	Employment
China	1990	26.8	60.1	25.3	13.3	8.6	8.1	39.3	18.5
	2006	10.8	42.6	34.0	14.6	15.1	10.6	40.1	32.2
Indonesia	1990	19.5	56.0	22.3	10.5	19.0	3.2	39.3	30.3
	2006	14.1	42.1	27.8	11.8	15.9	6.8	42.1	39.3
Malaysia	1990	16.1	26.0	25.2	17.3	18.9	10.2	39.8	46.5
	2006	8.2	14.4	32.8	17.7	16.7	12.6	42.2	55.1
Philippines	1990	17.9	45.2	23.5	10.3	9.1	4.7	49.5	39.7
	2006	14.8	37.0	21.7	8.7	7.6	5.8	55.9	48.5
Thailand	1990	11.8	64.0	25.6	9.5	10.1	4.5	52.4	22.0
	2006	7.8	42.6	36.3	15.2	8.6	5.0	47.3	37.2
Vietnam	1990	33.6	73.7	13.9	7.2	12.3	4.9	40.3	14.2
	2006	19.7	55.6	23.3	12.3	19.2	6.6	37.8	25.5

Source: World Bank database, except China's employment data are from National Bureau of Statistics of China.

Worth noting is that while the average employment growth rate of Vietnam during the 1990s was 2 per cent per annum, this growth rate for 2000-06 was 2.4 per cent, indicating a faster growth in the recent period. The reasons for slower employment

⁷⁸ With the exception of the Philippines' share of manufacturing in total output at 21.7 per cent, slightly lower than that of Vietnam.

growth in Vietnam during the 1990s can be attributed several such as the policy of continued emphasis on import substitution and the promotion of heavy industry (World Bank 2001: 12), and a failure to take advantage of the country's comparative advantage in labour-intensive manufactured goods (Belser, 2000). As a result, capital-intensive industries are believed to have grown at a much faster rate than labour-intensive ones in the 1990s (Institute of Economics, 2002: 37).

According to Belser (2000: 27), between 1992 and 1997, the high growth of Vietnam's GDP was mainly led by the industrial sector which expanded at 13 per cent per annum. However, Vietnam's strong manufacturing growth has only had a moderate impact on industrial employment, which grew by 4 per cent per annum. This represents less than 30 per cent of the rate of industrial growth, while the Asian countries which followed export oriented growth strategies during the last three decades were able to raise industrial employment at annual rates close to 80 per cent of their industrial growth. Specifically, Jenkins (2004: 193) states that:

Between 1990 and 2000, around 6 million new jobs were created in Vietnam; of these about 1 million were in agriculture, forestry and fisheries. While the secondary sector contributed about 10 per cent, of which about 7 per cent were in industry and 3 per cent in construction; the vast majority of new jobs, around three-quarters of the total, were in services. The most important service sector was wholesale and retail trade and the repair of vehicles, which provided 40 per cent of all new jobs, followed by transport, storage and communications with 10 per cent of the total increase.

However, this trend has changed. Within the first six years from 2000, Vietnam's labour market provided around 5.7 million new jobs, increasing from 37.6 million to 43.3 million in 2006. Of which, while manufacturing sector increased 2.1 million workers (36.7 per cent), non-manufacturing sector increased 1.3 million new jobs (22.7 per cent),⁷⁹ and services sector expanded 2.8 million new jobs (49 per cent);⁸⁰

⁷⁹ Of 1.3 million new jobs in non-manufacturing sector, while mining and quarrying occupied 114,200 jobs (8.8 per cent) and electricity, gas and water supply took 90,700 jobs (7 per cent); the majority of new jobs were created in construction industry with 1.1 million jobs (84.3 per cent).

⁸⁰ Within the services sector, wholesale and retail trade, repair of motor vehicles, motor cycles and personal and household goods still obtained the highest portion with 1.2 million jobs (43 per cent of services employment); however transport, storage and communications took only 1.4 per cent of

agriculture and forestry lost nearly 1.1 million jobs (–18.4 per cent) and fisheries enlarged more than half million new jobs (10 per cent).

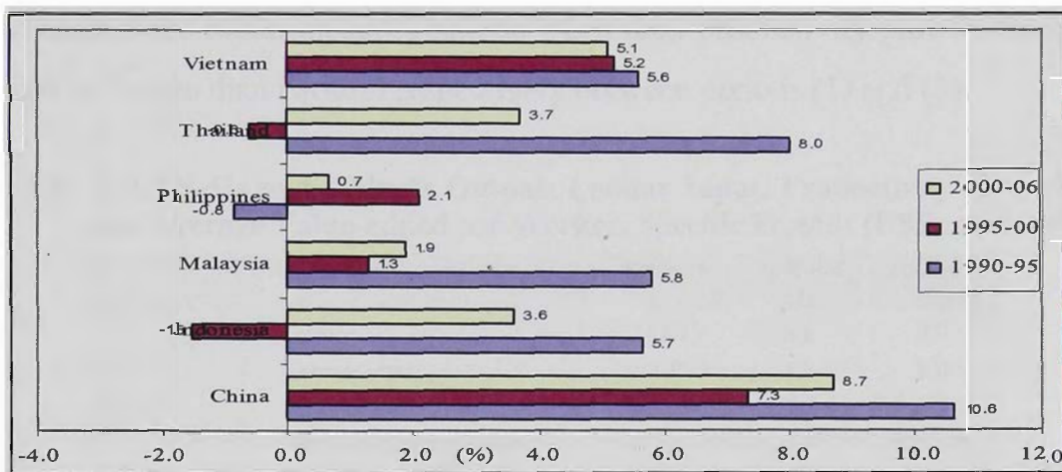
To investigate the quality of Vietnam's growth, the rest of this chapter consists of four sections. Section 8.2 discusses the aggregate productivity growth of the ASEAN-5 plus China, Section 8.3 looks into their sectoral productivity growth in agriculture, manufacturing, non-manufacturing and services. Section 8.4 discusses the issue of Vietnam's extensive and intensive growth, and Section 8.5 summarises and concludes the chapter.

employment in services. The industries gained more than 10 per cent increase of new jobs in the services sector were public administration and defence, compulsory social security (0.34 million jobs, 12 per cent); education and training (11 per cent, 0.3 million jobs); and community, social and personal service activities and private household (11.4 per cent, 0.32 million new jobs).

8.2 Aggregate Productivity Growth

Before moving to sectoral labour productivity, it is necessary to have basic concepts of the whole economy's labour productivity in general. Figure 8.1 presents the ASEAN-5's and China's total labour productivity growth over 1990-2006, which is divided into three sub-periods: (1) 1990-95, (2) 1995-2000, and (3) 2000-06 in order to detect the growth trend for each period. It is noted that labour productivity index is simply calculated by the ratio between output (value-added) index and labour index.

Figure 8.1: ASEAN-5's and China's Labour Productivity Growth, Specific Periods (%)



Source: Author's calculation based on World Bank database.

China's employment data are from National Bureau of Statistics of China (online).

Over the first period before the Asian financial crisis, the productivity growth was very high for all countries except the Philippines with an average negative growth of –0.8 per cent per annum. This happened because the Philippines' average growth rate of output at 2.2 per cent was lower than labour input growth of 3.1 per cent (see Table 8.2). At the same time, Vietnam's productivity growth was about the same as Indonesia and Malaysia at around 5.6 per cent average, which was below China and Thailand respectively at 10.6 and 8 per cent per annum.

Over the second period, the Asian financial crisis impacted badly Indonesian and Thai economy, causing an average negative productivity growth of –1.5 and –0.6 per cent respectively; whereas those of China, Malaysia and Vietnam declined by –3.3; –4.5 and –0.4 percentage points respectively. The Philippines, as discussed in Chapter Five, was the only country not influenced by this crisis with an increase of nearly 3

percentage points from the prior five-year period, from -0.8 to 2.1 per cent. This is because its average output growth during this period was 4.1 per cent, higher than 1.9 per cent average labour input growth.

Over the last period (2000-06), China was still leading in labour productivity growth with an average of 8.7 per cent per annum, followed by Vietnam (5.1 per cent), Thailand (3.7 per cent), Indonesia (3.6 per cent), Malaysia (1.9 per cent) and the Philippines at 0.7 per cent. By and large, with the exception of the Philippines as just mentioned above, all countries' productivity declined over the second period, then slightly picked up in the third period; however still lower than the first one. The serious cases were Malaysia and Thailand when their productivity growth dropped by threefold and more than twofold respectively between periods (1) and (3).

Table 8.2: ASEAN-5's and China's Output, Labour Input, Productivity Growth (%), and Average Value-added per Worker, Specific Periods (US\$ constant 2000)

		1990-95 (1)	1995-00 (2)	2000-06 (3)
China	Output	11.7	8.6	9.8
	Labour input	1.0	1.2	1.0
	Productivity	10.6	7.3	8.7
	Value-added per worker	\$1,167	\$1,663	\$2,745
Indonesia	Output	7.9	0.7	4.9
	Labour input	2.2	2.3	1.2
	Productivity	5.7	-1.5	3.6
	Value-added per worker	\$1,953	\$1,811	\$2,239
Malaysia	Output	9.5	4.9	4.6
	Labour input	3.5	3.6	2.7
	Productivity	5.8	1.3	1.9
	Value-added per worker	\$8,847	\$9,425	\$10,540
Philippines	Output	2.2	4.1	4.8
	Labour input	3.1	1.9	4.1
	Productivity	-0.8	2.1	0.7
	Value-added per worker	\$2,471	\$2,739	\$2,849
Thailand	Output	8.7	0.4	5.0
	Labour input	0.6	1.0	1.3
	Productivity	8.0	-0.6	3.7
	Value-added per worker	\$3,801	\$3,690	\$4,586
Vietnam	Output	8.2	6.9	7.6
	Labour input	2.4	1.8	2.4
	Productivity	5.6	5.2	5.1
	Value-added per worker	\$645	\$815	\$1,106

Notes: While the growth of output, labour input and productivity is the average growth of the period, the value-added per worker is for the year end of each period (1995, 2000 and 2006).

Source: Author's calculation based on World Bank database. China's employment data are from National Bureau of Statistics of China (online).

The best scenario to maximise the growth of labour productivity, is an increase of output growth accompanied by a decrease of labour input growth. An inverse movement will minimise this productivity growth gap, which turns out to be negative when output growth is slower than labour input growth as in the case of Indonesia and Thailand over the second period. Unfortunately, the trend of labour productivity growth in Thailand was getting in deep trouble, falling into the latter case when its labour input growth increased from 0.6 to 1.3 per cent, but output growth decreased from 8.7 to 5 per cent between periods (1) and (3).

It is noted that China's average productivity level per worker in the first two periods was less than that of Indonesia. However, from 2000 onwards (period 3), China has overtaken Indonesia over the US\$2,000 level of productivity per worker, while that of Vietnam was less than one-half of China and Indonesia, at only US\$1,106 in 2006.

As for Vietnam, the growth of labour productivity by and large was relatively good and stable from the beginning of the 1990s, better than the ASEAN-4 in the last two periods with the exception of China over the entire period. However, the level of productivity per worker was very low, still lagging behind all the countries in the group in 2006, about one-half of Indonesia, two-fifths of China and the Philippines, one-quarter of Thailand and one-tenth of Malaysia with a value of US\$1,106 as mentioned above. The question that follows is how is Vietnam's sectoral productivity?

8.3 Sectoral Labour Productivity

8.3.1 Agriculture

During the first years of Doi-Moi, Vietnam issued many policies to spur a raise in rice production such as land reform (giving land to farmers) and de-collectivisation (allowing farmers to directly sell their products to local markets). These policies resulted in transforming Vietnam from a net food importer before 1989 to become the world second-largest rice exporter after Thailand. In 2005, Vietnam exported around 5.3 million tonnes of rice and earning US\$1.4 billion.⁸¹

In most countries relying on labour-intensive technologies, agricultural productivity growth arose from within-farm productivity growth ignited by the shift from large-scale collective farming to small-scale individual farming. In land-abundant countries relying on capital-intensive technologies, agricultural productivity gains arose primarily because large farms shed labour following land privatisation and farm restructuring (World Bank, 2008).

⁸¹ The main markets were Africa, Philippines (the world biggest importer of rice), Indonesia, Malaysia and Cuba with Africa accounting for nearly half of Vietnamese rice export volume (Vietnam General Statistical Office). Some other products contributed largely to the agricultural sector such as:

Coffee: Vietnam's second-largest export product in the world following only Brazil, with 2.4 per cent of total exports. In 2005, Vietnam exported 892,000 tonnes, earning around US\$735.5 million. The main markets are the US and European countries;

Natural rubber: contributed to 2.3 per cent (US\$596 million) of total export value in 2004. The value of this product increased from 75,900 tonnes (US\$66.4 million) in 1990 to 587,000 tonnes valued at US\$804 million in 2005.

Cashews: also Vietnam's second-largest export product in the world after India with a share of around 20 per cent of the world market. Cashew exports increased from 4,900 tonnes at value of US\$14.9 million in 1990 to 109,000 tonnes (US\$501.5 million) in 2005. Major markets are Australia, Canada, China, the EU, the US and some Middle East countries. According to VinaTradeUSA (2006): 'Vietnam is regarded as an efficient producer of cashew with yields being generally higher than in competing countries. Processing is also considered competitive mainly because of low labour cost. However, Vietnam is currently facing the problem of insufficient supply of cashews. The country is importing raw cashews, mainly from Africa for processing for export'.

Pepper is Vietnam's world biggest export product with 95 per cent of raw production exported. Exports have grown from 9,000 tonnes in 1990 (US\$13.9 million) to 109,000 tonnes (US\$150.5 million) in 2005 due to dramatically expanded area devoted to pepper.

Vegetables and fruit exports increased from US\$52.3 million in 1990 to US\$235.5 million in 2005, which accounted for about 15-20 per cent of the production mainly produced for the domestic market in unprocessed forms. The main fruits exported are banana, dragon, litchi, longan, mango, pineapple, rambutan and watermelon. Exported vegetables included beans, cabbage, cauliflower, chilli, cucumber, onion, potato, and tomato. Vietnam's fruit and vegetables are 85-90 per cent in processed forms, mostly canned but also dried and frozen. (All these statistical data are from Vietnam GSO.)

The ASEAN-5's and China's agricultural productivity level per worker in US dollar and arable land (hectare per person) from 1990 to 2005 are presented in figures 8.2 and 8.3 below. They show that, over this period, Thailand had more arable land with an average of 0.275 hectare per person, followed by China (0.107), Indonesia (0.099), Malaysia (0.084) and the same 0.079 for the Philippines and Vietnam (and this is why Vietnam has been ranked second to Thailand in rice exports).

Figure 8.2: ASEAN-5's and China's Agriculture Value-added per Worker (US\$ constant 2000) and Arable Land per Person (hectare)

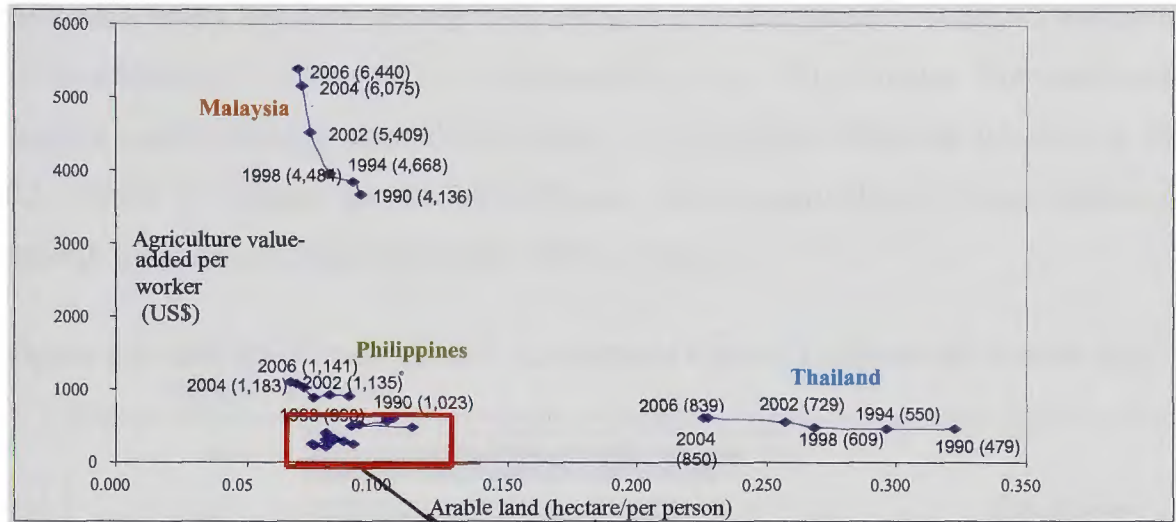
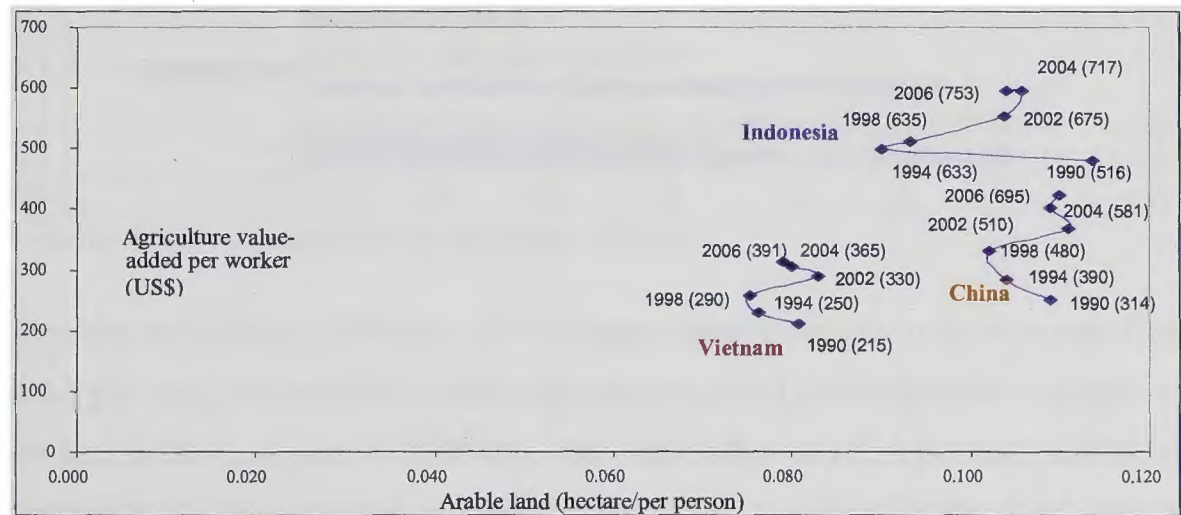


Figure 8.3: Agriculture Value-added per Worker and Arable Land per Person of China, Indonesia and Vietnam



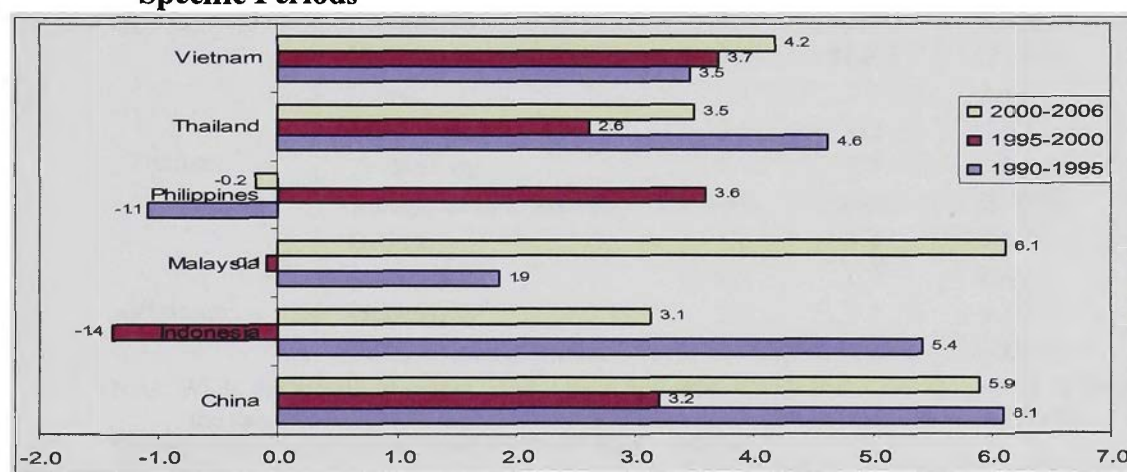
Note: The number in parentheses is the value-added per worker in US dollar (constant 2000 prices).
Source: World Bank database.

In general, all countries tend to move higher to the left due either to an increase of agriculture value-added per worker and population growth over time, or the reduction of arable land for construction of factories, industrial parks, and houses and golf courses as in the case of Vietnam etc. A shift to the left also implies a change in

economic structure from agriculture towards more industrialisation. On the other hand, a move to the right indicates that the country concerned either experiences a negative population growth,⁸² or reclaims more arable land as stated by ADB Outlook (2008): 'significant increases in production of natural rubber and cashew nuts were the result of increased plantings in Vietnam'. While more arable land increased in Vietnam from 1996, this raise for China and Indonesia occurred from 2002 and 1994 respectively.

Although being the second-largest rice exporter in the world, Vietnam's agricultural value-added per worker was lowest among the group. This is due to Vietnam has high surplus employment in agricultural sector than others as discussed recently in Table 8.1. Figure 8.4 shows the ASEAN-5's and China's agricultural labour productivity growth over three sub-periods from 1990 to 2006.

Figure 8.4: ASEAN-5's and China's Agricultural Labour Productivity Growth (%), Specific Periods



Source: Author's calculation based on World Bank database.

Over the first period (1990-95), China's agricultural productivity growth was highest at 6.1 per cent; yet dropped in half in the second period (1995-00) before settled at 5.9 per cent in the third period (2000-06). Indonesia followed at 5.4 per cent, significantly dropped to -1.4 per cent before bouncing back at 3.1 per cent. Thailand was next with 4.6, 2.6 and 3.5 per cent respectively over the same periods. And whereas Vietnam's agricultural productivity growth slightly increased over the entire period from 3.5 to

⁸² This rarely happens in developing countries.

3.7 and 4.2 per cent respectively,⁸³ those of Malaysia and the Philippines were 1.9 and –1.1 per cent, –0.1 and 3.6 per cent, and 6.1 and –0.2 per cent respectively.

Table 8.3: ASEAN-5's and China's Agricultural Output, Labour Input, Productivity Growth and Average Value-added per Worker, Specific Periods (US\$ constant 2000)

		1990-95 (1)	1995-00 (2)	2000-06 (3)
China	Output	4.2	3.5	4.1
	Labour input	-1.8	0.3	-1.7
	Productivity	6.1	3.2	5.9
	Value-added per worker	\$422	\$493	\$695
Indonesia	Output	2.6	1.4	3.2
	Labour input	-2.7	2.8	0.0
	Productivity	5.4	-1.4	3.1
	Value-added per worker	\$671	\$628	\$753
Malaysia	Output	0.0	1.7	3.3
	Labour input	-1.8	1.8	-2.6
	Productivity	1.9	-0.1	6.1
	Value-added per worker	\$4,534	\$4,511	\$6,440
Philippines	Output	1.5	2.2	3.7
	Labour input	2.6	-1.4	3.9
	Productivity	-1.1	3.6	-0.2
	Value-added per worker	\$991	\$1,091	\$1,127
Thailand	Output	1.0	2.3	2.5
	Labour input	-3.5	-0.3	-1.0
	Productivity	4.6	2.6	3.5
	Value-added per worker	\$600	\$682	\$839
Vietnam	Output	4.1	4.4	3.8
	Labour input	0.6	0.7	-0.4
	Productivity	3.5	3.7	4.2
	Value-added per worker	\$255	\$306	\$391

Note: While the growth of output, labour input and productivity is the average growth of the period, the value-added per worker is for the year end of each period (1995, 2000 and 2006).

Source: Author's calculation based on World Bank database.

It is noted that over period (3), Malaysia's agricultural productivity growth was highest at 6.1 per cent, followed by China at 5.9 per cent and 4.2 per cent for Vietnam. Also, it needs to emphasise that Vietnam's agricultural productivity growth slightly increased between periods (1) and (2) because its labour input and output slightly increased from 0.6 and 4.1 per cent to 0.7 and 4.4 per cent respectively. However, its agricultural productivity growth of 4.2 per cent in period (3) was due to a marked decline of –0.4 per cent average growth in labour input and a decline of

⁸³ If based on Vietnam GSO's employment data for 2000-06 period, Vietnam's agricultural productivity was 4.1 per cent for both periods (2) and (3), since labour input was 0.3 and –0.3 per cent respectively for these two periods. Also, it is noted that Vietnam GSO's employment data is available from 2000 only.

output growth from 4.4 to 3.8 per cent between periods (2) and (3). The Strategy for Socio-Economic Development in Vietnam 2001-2010 (Socialist Republic of Vietnam, 2002) aims to achieve an average annual growth rate between 4 and 4.5 per cent for agricultural output. Therefore, unless Vietnam's agriculture would gain a growth of more than 5 per cent in the last four years of the planning period, from 2007 onwards to 2010, otherwise this aim will not be fulfilled.

In 2006, Malaysia had highest agricultural value-added per worker at 17-fold more than Vietnam, followed by the Philippines at 3.5-fold, then Thailand and Indonesia nearly twofold, and China 1.4-fold more than Vietnam (US\$323).

In brief, while the growth of Vietnam's agricultural productivity was relatively strong and stable; its productivity level was very low.

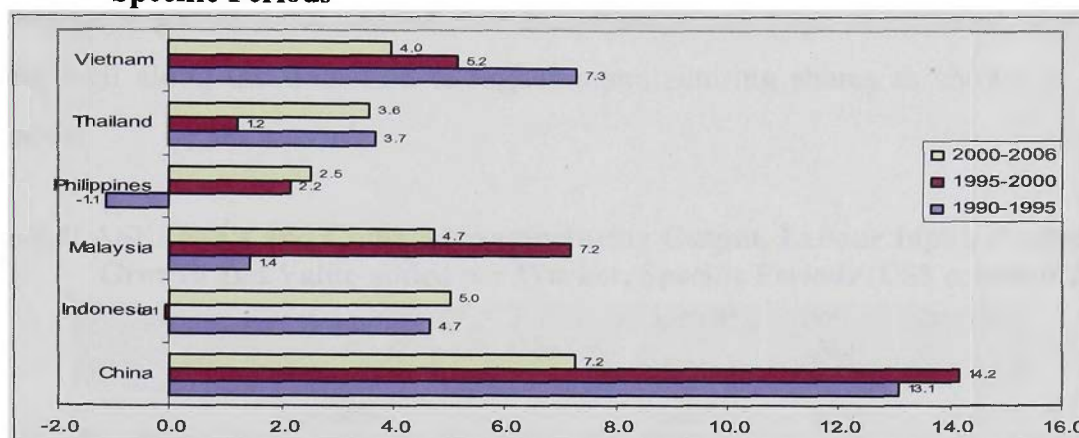
8.3.2 Manufacturing

In contrast to increased productivity of agricultural sector, the growth of Vietnam's manufacturing productivity was declining over time. Over the first period, Vietnam ranked second at 7.3 per cent average growth, only after China 13.1 per cent. However, during the second period, this position dropped to third after China and Malaysia as Vietnam's manufacturing productivity growth declined from 7.3 to 5.2 per cent average, below China and Malaysia at 14.2 and 7.2 per cent respectively. Moving to period (3), Vietnam dropped further one level to 4 per cent average, lower than China, Indonesia and Malaysia at 7.2, 5 and 4.7 per cent respectively. Meanwhile, Thailand was slightly lower than Vietnam at 3.6 per cent and the Philippines at 2.5 per cent average.

The reason for Vietnam's declining productivity growth in manufacturing sector is that, while its output growth increased insignificantly, from 10.3 to 11.2 and 11.8 per cent average over three sub-periods; its labour input growth largely increased, doubling from 2.8 to 5.8 per cent average between periods (1) and (2), and nearly threefold with 7.5 per cent average in period (3). In the meantime, all other countries' labour input growth has declined by and large. Specifically, while Vietnam's manufacturing sector created 1.2 million new jobs over the first two periods, the

number of new jobs created in this sector was 2.1 million over the last period alone, an increase of nearly 37 per cent of total increase of employment between 2000 and 2006.

Figure 8.5: ASEAN-5's and China's Manufacturing Labour Productivity Growth (%), Specific Periods



Note: China's manufacturing productivity growth is from 1990 to 2003 only.

Source: Author's calculation based on World Bank database.

It needs to emphasise that, according to Vietnam's GSO data, the flow of FDI into the country from 1988 to 2007 was US\$99.6 billion registered capital or US\$43.1 billion implemented capital, which was allocated mostly in manufacturing sector with 52.6 per cent of total implemented capital. Significant increases of FDI from an average growth of -1.1 per cent in period (2) to 9.2 per cent in period (3), an increase of 10.4 percentage points for implemented capital, induced a considerable surge of labour inputs while outputs still in premature stage and mostly in low value-added industries such as clothing, footwear, textiles etc.⁸⁴ This also implies that high manufacturing productivity growth of 7.3 per cent average in period (1) was actually due to Vietnam's low base from the beginning of the reform process.

Table 8.4 shows the ASEAN-5's and China's manufacturing growth of output, labour input, labour productivity and the value-added per worker in US\$ (constant 2000 prices) for these periods.⁸⁵

⁸⁴ According to UNDP (2007), *Top 200 Industrial Strategies of Vietnam's Largest Firms*: 'Over 60 per cent of the top 200 manufacturing workers are employed in forty-two footwear, textile, garment and seafood processing companies'.

⁸⁵ It is noted that, if based on Vietnam GSO's employment data for 2000-06 period, manufacturing productivity was 4.9 and 3.4 per cent respectively for periods (2) and (3) since labour input was 6.1 and 8.1 per cent for these two respective periods.

In 2006, Vietnam's manufacturing value added per worker was lowest at US\$2,089; only two-fifths of Indonesia (and China in 2003), less than one-third of the Philippines, one-fifth of Thailand and one-tenth of Malaysia.

Generally speaking, Vietnam's manufacturing productivity is at a very low level and showing slow growth over 2000-06 for the development stage of Vietnam, a country moving well along the transition to higher manufacturing shares as shown in Table 8.1 above.

Table 8.4: ASEAN-5's and China's Manufacturing Output, Labour Input, Productivity Growth and Value-added per Worker, Specific Periods (US\$ constant 2000)

		1990-95	1995-2000	2000-06
		(1)	(2)	(3)
China	Output	16.0	9.7	11.2
	Labour input	2.6	-3.9	3.7
	Productivity	13.1	14.2	7.2
	Value-added per worker	\$2,468	\$4,786	\$5,904
Indonesia	Output	10.6	2.8	4.9
	Labour input	5.7	2.8	-0.1
	Productivity	4.7	-0.1	5.0
	Value-added per worker	\$3,946	\$3,933	\$5,273
Malaysia	Output	11.6	8.3	4.7
	Labour input	10.1	1.0	0.0
	Productivity	1.4	7.2	4.7
	Value-added per worker	\$10,455	\$14,790	\$19,498
Philippines	Output	2.0	3.1	4.4
	Labour input	3.2	1.0	1.8
	Productivity	-1.1	2.2	2.5
	Value-added per worker	\$5,526	\$6,149	\$7,135
Thailand	Output	12.1	2.7	6.4
	Labour input	8.1	1.5	2.7
	Productivity	3.7	1.2	3.6
	Value-added per worker	\$8,343	\$8,866	\$10,947
Vietnam	Output	10.3	11.2	11.8
	Labour input	2.8	5.8	7.5
	Productivity	7.3	5.2	4.0
	Value-added per worker	\$1,285	\$1,653	\$2,089

Notes: China's manufacturing data are from 1990 to 2003 only.

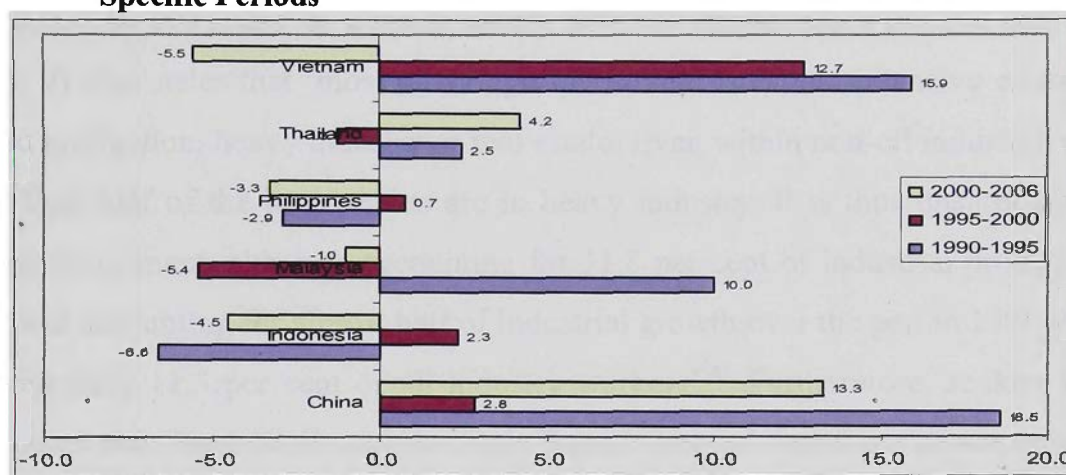
While the growth of output, labour input and productivity is the average growth of the period, the value-added per worker is for the year end of each period (1995, 2000 and 2006).

Source: Author's calculation based on World Bank database.

8.3.3 Non-manufacturing (Industry)⁸⁶

Moving together with declining manufacturing productivity growth, the growth of Vietnam's non-manufacturing labour productivity also declined over the entire 1990-2006 period, from very high 15.9 per cent in period (1) to 12.7 per cent in period (2) and settled at -5.5 per cent in period (3).

Figure 8.6: ASEAN-5's and China's Non-manufacturing Productivity Growth (%), Specific Periods



Note: China's non-manufacturing data are from 1990 to 2003 only.

Source: World Bank database.

The reason for high productivity growth during the 1990s is due to falling labour input growth of -1.8 and -2.4 per cent per annum over the first two respective periods, reflecting the policy of continued emphasis on import substitution and the promotion of heavy industries that made this sector growing at a much faster rate than labour-intensive one as mentioned earlier.⁸⁷ According to Jenkins (2004: 202):

Between 1990 and 1995, the growth of productivity in SOEs reduced the potential number of jobs by 650,000. This is consistent with the view that retrenchment of SOEs workers in the early 1990s contributed to the low rate of growth of employment overall between 1990 and 1995. The loss of jobs attributable to productivity growth among SOEs represented 87.7 per cent of SOEs employment in 1990, while the corresponding figure for domestic firms was 54.4 per cent. Between 1995 and 1999, however, there was no difference

⁸⁶ Non-manufacturing industries encompass mining and quarrying; electricity, gas and water supply; and construction.

⁸⁷ According to UNDP (2007): 'Vietnam's state firms (SOEs) in the top 200 account for nearly 30 per cent of workers employed by state firms. Put another way, 3 per cent of state firms account for almost 30 per cent of employment, nearly two-thirds of assets, over 40 per cent of taxes paid by state firms'.

between the productivity effects for SOEs (45.5 per cent) and for private firms (45.2 per cent). This implies that the ability of SOEs to increase output without taking on additional workers in the late 1990s was no greater than that of other local firms.

In addition, Chandrasiri and de Silva (1996) claim that reforms introduced in 1989 ended the budgetary subsidies to SOEs increased interest rates and hardened the budget constraint. The number of SOEs was reduced from over 3,000 in 1989 to just over 2,000 in 1993, and as a result nearly 800,000 employees were laid off. Belser (2000: 9) also states that 'most of foreign investment is capital-intensive entered oil-related production, heavy industry or real estate. Even within non-oil industrial sector, more than half of the investments are in heavy industry. It is thus unsurprising that foreign investment, although accounting for 31.8 per cent of industrial production in 1998 and accounting for almost half of industrial growth over the period 1995-98, still employs only 11.5 per cent of all industry workers'.⁸⁸ Furthermore, Jenkins (2004: 200) states that: 'both SOEs and domestic firms increased output per person employed significantly during the 1990s. In the case of SOEs, this was particularly marked during the first half of the decade when there was a wave of rationalisation and total employment in SOEs declined. For domestic firms, the growth of productivity was of continuous significance throughout the period'.

Nevertheless, the situation has changed from 2000 when the final number of jobs lost in this sector was around 300,000 during the 1990s, the number of new jobs created in period (3) was more than 1.6 million, growing from 1.2 million in 2000 to 2.8 million in 2006 indicating an increase of 15 per cent per annum over this period. This rapid growth of employment was the cause for productivity fall from 15.9 and 12.7 per cent in the first two respective periods to -5.5 per cent per annum in the last period. This productivity decline experienced in all three sectors with -2.4 per cent for mining and

⁸⁸ Also, according to Leung (2006): 'because of the historical protection of the state sector in Vietnam's trade regime, 98 per cent of the foreign joint ventures have been with the SOEs. As a result, 31 per cent of FDI projects by value are in heavy industries and oil and gas. As expected, these are also highly-protected industries such as car and motorbike production, cement, steel and consumer-electronic assembly. Therefore, despite the fact that foreign-invested companies in 2001 contributed about 13 per cent to Vietnam's GDP, 35 per cent to industrial output, 23 per cent to export, and 25 per cent to total state budget, the contribution of FDI to overall employment was only 0.3 per cent' (Leung 2006: 16, cited in Le 2002).

quarrying, -0.9 per cent for electricity, gas and water supply and -1.7 per cent for construction.

Diminution of fuel exports, which accounted for more than one-fifth (22 per cent) of total merchandise exports over 2000-06, definitely has contributed to Vietnam's declining non-manufacturing productivity. In addition, Asian Development Outlook (2008) also confirms that Vietnam's mining output suffered from a 7.4 per cent contraction in crude oil production as output at the White Tiger oil field, the biggest of the country becomes depleted.

It is noted that the growth rate and contribution to growth of mining and quarrying industries dropped significantly from 12.2 to 3.8 per cent and from 10.4 to 3.0 per cent respectively between periods (2) and (3). While Table 8.5 shows these changes of Vietnam's non-manufacturing industries over 1995-2006 at constant 1994 prices, the following Table 8.6 presents the ASEAN-5's and China's non-manufacturing output, labour input, productivity growth and value-added per worker at constant 2000 prices.

Table 8.5: Vietnam's Growth Rates, Contribution to Growth, Output, Labour Input and Productivity for Non-manufacturing, 1995-00, 2000-06, Constant 1994 Prices

	Growth Rates		Contribution to Growth		Out-put	Labour Input	Product-ivity
	1995-2000	2000-2006	1995-2000	2000-2006	Average Growth 2000-2006		
Total economy	7.0	7.5	100	100	7.6	2.4	5.1
Mining & quarrying	12.2	3.8	10.4	3	3.8	6.3	-2.4
Electricity, gas & water supply	13.4	12.1	3.8	4.1	12.1	13.1	-0.9
Construction	7.2	10.8	7.8	11.6	10.8	12.7	-1.7

Note: Vietnam's employment data for non-manufacturing industries are available from 2000 only.

Source: Vietnam GSO.

Between 2000 and 2006, Vietnam's value-added per worker declined by 29 per cent, from US\$4,551 down to US\$3,238. Compared with the ASEAN-4, this level of productivity was about three-fifths of Indonesia, nearly one-quarter of Malaysia, 88 per cent of the Philippines and two-fifths of Thailand.

Worth noting is that Vietnam's level of productivity in this sector was higher than that of China⁸⁹ but lower than the ASEAN-4 except catching up with the Philippines in

⁸⁹ China's data in period (3) is up to 2003 only.

period (2), however settled slightly below the Philippines in 2006 as mentioned above. Also, over period (3), while China's non-manufacturing productivity growth was highest at 13.3 per cent average, followed by Thailand at 4.2 per cent, those of other countries in the group experienced negative growth rates, including Vietnam at -5.5 per cent per annum.

Table 8.6: ASEAN-5's and China's Non-manufacturing Output, Labour Input, Productivity Growth and Value-added per Worker (US\$ constant 2000)

		1990-95	1995-2000	2000-06
		(1)	(2)	(3)
China*	Output	21.2	9.9	8.2
	Labour input	2.3	6.9	-4.5
	Productivity	18.5	2.8	13.3
	Value-added per worker	\$1,760	\$2,022	\$2,940
Indonesia	Output	7.9	-0.1	2.5
	Labour input	15.6	-2.4	7.4
	Productivity	-6.6	2.3	-4.5
	Value-added per worker	\$6,186	\$6,944	\$5,264
Malaysia	Output	10.4	3.2	3.2
	Labour input	0.3	9.2	4.3
	Productivity	10.0	-5.4	-1.0
	Value-added per worker	\$19,775	\$14,952	\$14,052
Philippines	Output	2.4	6.0	0.0
	Labour input	5.4	5.2	3.4
	Productivity	-2.9	0.7	-3.3
	Value-added per worker	\$4,343	\$4,507	\$3,694
Thailand	Output	9.8	-4.3	5.5
	Labour input	7.1	-3.1	1.2
	Productivity	2.5	-1.3	4.2
	Value-added per worker	\$6,574	\$6,173	\$7,916
Vietnam	Output	13.8	10.0	8.6
	Labour input	-1.8	-2.4	15.0
	Productivity	15.9	12.7 **	-5.5 **
	Value-added per worker	\$2,500	\$4,551	\$3,238

Notes: * China's non-manufacturing data are from 1990 to 2003 only.

** If based on Vietnam GSO's employment data for 2000-06, productivity growth for periods (2) and (3) was 10.4 and -2.8 per cent respectively since labour input was -0.4 and 11.7 per cent respectively.

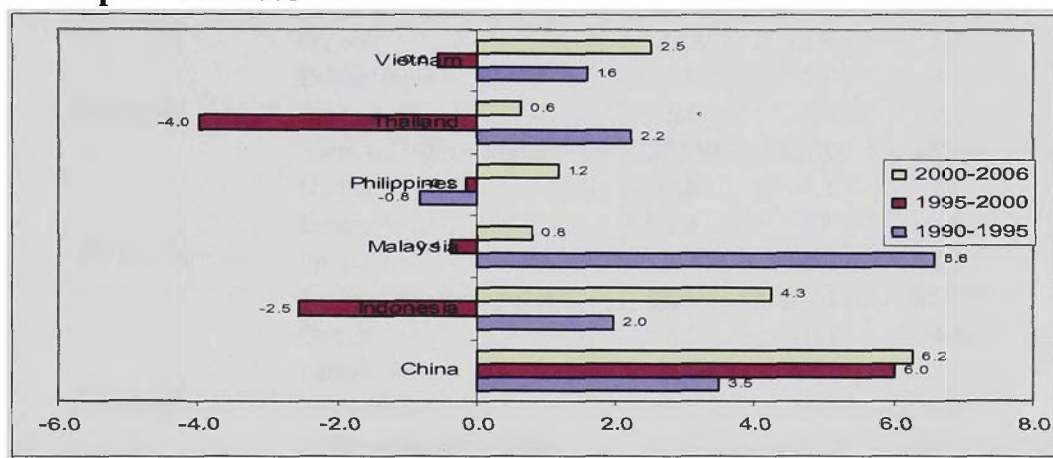
While the growth of output, labour input and productivity is the average growth of the period, the value-added per worker is for the year end of each period (1995, 2000 and 2006).

Source: Author's calculation based on World Bank database.

8.3.4 Services

According to the World Bank (2008: 97), improved productivity in services sector may affect aggregated productivity growth directly and indirectly. For example, high quality market services such as transport or telecommunications affect production costs and, consequently, the competitiveness and the degree of integration into global markets of firms in all sectors. In addition, high-quality services may also influence the attractiveness for FDI. Services liberalisation may help increase average productivity for incumbent firms and may also facilitate new entry of firms likely to be more innovative and successful in meeting consumer demands and similarly encourage the exit of less-productive firms.

Figure 8.7: ASEAN-5's and China's Services Labour Productivity Growth (%), Specific Periods



Source: Author's calculation based on World Bank database

Like other sectors of the economy as discussed above, there was wide variation of country performance across the services sector of the ASEAN-5 and China. Over the first period, while Malaysia's average services productivity growth was highest at 6.6 per cent, followed by China, Thailand and Indonesia at 3.5, 2.2 and 2.0 per cent respectively, Vietnam gained only 1.6 per cent, higher than the Philippines at -0.8 per cent.

Over the second period, while all the ASEAN-5's productivity experienced negative growths, China was the only country escaped the harmful impacts of the Asian financial crisis when its average services productivity growth increased from 3.5 to 6.0 per cent mainly due to a fall of more than twofold in the growth of labour inputs; then maintained a growth of 6.2 per cent per annum from 2000 onwards. China's high

productivity growth from 1995 onwards helped its services sector's productivity level overtook that of Indonesia, at the level of US\$2,000. From 2000, all countries witnessed an increasing trend of productivity growth in the services sector, especially Indonesia and Thailand with an increase of 6.8 and 4.6 percentage points respectively.

Table 8.7: ASEAN-5's and China's Services Output, Labour Input, Productivity Growth and Value-added per Worker (constant 2000), Specific Periods

		1990-95	1995-2000	2000-06
		(1)	(2)	(3)
China	Output	10.8	9.5	10.1
	Labour input	7.1	3.3	3.7
	Productivity	3.5	6.0	6.2
	Value-added per worker	\$1,772	\$2,373	\$3,413
Indonesia	Output	8.8	-0.5	6.4
	Labour input	6.7	2.1	2.1
	Productivity	2.0	-2.5	4.3
	Value-added per worker	\$2,122	\$1,866	\$2,396
Malaysia	Output	10.8	3.9	5.3
	Labour input	4.0	4.3	4.5
	Productivity	6.6	-0.4	0.8
	Value-added per worker	\$7,850	\$7,706	\$8,079
Philippines	Output	2.6	4.7	6.1
	Labour input	3.4	4.9	4.9
	Productivity	-0.8	-0.2	1.2
	Value-added per worker	\$3,085	\$3,061	\$3,286
Thailand	Output	8.1	-0.5	4.4
	Labour input	5.8	3.6	3.8
	Productivity	2.2	-4.0	0.6
	Value-added per worker	\$6,877	\$5,613	\$5,829
Vietnam	Output	8.6	5.7	7.2
	Labour input	7.0	6.3	4.6
	Productivity	1.6	-0.6	2.5
	Value-added per worker	\$1,455	\$1,415	\$1,640

Source: Author's calculation based on World Bank database.

Robust domestic demand, from 2000 onwards, contributed to total output (GDP) growth largely by industries such as tourism with a marked increase in sales (16.4 per cent); transport, storage and communications; and hotels and restaurants (same 4.1 per cent) and education and training (3.3 per cent). Surging demand for mobile phones is helping drive the manufacturing expansion, as sales soared, the number of telephones per 100 people rose to about 31 in 2006 from 19 in 2005, and is expected to exceed 50 by the end of 2009 (ADB, 2007).

In 2006, Vietnam's level of services productivity per worker was lowest at US\$1,640; less than one-half of China and the Philippines, one-fifth of Malaysia, more than one-quarter of Thailand and about one-third of Indonesia. Table 8.8 shows Vietnam's contribution to growth, the growth of output, labour input and productivity for this sector over 1995-2000 and 2000-06 at constant 1994 prices.

It is noted that, in 1990, Vietnam's services sector contributed to 40 per cent of GDP with a value of US\$6 billion (constant 2000 prices). In 2006, this contribution dropped by 2 percentage points, at nearly 38 per cent while that of the Philippines was highest at 56 per cent, followed by Thailand 47 per cent, China 40 per cent and the same 42 per cent for Indonesia and Malaysia. Moreover, the average share of Vietnam's services sector to GDP over the last period was only 36 per cent, indicating a level of 6-7 per cent below the target set by Vietnam Strategy for Social-Economic Development 2001-2010. Therefore, it appears that this target would not be achieved by 2010 as in the case of agricultural sector.

Table 8.8: Vietnam's Contribution to Growth, Output, Labour Input and Productivity Growth for Services Sector for 1995-2000, 2000-06 (US\$ constant 1994)

	Contribution to Growth		Out-put	Labour Input	Product-ivity
	1995-2000	2000-2006			
Total	100	100	7.6	2.4	5.1
Sales ^(a)	14.1	16.4	7.6	4.6	2.9
Hotels & restaurants	2.7	4.1	9.3	2.3	6.9
Transport, storage & communications	3.7	4.1	7.8	0.6	7.2
Financial intermediation	2.2	2.1	7.8	16.0	-7.0
Scientific & technology	0.5	0.6	8.4	5.6	2.7
Real estate, renting & business	3.2	2	3.7	18.7	-12.6
Public admin., defence, compulsory social security	1.2	2.1	5.8	11.4	-5.0
Education & training	2.8	3.3	7.6	4.6	2.9
Health & social work	1.2	1.4	7.5	8.7	-1.1
Recreational, cultural & sporting	0.6	0.5	6.4	0.3	6.1
Party activities, membership org.	0.2	0.1	6.2	17.9	-9.9
Community, social, personal service activities	2.3	1.6	6.2	8.7	-2.4 ^(b)
Private household with employed persons	0.2	0.1	4.1	n/a	n/a

Notes: (a) Wholesale and retail trade, repair of motor vehicles, motor cycles and personal and household goods.

(b) Includes private household with employed persons.

Vietnam's employment data for these industries are available from 2000 only.

Source: Vietnam GSO.

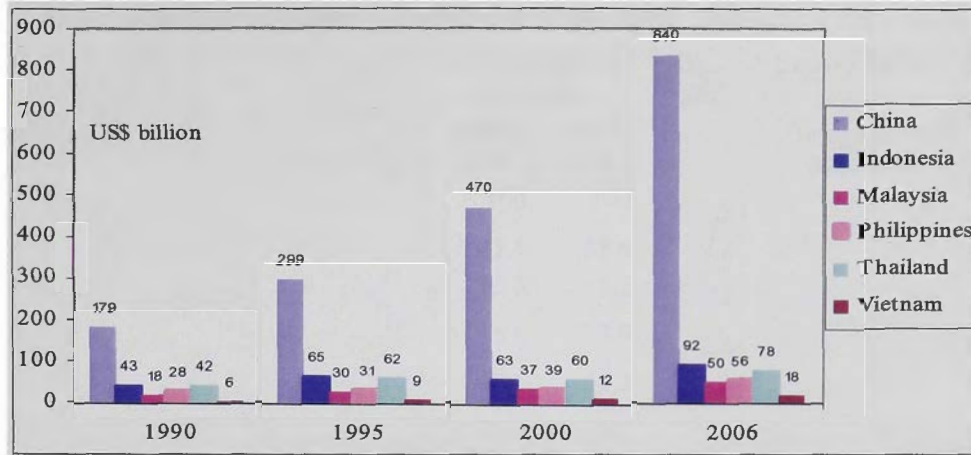
Vietnam's services productivity growth increased from 1.6 per cent in period (1) to 2.5 per cent⁹⁰ in period (3) mainly due to a decline of labour input but not output growth. The average growth of 2.5 per cent was thanks to productivity growth in industries such as transport, storage and communications (7.2 per cent); hotels and restaurants (6.9 per cent); recreational, cultural and sporting (6.1 per cent); scientific and technology (2.7 per cent); sales; and education and training (same 2.9 per cent). Services industries experienced negative productivity growth due to a significant surge of labour inputs over this period such as financial intermediation (–7 per cent); real estate, renting and business (–12.6 per cent); public administration, defence, compulsory social securities (–5 per cent); health and social work (–1.1 per cent); activities of party and of membership organisations (–9.9 per cent); and community, social and personal service activities including private household with employed persons (–2.4 per cent).

Figure 8.8 shows the services value-added level of Vietnam, China and the ASEAN-4 for the years 1990, 1995, 2000 and 2006 in US\$ billion (constant 2000). Between 1990 and 2006, the share of this sector in Vietnam's output remained stable with a doubling every ten years, from US\$6 billion in 1990 to US\$12 billion in 2000, and from US\$9 billion in 1995 to US\$18 billion in 2006. The value of this sector for other countries in 1990 and 2006 as follows: China increased more than fourfold from US\$179 billion to US\$840 billion, Indonesia increased more than twofold from US\$43 billion to US\$92 billion, Malaysia 2.8 times from US\$18 billion to US\$50 billion, the Philippines and Thailand enlarged almost twofold from US\$28 billion and US\$42 billion to US\$56 billion and US\$78 billion respectively.

It is noted that transport, storage and communications; education and training; and financial intermediation for Vietnam are important services inputs, which represent high shares of the total inputs used in manufacturing industry.⁹¹

⁹⁰ If based on Vietnam GSO's employment data for 2000-06, productivity growth for periods (2) and (3) was 0.2 and 2 per cent respectively since labour input was 5.4 and 5 per cent for these two respective periods.

⁹¹ Please refer to Table 8.8.

Figure 8.8: ASEAN-5's and China's Services Value-added, Specific Years (US\$ billion)

Source: World Bank database.

In brief, only China and Indonesia has much productivity growth in services over 1995-2006. As for Vietnam, although with a little increase over 2000-06, the level of productivity and growth in this sector was very low for its level of development stage over the entire period (1990-2006).

8.4 Extensive and Intensive Growth

Table 8.9 shows Vietnam's sectoral and aggregate contribution to growth, output, labour input for 1995-2000 and 2000-06; and productivity growth for 2000-06 at constant 1994 prices. Due to lack of Vietnam's sectoral employment data for 1995-99, productivity for this period is not available. Nevertheless, this table shows a remarkable story about Vietnam's extensive and intensive growth over 2000-06.

With the exception of industries such as hotels and restaurants; transport, storage and communications; and recreational, cultural and sporting having intensive growths within their industries, all other industries experienced extensive growths because the aggregate productivity growth of 5.1 per cent is well above that of any of these component industries. This implies that much of Vietnam's productivity growth is coming from structural extensive changes between economic sectors rather than changes of intensive growth within the industries.

Table 8.9: Vietnam's Sectoral and Aggregate Contribution to Growth, Output, Labour Input and Productivity Growth for 1995-2000, 2000-06 (US\$ constant 1994)

	Contribution to Growth		Out-put	Labour Input	Producti-vity
	1995-2000	2000-2006			
<i>Total</i>	100	100	7.5	2.4	5.1
State	42.5	38.6	7.2	2.0	5.1
Non-state	36.5	45.2	7.2	2.0	5.1
Collective	5.6	3.9	3.8	n/a	n/a
Private	8.1	14.8	12.9	n/a	n/a
Household	22.8	26.5	6.5	n/a	n/a
Foreign investment sector	21.1	16.2	10.6	23.6	-10.5
<i>By detailed industry structure</i>					
Agriculture	13.9	7.5	3.3	-0.8	4.2 ^(a)
Forestry	0.2	0.2	0.8	n/a	n/a
Fishing	1.8	2.8	8.6	7.8	0.8
Mining & quarrying	10.4	3	3.8	6.3	-2.4
Manufacturing	27.2	32.3	11.8	8.1	3.4
Electricity, gas & water supply	3.8	4.1	12.1	13.1	-0.9
Construction	7.8	11.6	10.8	12.7	-1.7
Sales ^(c)	14.1	16.4	7.6	4.6	2.9
Hotels & restaurants	2.7	4.1	9.3	2.3	6.9
Transport, storage & communications	3.7	4.1	7.8	0.6	7.2
Financial intermediation	2.2	2.1	7.8	16.0	-7.0
Scientific & technology	0.5	0.6	8.4	5.6	2.7
Real estate, renting & business	3.2	2	3.7	18.7	-12.6
Public admin., defence, compul. social security	1.2	2.1	5.8	11.4	-5.0
Education & training	2.8	3.3	7.6	4.6	2.9
Health & social work	1.2	1.4	7.5	8.7	-1.1
Recreational, cultural & sporting	0.6	0.5	6.4	0.3	6.1
Party activities, membership org.	0.2	0.1	6.2	17.9	-9.9
Community, social, personal service activities	2.3	1.6	6.2	8.7	-2.4 ^(b)
Private household with employed persons	0.2	0.1	4.1	n/a	n/a
<i>By aggregate industry category (WB data)*</i>					
Agriculture	15.9	10.5	3.8	-0.4	4.2
Manufacturing	27.2	32.3	11.8	7.5	4.0
Non-manufacturing	21.9	18.7	8.6	15.0	-5.5
Services	35.0	38.5	7.2	4.6	2.5

Notes: (a) Includes fishing; (b) Includes private household with employed persons; (c) Wholesale and retail trade; repair of motor vehicles, motor cycles and personal and household goods. *The growth of labour input and productivity for manufacturing in middle and bottom section is slightly different because of discrepancy in employment data for Vietnam from Vietnam GSO (middle section) and the WB (bottom section). Vietnam's employment data for these industries are available from 2000 only.

Source: Vietnam GSO and the World Bank database.

It can be said that the high growth of Vietnam's GDP from the onset of this century was largely driven by the high flow of labour inputs rather than the growth of productivity. Vietnam's economic growth has rather been extensive than intensive as this growth was generated by adding more ordinary inputs of labour, reproducible capital (i.e. machines and livestock) and natural resources, but not by improving skills, technology and better ways of production. Andreas (2005) states that 'extensive growth based on the expansion of inputs is likely to be subject to diminishing returns. Therefore it is often viewed as having no effect on per-capita magnitudes in the long run'. Hence, the factor that was missing in Vietnam's economic system is an intensive growth, which is driven by enhanced productivity (i.e. higher growth in output per unit of input) rather than augmented factor supplies.

Vietnam has experienced a classic case of extensive rather than intensive growth, with population growth and a shift out of agriculture facilitating rapid growth in overall GDP (and even in overall productivity growth, given compositional shifts) without any significant change in the low levels of productivity prevailing in most industries. This low quality pattern of growth does not provide the foundation for the transition to much higher living standards to which Vietnam aspires.

It is beyond the scope of this thesis to examine in detail the reasons for this extensive pattern of growth, but one relevant fact is shown in the top panel of Table 8.9. This shows that the foreign investment sector has been growing rapidly per annum over 2000-06, both in terms of value-added (10.6 per cent) and especially employment (23.6 per cent), but with a sharp decline in productivity (-10.5 per cent). The foreign investment sector accounted for one in six of the increase in employment in Vietnam over 2000-06, but labour productivity in the sector fell by 50 per cent over this time. Such a sharp change must imply that the foreign sector is shifting its investment patterns in Vietnam towards labour-intensive, low-cost industries, and is not investing substantially in higher productivity industries.

In Chapter Five two apparently contradictory competitiveness trends were noted: rising revealed competitiveness was shown by the constant market share analysis, while the WEO survey data suggested that Vietnam's structural and institutional

competitiveness was low and declining. Here we see a possible explanation for these trends, for Vietnam may be capturing a growing share of world markets for labour intensive goods, without reforming its structures and institutions and without building effective capacity in higher value-added, higher productivity industries.

Generally, labour was moving from agricultural sector of low productivity to sectors of high productivity in manufacturing, non-manufacturing and services without sparking a substantial modernisation of these areas. Specifically, labour was moving out of sector with increasing productivity growth but still low productivity level of agriculture into sectors showing declining productivity growth and also low productivity level such as manufacturing, non-manufacturing and services. In other words, Vietnam's human resource reallocation made the growth of agricultural productivity increased but decreased the growth of productivity in high productivity sectors due to a considerable surge of labour inputs into these sectors; and this process has occurred mainly due to the strong flows of FDI into these sectors, particularly from 2000 onwards.⁹² According to Leung (2006): 'In Vietnam, an over-valued exchange rate as well as domestic policies resulting in FDI flowing into the unprofitable SOEs sector were already leading to declines in export growth and FDI inflows in the six months prior to the eruption of the Asian crisis' (Leung 2006: 3, cited in Riedel 1999).

It is noticeable that the average productivity growth of -10.5 per cent (see Table 8.9) over 2000-06 for foreign investment sector is unexpected and can be explained also by footnote 93 below. This significantly falling productivity growth was due to a surge of labour inputs and negative productivity growth in mining and quarrying (-2.4 per cent); electricity, gas and water supply (-0.9 per cent); construction (-1.7 per cent); financial intermediation (-7 per cent); real estate, renting and business (-12.6

⁹² According to Vietnam's GSO data, FDI projects licensed from 1988 to 2007 by kind of economic activities with total registered capital US\$99.6 billion (implemented capital US\$43.1 billion) were allocated in most of economic sectors such as manufacturing (52.6 per cent); real estate, renting business activities (14.2 per cent); hotels and restaurants (7.7 per cent); construction (6.8 per cent); transport, storage and communications (5.1 per cent); mining and quarrying (3.8 per cent); agriculture and forestry (3.4 per cent); electricity, gas and water supply (1.9 per cent); recreational, cultural and sporting activities (1.7 per cent); financial intermediation (0.9 per cent); wholesale and retail trade; repair of motor vehicles, motor cycles and personal and household goods (0.6 per cent); health and social work (0.6 per cent); fishery (0.5 per cent); education and training (0.1 per cent); and community, social and personal service activities (0.04 per cent).

per cent); health and social work (–1.1 per cent); and community, social, personal service including private household with employed persons (–2.4 per cent).

In addition, the contribution of this foreign investment sector that dropped considerably by nearly 5 percentage points between two periods, from 21.1 to 16.2 per cent, implies that the economy's production has increasingly concentrated in low productivity sectors of low value-added labour-intensive industries as mentioned earlier.

8.5 Summary and Conclusion

At the aggregate level Vietnam's labour productivity growth has been relatively strong over 1990-2006, being at 5.2 per cent per annum the most rapid of any of the six countries other than China, and being substantially higher than that of any of the ASEAN-4. Its growth rate was also relatively stable over the period, and amounted to 5.1 per cent over 2000-06. But reflecting its low starting level, Vietnam's average productivity level remains low in 2006, being less than half that of the lowest of the other countries (Indonesia) and just over 10 per cent of that in Malaysia. This pattern of reasonably strong growth on a very low level is repeated in agriculture, with productivity growth over 1990-2006 of nearly 4 per cent per annum but a productivity level of only 56 per cent of that of the lowest country (China) in 2006. A similar pattern is also evident in the service sector, although here the growth in Vietnam's labour productivity has been towards the lower end of the ASEAN-4.

The situation is different in the two components of the industrial sector analysed, namely manufacturing and non-manufacturing industry. In manufacturing, Vietnam's labour productivity remains very low in 2006 (only 40 per cent of that in Indonesia and 35 per cent of that in China), in spite of fairly strong growth over 1990-2000, with slower growth (4 per cent per annum) over 2000-06. In non-manufacturing (which includes the petroleum industry), real value-added per worker in Vietnam was relatively high in 2000, being at US\$4,551 more than double that of China and higher than in the Philippines, but fell sharply over 2000-06. This fall reflected in part lower petroleum output, as the White Tiger oil field became depleted, but productivity fell in

the two other main component industries, construction and electricity, gas and water supply.

The analysis of this chapter brings out two clear facts. The first is the low level of labour productivity in all major industry groups in Vietnam, with the partial exception of non-manufacturing industry, relative to the ASEAN-4 and China. The second is, with the exception of agriculture, the low rates of productivity growth in all major industry groups in Vietnam. Indeed, for seventeen industry groups at the two-digit level (Table 8.9), real value-added per worker fell in nine of them over 2000-06. Thus, outside agriculture, the period since 2000 shows a pattern of both low productivity levels relative to comparable countries, and also low or negative productivity growth. In other words, Vietnam has experienced a classic case of extensive rather than intensive growth, with rapid growth in overall GDP due to population growth and a shift out of agriculture without any significant change in the low levels of productivity prevailing in most industries.

In conclusion, there are two key findings about this thesis, one central finding is that Vietnam's growth since Doi-Moi has indeed been export-led as the second-tier NICs of Malaysia, Thailand and the Philippines, but neither the characteristics of Vietnam's export structure (Chapter Four), the internal supply-oriented competitiveness effect of the constant market share analysis (Chapter Five), nor the export similarity results (Chapter Six) reflect those of these NICs. While these NICs have specialised in the high value-added industries of medium-high and high-technology intensity (Chapter Four) that have attracted an increasing share of world trade, Vietnam's exports are focused on resource-intensive and low-tech industries, which are growing slowly in world trade, and in a constant market share model are explained by rising residual competitiveness rather than by market demand or commodity composition effects. This rising residual competitiveness stands at odds with the results of the World Economic Forum and other sources that Vietnam's competitiveness is low and falling in recent years. Another key finding is that since 2000 Vietnam's growth has been extensive rather than intensive, with labour productivity both at low levels and growing slowly outside the agricultural sector. High GDP growth since 2000 has been driven by rapid growth in factor supplies, especially labour, with low growth in non-

agricultural productivity. This extensive pattern of growth resolves the competitiveness paradox, as it suggests that Vietnam is expanding low-cost industries rapidly but not building its competitiveness in other areas. Such a development path will not support the rate of long-term growth that Vietnam requires to achieve its development objectives, and major policy changes are necessary.

In addition, this chapter clearly shows that the quality of Vietnam's growth is low and declining from the onset of this century. This low quality pattern of growth does not provide the foundation for the transition to much higher living standards to which Vietnam aspires. All these findings from this thesis offer as a warning for Vietnam's future economic development. Unless Vietnam propels further drastic reforms in many aspects, its recent success will not be sustained into future rapid growth and development. Consequently, the prospect of utilising the untapped potential in manufacturing exports as discussed in Chapter Seven will be pushed further away, and the target to become a newly industrialising country by 2020 as discussed in Chapter Six would not be achieved. In other words, in the long run Vietnam would only sustain a high economic growth as in the past two decades, if further policy reforms are carried out to boost competitiveness in both natural resource-based and low-tech industries, and medium-high-tech and high-tech industries. Only in this case, Vietnam will be able to considerably narrow the development gap and speed up the catch-up process with the ASEAN-4 and other advanced countries in the world, as well as to gain the NIC status by the year 2020.

In so doing, Vietnam is required to push further reforms for Doi-Moi II in the following areas.

- Administration, institutions and legal infrastructure, and promote market efficiency as well as a laissez-faire environment of business sophistication and innovation.
- Eliminating inefficient SOEs and equitisation (privatisation) of SOEs.
- Financial institutions to make it more transparent to attract higher rates of domestic savings and investments as a result of eliminating private savings used to

go into the shadow economy. Higher level of capital investments will induce higher increasing returns in manufacturing production.

- Foreign direct investment laws to attract more foreign investments, particularly in export-oriented manufacturing of capital-intensive and technology-intensive industries in order to upgrade, modernise and industrialise the economy.
- Liberalising and promoting the private sector, e.g. small and medium enterprises, especially in R&D, as this sector responds well to changing market conditions, and thus to compete effectively in international markets. This sector can also help to resolve an increasing workforce of more than one million people each year.
- Liberalising foreign trade and promoting export. In this way, international competition will help upgrade productivity over time, and thus contribute to economic prosperity. Trade reforms also would make possible adjustments in the SOEs sector, by subjecting it to greater international competition.
- Expanding its global market by improving the diplomatic and trade relations with countries that Vietnam still holds a low level of international relationship.
- Create effective physical infrastructure in manufacturing industries as well as agriculture (communication, roads, ports, power etc.). Without these, Vietnam will never be able to produce the labour-intensive commodities at low cost, and thus can not compete internationally.
- Promote productivity growth of agro-industry by diversifying and intensifying agriculture production, which includes the dissemination of information and technology.
- Promote domestic (and foreign) investments in small and medium sized (SMEs) export-oriented companies, particularly in the private sector.
- Encourage industrial investments in rural areas (promote off-farm employment) by offering concessionary interests to investors (such as grants, low interest loans, subsidies, tax credit etc.). This development will also resolve the problem of excessive urbanisation and its worse consequences in environment, social evils, etc. in the big cities such as Saigon, Hanoi etc.
- Encourage investments in human capital for building up human-skilled resources to supply 'human infrastructure' in the production of human capital-intensive-and technology-intensive manufacturing industries.

- Improve the quality of education and training at all levels, from primary schools to universities and polytechnics by encouraging a system of creative thinking rather than the one of memorising.
- Establish the R&D centres in all fields.
- Promote a vision to transform Vietnam to a knowledge-based economy.

This chapter is concluded with the following statement:

Economies that sustain rapid growth do not simply replicate themselves on a larger scale. Countries become different as they grow, not only in terms of what they produce, but also how they produce. And the ways in which they change matter for growth. Growth occurs through diversification and the birth and expansion of new economic activities and assimilation of better methods of organisation and production. Countries that do not change cannot sustain rapid growth (ADB, 2007: 269).

List of Appendix Tables

Table A4.1: ASEAN-5's RCA of 247 Product Categories by 3-digit SITC (Rev. 3) in 2003

No:	Product Group	SITC Rev. 3	Indonesia	Malaysia	Philippines	Thailand	Vietnam
1	Live animals	001	0.34	0.79	0.04	0.19	0.18
2	Bovine meat	011	0.00	0.02	0.00	0.00	0.00
3	Other meat, meat offal	012	0.12	0.04	0.00	2.37	0.31
4	Meat, ed. offl. dry, slt, smk	016	0.01	0.01	0.00	0.01	0.02
5	Meat, offl. prepared, preserved, n.e.s	017	0.07	0.17	0.02	6.59	0.08
6	Milk and cream	022	0.43	0.32	0.69	0.57	1.46
7	Butter, other fat of milk	023	0.00	0.01	0.00	0.01	0.00
8	Cheese and curd	024	0.01	0.00	0.01	0.00	0.00
9	Eggs, birds, yolks, albumin	025	0.23	3.43	0.04	1.78	0.73
10	Wheat, meslin, unmilled	041	0.01	0.00	0.00	0.00	0.00
11	Rice	042	0.01	0.02	0.00	26.72	43.02
12	Barley, unmilled	043	0.00	0.00	0.00	0.00	0.01
13	Maize unmilled	044	0.07	0.02	0.00	0.34	0.04
14	Other cereals, Unmilled	045	0.05	0.01	0.00	0.72	0.14
15	Meal, flour of wheat, msln	046	0.20	0.64	0.01	0.12	0.50
16	Other cereal meal, flours	047	0.70	0.23	0.03	7.92	0.29
17	Cereal preparations	048	0.59	0.49	0.39	0.75	0.77
18	Non-alcohol beverages, n.e.s	111	0.13	0.61	0.13	0.77	0.19
19	Alcoholic beverages	112	0.01	0.13	0.22	0.11	0.09
20	Tobacco, un-manufactured tobacco	121	1.41	0.07	0.72	1.18	1.30
21	Tobacco, manufactured	122	1.15	0.99	0.53	0.03	2.68
22	Animal oils and fats	411	0.15	0.02	0.03	0.08	0.07
23	Fixed veg. fat, oils, soft	421	0.09	0.51	0.00	0.13	0.10
24	Fixed veg. fat, oils, other	422	35.69	35.47	10.56	0.86	0.72
25	Animal, veg. fats, oils, n.e.s	431	3.08	18.06	1.23	1.02	0.06
26	Oilseed (sft. fix. veg. oil)	222	0.03	0.04	0.00	0.05	1.18
27	Oilseed (other fix. veg. oil)	223	1.60	0.30	0.03	0.25	2.83
28	Fish, fresh, chilled, frozen	034	2.23	0.19	0.69	1.60	5.91
29	Fish, dried, salted, smoked	035	2.03	0.07	0.36	1.57	7.30
30	Crustaceans, molluscs etc.	036	7.31	1.18	2.60	7.56	39.36
31	Fish etc. prepared, preserved. n.e.s.	037	1.30	0.53	2.62	18.82	4.38
32	Hides, skins (ex. furs), raw	211	0.03	0.07	0.09	0.05	0.24
33	Fur-skins, raw	212	0.00	0.00	0.00	0.00	0.00
34	Natural rubber, etc.	231	30.76	11.13	1.14	44.31	24.49
35	Synthetic rubber, etc.	232	0.41	0.33	0.02	1.25	0.07
36	Cork, natural, raw, waste	244	0.18	0.00	0.02	0.00	0.00
37	Fuel wood, wood charcoal	245	5.31	1.67	2.94	0.33	3.77
38	Wood in chips, particles	246	1.57	0.48	0.03	2.07	5.60
39	Wood rough, rough squared	247	0.02	5.74	0.00	0.00	0.18
40	Wood, simply worked	248	1.87	2.14	0.10	0.77	0.29
41	Pulp and waste paper	251	4.64	0.00	0.37	0.49	0.00
42	Silk	261	0.13	0.00	0.00	0.15	2.89
43	Cotton	263	0.51	0.05	0.02	0.13	0.02
44	Jute, other textile bast fibres	264	0.81	0.00	0.00	0.05	0.59
45	Vegetable textile fibres	265	0.10	0.03	2.74	0.44	4.99
46	Synthetic fibres	266	1.59	0.75	0.01	4.72	0.18
47	Other man-made fibres	267	2.15	0.06	0.03	1.77	0.09
48	Wool, other animal hair	268	0.03	0.12	0.00	0.70	0.01
49	Worn clothing, textl. artl	269	0.12	0.95	0.68	0.14	0.12
50	Crude animal materials nes	291	0.13	0.09	0.19	0.65	0.91
51	Crude veg. materials, nes	292	0.62	0.16	0.90	0.57	0.46
52	Fertilizers, crude	272	0.58	0.14	0.05	0.18	0.01
53	Stone, sand and gravel	273	1.14	0.18	0.50	1.50	0.92
54	Sulphur, unrst. iron pyrites	274	0.19	2.68	0.18	0.02	0.00
55	Natural abrasives, n.e.s	277	1.99	0.01	0.02	14.47	0.02

56	Other crude minerals	278	0.34	0.14	0.12	0.39	0.22
57	Iron ore, concentrates	281	0.00	0.00	1.23	0.00	0.37
58	Ferrous waste and scrap	282	0.14	0.03	1.08	0.39	0.02
59	Copper ores, concentrates	283	33.67	0.00	0.38	0.00	0.08
60	Nickel ores, concentrate matte	284	16.52	0.00	3.15	0.00	0.00
61	Aluminium ore, concentrates etc.	285	0.45	0.02	0.00	0.00	0.00
62	Uranium, thorium ores, etc.	286	0.00	0.05	0.00	0.00	0.00
63	Ore, concentrate base metals	287	0.03	0.16	0.16	0.06	3.58
64	Non-ferrous waste, scrap	288	0.50	0.26	1.10	0.74	0.01
65	Precious metal ores, concentrates	289	0.00	0.85	1.15	0.09	0.02
66	Coal, not agglomerated	321	12.16	0.00	0.00	0.00	3.64
67	Briquettes, lignite, peat,	322	4.44	0.01	0.03	0.00	0.00
68	Coke, semi-coke, ret. carbon	325	0.00	0.00	0.00	0.00	0.00
69	Petroleum oils, crude	333	2.79	1.19	0.00	0.25	5.97
70	Petroleum products	334	1.18	0.97	0.69	0.60	0.34
71	Residual petrol products	335	0.79	0.43	0.00	1.89	0.03
72	Liquefied propane, butane	342	3.77	0.95	0.01	0.04	0.00
73	Natural gas	343	10.22	3.35	0.00	0.00	0.00
74	Petroleum gases, nes	344	0.06	5.40	0.87	3.58	0.01
75	Coal gas, water gas, etc.	345	7.10	8.42	0.00	0.00	0.00
76	Electric current	351	0.00	0.06	0.00	0.00	0.01
77	Silver, platinum, etc.	681	0.05	0.01	0.05	0.23	0.00
78	Copper	682	2.43	0.85	2.07	0.44	0.04
79	Nickel	683	0.01	0.01	0.00	0.00	0.00
80	Aluminium	684	0.62	0.34	0.02	0.14	0.10
81	Lead	685	0.11	0.79	0.19	0.01	0.05
82	Zinc	686	0.05	0.20	0.00	0.62	0.14
83	Tin	687	28.63	5.30	0.12	3.91	2.62
84	Misc. non-ferrous base metal	689	0.02	0.01	1.83	0.75	0.03
85	Pig iron, spiegeleisen, etc.	671	0.90	0.57	0.00	0.10	0.01
86	Ingots etc. iron or steel	672	0.05	0.85	0.00	0.16	0.02
87	Flat-rolled iron etc.	673	0.70	0.19	0.01	0.92	0.07
88	Flat-rolled plated iron	674	0.15	0.47	0.03	0.39	0.15
89	Flat-rolled, alloy steel	675	0.05	0.10	0.01	0.45	0.02
90	Iron, steel bar, shapes etc.	676	0.26	0.36	0.01	0.59	0.39
91	Railway track iron, steel	677	0.18	0.03	0.00	0.06	0.04
92	Wire of iron or steel	678	0.39	0.73	0.01	0.50	0.43
93	Tubes, pipes, etc. iron, stl.	679	0.54	1.12	0.08	0.69	0.39
94	Medicines, etc. excl Grp542	541	0.07	0.05	0.01	0.09	0.02
95	Medicaments	542	0.06	0.02	0.02	0.04	0.02
96	Hydrocarbons, nes, derivatives	511	0.97	0.96	0.00	1.99	0.02
97	Alcohol, phenol, etc. derivatives	512	2.23	2.75	0.58	0.43	0.08
98	Carboxylic acids, derivatives	513	1.92	1.95	0.04	1.21	0.01
99	Nitrogen- funct compounds	514	1.28	0.13	0.01	0.45	0.50
100	Organo-Inorganic compounds	515	0.13	0.01	0.00	0.08	0.01
101	Other organic chemicals	516	0.14	0.66	0.01	0.06	0.00
102	Inorganic chemical elements	522	1.62	0.53	0.24	0.35	0.05
103	Metal salts, inorganic acid	523	0.14	0.44	0.16	0.40	0.24
104	Other chemical compounds	524	0.12	0.06	0.01	0.15	0.02
105	Radio-active materials	525	0.02	0.01	0.00	0.00	0.01
106	Synth. colours, lakes, etc.	531	1.13	0.06	0.03	0.48	0.03
107	Dyeing, tanning materials	532	0.53	0.01	0.05	0.21	0.01
108	Pigments, paints, etc.	533	0.13	0.48	0.12	0.23	0.12
109	Essential oil, perfume flavour	551	0.57	0.03	0.08	0.34	0.10
110	Perfumery, cosmetics, etc.	553	0.28	0.18	0.16	1.00	0.38
111	Soap, cleaners, polish, etc.	554	1.61	0.96	0.38	0.46	0.75
112	Fertilizer, except Grp272	562	1.35	0.73	0.62	0.17	0.59
113	Polymers of ethylene	571	0.21	1.13	0.03	2.04	0.03
114	Polymers of styrene	572	0.17	1.65	0.03	2.31	0.00
115	Polymers, vinyl, chloride	573	1.13	0.25	0.23	2.33	0.41
116	Polyacetal, polycarbonate	574	1.51	0.99	0.07	2.56	0.01
117	Other plastic, primary form	575	0.17	0.41	0.09	1.09	0.02
118	Plastic waste, scrap etc.	579	0.73	0.79	0.74	0.84	0.09
119	Plastic tube, pipe, hose	581	0.23	0.15	0.02	0.28	0.23
120	Plastic plate, sheets, etc.	582	0.72	0.66	0.27	0.77	0.25

121	Monofilament of plastics	583	0.07	0.18	0.00	0.03	0.11
122	Insecticides etc.	591	0.43	0.37	0.09	0.32	0.28
123	Starches, inulin, etc.	592	0.16	0.23	0.10	3.16	2.90
124	Explosives, pyrotechnics	593	0.35	0.09	0.28	0.08	0.14
125	Prepared additives, liquids	597	0.09	0.11	0.01	0.16	0.07
126	Misc. chemical products nes.	598	0.35	0.81	0.15	0.22	0.04
127	Leather, leather goods	611	0.43	0.10	0.03	1.43	0.20
128	Manufactured leather etc. nes.	612	0.06	0.54	0.18	2.85	1.53
129	Furskins, tanned, dressed	613	0.01	0.01	0.00	0.14	0.05
130	Materials of rubber	621	0.24	1.65	0.04	1.96	2.12
131	Rubber tyres, tubes, etc.	625	1.66	0.20	0.27	1.47	0.47
132	Articles of rubber nes	629	0.77	0.55	0.33	2.48	0.77
133	Cork manufactures	633	0.02	0.01	0.00	0.00	0.00
134	Veneers, plywood etc.	634	10.70	4.66	0.09	0.71	0.32
135	Wood manufactures nes	635	5.54	1.14	1.64	1.59	1.74
136	Paper and paperboard	641	1.67	0.13	0.13	0.46	0.14
137	Paper, paperboard, cut etc.	642	3.00	0.48	0.12	0.84	0.60
138	Lime, cement, constr materials	661	1.05	0.45	0.57	2.17	0.49
139	Clay, refrct construction materials	662	0.80	0.39	0.02	0.53	0.33
140	Mineral manufactures, nes	663	0.72	0.49	0.13	0.99	3.27
141	Glass	664	1.37	0.83	0.84	1.38	0.24
142	Glassware	665	0.88	0.56	0.09	0.45	0.42
143	Pottery	666	1.58	0.61	0.87	3.61	0.58
144	Pearls, precious stones	667	0.03	0.02	0.05	0.98	0.13
145	Metallic structures nes	691	0.37	0.55	0.19	1.20	0.41
146	Containers, storage, transport	692	1.66	0.64	0.12	1.00	0.44
147	Wire products excl electric	693	0.40	0.74	0.01	1.32	0.19
148	Nails, screws, nuts, etc.	694	0.34	0.75	0.06	0.83	0.60
149	Tools	695	0.08	0.24	0.14	0.25	0.12
150	Cutlery	696	0.62	0.53	0.06	0.35	1.72
151	Household equipment nes	697	0.74	0.16	0.33	1.47	0.93
152	Manufactures base metals nes	699	0.17	0.43	0.19	0.64	0.45
153	Office machines	751	0.56	0.63	1.05	0.85	0.02
154	Automatic data process equipment	752	0.52	2.91	4.17	2.09	0.29
155	Parts for office machines	759	0.74	3.69	3.61	2.20	0.77
156	Television receivers etc.	761	0.92	3.57	0.27	3.03	0.63
157	Radio-broadcast receivers	762	2.70	6.82	1.34	2.95	0.01
158	Sound recorder, phonographic	763	3.01	3.36	0.04	1.10	0.02
159	Telecom equipment, parts nes	764	0.73	1.55	0.68	1.12	0.22
160	Transistors, valves, etc.	776	0.31	5.54	11.54	2.09	0.16
161	Passenger motor vehicles excl bus	781	0.01	0.01	0.08	0.18	0.01
162	Goods, special transport vehicles	782	0.01	0.02	0.03	2.54	0.00
163	Road motor vehicles nes	783	0.04	0.01	0.00	0.02	0.00
164	Parts, tractors, motor vehicles	784	0.26	0.08	1.04	0.50	0.04
165	Internal combustion engine vehicles	7132	0.27	0.02	0.00	0.43	0.00
166	Automotive electronic equipment	7783	0.40	0.34	0.09	0.91	0.07
167	Railway vehicles equipment	791	0.04	0.00	0.45	0.00	0.00
168	Aircraft, associated equipment	792	0.02	0.16	0.14	0.67	0.01
169	Ship, boat, float structures	793	0.29	0.10	0.12	0.31	0.04
170	Internal combustion piston engine	713	0.23	0.11	0.20	0.59	0.02
171	Cycles, motor cycles etc.	785	0.94	0.44	0.54	1.83	2.81
172	Trailers, semi-trailers, etc.	786	0.37	0.13	0.06	0.23	0.23
173	Steam generator boilers, etc.	711	1.52	0.47	0.57	0.26	0.06
174	Steam turbines	712	0.67	0.12	0.02	0.31	0.00
175	Engines, motors non-electrical	714	0.01	0.13	0.00	0.10	0.01
176	Rotating electric plant	716	1.15	0.61	0.05	1.80	0.92
177	Other power generating machinery	718	0.11	0.10	0.02	0.05	0.00
178	Agricultures machines, ex-tractors	721	0.01	0.07	0.02	0.04	0.10
179	Tractors	722	0.03	0.02	0.01	0.13	0.03
180	Civil engineering equipment	723	0.27	0.17	0.15	0.17	0.07
181	Textile, leather machines	724	0.06	0.10	0.07	0.32	0.61
182	Paper, pulp mill machines	725	0.02	0.07	0.13	0.07	0.02
183	Printing, bookbinding machines	726	0.01	0.54	0.03	0.54	0.02
184	Food-processor machines non-dom	727	0.13	0.41	0.17	0.18	0.15
185	Other machines, parts, special indust	728	0.06	0.41	0.31	0.13	0.07

186	Metal removal work tools	731	0.03	0.30	0.05	0.43	0.01
187	Mach-tools, metal-working	733	0.03	0.35	0.03	0.07	0.03
188	Parts, nes for machine-tools	735	0.02	0.20	0.42	0.16	0.01
189	Metal working machinery nes	737	0.10	0.18	0.03	0.18	0.03
190	Heating, cooling equipment, parts	741	0.23	0.80	0.42	2.75	0.01
191	Pumps for liquids, parts	742	0.07	0.05	0.17	0.28	0.05
192	Pumps nes, centrifugs etc.	743	0.33	0.44	0.10	0.91	0.15
193	Mechanical handling equipment	744	0.10	0.18	0.08	0.27	0.01
194	Other non-electric, tools nes	745	0.10	0.12	0.05	0.13	0.04
195	Ball or roller bearings	746	0.61	0.46	0.25	1.20	0.02
196	Taps, cocks, valves, etc.	747	0.06	0.12	0.03	0.41	0.12
197	Transmissions shafts etc.	748	0.15	0.10	0.10	0.22	0.14
198	Non-electric machines, parts etc.	749	0.10	0.47	0.21	0.36	0.18
199	Electric power machinery, parts	771	1.04	0.81	0.40	2.01	0.55
200	Electric switch relay circuit	772	0.73	2.00	1.15	1.67	0.47
201	Electric distributor equipment nes	773	0.90	0.55	2.55	1.15	2.53
202	Electronic medical, x-ray equipment	774	0.24	0.11	0.01	0.04	0.01
203	Domestic electric, non-electric equip	775	0.17	0.69	0.08	1.98	0.06
204	Electric machines appart. n.e.s	778	0.76	0.88	0.38	1.14	0.20
205	Textile yarn	651	4.38	0.98	0.31	1.65	1.46
206	Cotton fabrics, woven	652	1.61	0.28	0.22	1.03	0.28
207	Fabrics, man-made fibres	653	3.61	0.47	0.27	1.43	0.90
208	Other textile fabric, woven	654	0.04	0.02	0.06	0.14	0.31
209	Knitting crochet fabric nes	655	0.42	0.39	0.16	0.56	0.41
210	Tulle, lace, embroidery, etc.	656	0.72	0.09	0.91	1.71	0.44
211	Special yarn, textile, fabric	657	0.75	0.18	0.37	1.03	0.74
212	Textile articles nes	658	0.84	0.10	0.46	0.84	2.74
213	Floor coverings, etc.	659	0.38	0.11	0.10	0.66	0.20
214	Men, boys, clothing, x-knit	841	3.16	0.32	2.23	1.17	10.01
215	Women, girl cloth, xknit cloth x-knit	842	2.84	0.21	3.24	1.09	4.90
216	Men, boys clothing knit	843	2.27	1.01	3.69	3.49	10.73
217	Women, girls clothing knit	844	1.72	0.65	2.29	1.17	7.80
218	Other textile apparel, nes	845	1.91	0.29	1.39	1.55	4.44
219	Clothing accessories, fabric	846	0.92	0.48	0.66	0.57	2.48
220	Clothing, non-textile, headgear	848	0.90	3.99	0.48	3.15	1.85
221	Furniture, cushions, etc.	821	2.44	1.44	0.73	1.25	3.15
222	Trunk, suit-cases, bag, etc.	831	0.57	0.05	1.30	1.11	4.94
223	Footwear	851	2.65	0.17	0.17	1.38	16.22
224	Baby carriage, toys, games	894	0.55	0.35	0.67	1.11	0.61
225	Optical instruments, nes	871	0.03	0.16	0.18	0.03	0.01
226	Medical instruments nes	872	0.04	0.37	0.10	0.43	0.18
227	Meters, counters, nes	873	0.42	0.38	0.64	0.48	0.09
228	Measure, control instrument	874	0.03	0.88	0.14	0.18	0.07
229	Prefabricated buildings	811	0.03	0.16	0.05	0.28	0.43
230	Plumbing, sanitary equipment etc.	812	0.36	0.11	0.61	1.10	0.34
231	Lighting fixtures etc. nes	813	0.24	0.20	0.27	0.39	0.18
232	Photograph apparel etc. nes	881	0.41	2.66	4.43	1.60	0.32
233	Photo, cinema topography supply	882	0.02	0.27	0.00	0.05	0.31
234	Cinema film exposed development	883	0.01	0.02	0.01	0.38	0.00
235	Optical goods nes	884	0.47	0.31	1.16	1.89	0.12
236	Watches and clocks	885	0.02	0.46	1.43	1.49	0.17
237	Printed matter	892	0.13	0.26	0.12	0.21	0.06
238	Articles, nes of plastics	893	0.64	0.80	0.41	1.20	0.73
239	Office, stationery supplies	895	0.78	0.87	0.02	0.75	0.59
240	Works of art, antique etc.	896	0.05	0.01	0.02	0.04	0.00
241	Gold, silverware, jewellery nes	897	0.29	1.24	0.35	3.61	0.73
212	Musical instruments etc.	898	0.87	1.21	0.53	0.56	0.08
243	Misc. manufactured goods nes	899	0.84	0.14	0.86	0.59	1.88
244	Special transaction not classified	931	0.02	0.44	0.00	0.92	0.25
245	Coin non-gold, non-current	961	0.00	0.00	0.08	0.61	0.00
246	Gold, non-monetary excl ores	971	1.20	0.46	0.92	1.42	0.06
247	Arms and ammunition	891	0.06	0.00	0.23	0.17	0.00

Source: Author's calculations based on UN Comtrade database.

Table A4.2: ASEAN-5's Trade Performance in 2005 Based on HS 2002

Indonesia									
HS 2002	Product Group	Exports value US\$ mil.	Exports as a share of total exports (%)	Exports as a share of world exports (%)	Growth of world exports in value (% p.a)	No. of exported products (>0.1 US\$ mil)	No. of exports markets (>0.1 US\$ mil)	Net Trade	RCAI
00	All industries	85659.95	100.00	0.83		2906	202	27959.07	
01	Live animals	30.78	0.04	0.23	10	5	6	-87.71	0.3
02	Meat and edible meat offal	12.38	0.01	0.02	12	3	9	-72.34	0
03	Fish, crustaceans, molluscs, aquatic invertebrates nes	1522.52	1.78	2.63	8	62	51	1493.59	3.2
04	Dairy products, eggs, honey, edible animal product nes	133.44	0.16	0.30	11	12	40	-387.80	0.4
05	Products of animal origin, nes	6.30	0.01	0.12	11	7	8	-2.45	0.1
06	Live trees, plants, bulbs, roots, cut flowers etc	14.18	0.02	0.10	12	8	15	12.10	0.1
07	Edible vegetables and certain roots and tubers	66.59	0.08	0.20	10	24	15	-60.82	0.2
08	Edible fruit, nuts, peel of citrus fruit, melons	206.13	0.24	0.42	14	19	42	-11.35	0.5
09	Coffee, tea, mate and spices	786.96	0.92	4.11	13	24	72	764.87	4.9
10	Cereals	20.68	0.02	0.05	6	5	7	-863.71	0.1
11	Milling products, malt, starches, inulin, wheat gluten	44.67	0.05	0.54	9	11	27	-149.70	0.6
12	Oil seed, oleaginous fruits, grain, seed, fruit, etc, nes	89.65	0.10	0.30	10	20	34	-282.32	0.4
13	Lac, gums, resins, vegetable saps and extracts nes	33.54	0.04	0.96	12	5	27	7.24	1.1
14	Vegetable plaiting materials, vegetable products nes	33.61	0.04	8.29	2	7	20	32.73	10
15	Animal, vegetable fats and oils, cleavage products, etc	4950.58	5.78	12.91	19	21	106	4883.89	15.5
16	Meat, fish and seafood food preparations nes	278.86	0.33	1.08	13	9	36	267.85	1.3
17	Sugars and sugar confectionery	84.66	0.10	0.36	10	11	52	-570.02	0.4
18	Cocoa and cocoa preparations	667.99	0.78	3.12	14	11	46	582.54	3.7
19	Cereal, flour, starch, milk preparations and products	188.10	0.22	0.63	15	14	51	141.66	0.8
20	Vegetable, fruit, nut, etc food preparations	175.76	0.21	0.56	12	18	43	134.42	0.7
21	Miscellaneous edible preparations	91.21	0.11	0.30	15	10	36	-95.35	0.4
22	Beverages, spirits and vinegar	28.99	0.03	0.05	13	9	24	1.14	0.1
23	Residues, wastes of food industry, animal fodder	146.43	0.17	0.49	9	13	20	-678.41	0.6
24	Tobacco and manufactured tobacco substitutes	323.74	0.38	1.31	5	8	51	143.39	1.6
25	Salt, sulphur, earth, stone, plaster, lime and cement	204.90	0.24	0.77	12	30	41	-150.58	0.9
26	Ores, slag and ash	3499.50	4.09	5.00	31	12	19	3243.70	6
27	Mineral fuels, oils, distillation products, etc	23717.23	27.69	1.71	24	20	44	6199.16	2.1
28	Inorganic chemicals, precious metal compound, isoto	408.43	0.48	0.59	13	45	31	-328.86	0.7
29	Organic chemicals	1530.64	1.79	0.56	17	84	75	-1713.56	0.7
30	Pharmaceutical products	97.05	0.11	0.04	21	16	34	-93.05	0
31	Fertilizers	171.65	0.20	0.61	13	8	14	-287.65	0.7
32	Tanning, dyeing extracts, tannins, derivs, pigments etc	169.02	0.20	0.32	11	36	38	-313.04	0.4
33	Essential oils, perfumes, cosmetics, toileteries	206.89	0.24	0.35	15	21	56	-113.26	0.4
34	Soaps, lubricants, waxes, candles, modelling pastes	345.83	0.40	1.15	13	19	110	21.78	1.4
35	Albuminoids, modified starches, glues, enzymes	25.10	0.03	0.16	10	8	27	-107.74	0.2
36	Explosives, pyrotechnics, matches, pyrophorics, etc	6.78	0.01	0.27	13	4	11	-33.84	0.3
37	Photographic or cinematographic goods	5.45	0.01	0.03	6	8	9	-76.82	0
38	Miscellaneous chemical products	555.17	0.65	0.60	13	44	76	-120.37	0.7
39	Plastics and articles thereof	1562.05	1.82	0.46	16	100	102	-186.82	0.6
40	Rubber and articles thereof	3580.48	4.18	3.57	16	52	116	2969.65	4.3
41	Raw hides and skins (other than furskins) and leather	103.40	0.12	0.39	3	10	27	30.28	0.5
42	Articles of leather, animal gut, harness, travel goods	149.60	0.17	0.42	9	20	40	114.64	0.5
43	Furskins and artificial fur, manufactures thereof	2.18	0.00	0.03	18	3	4	1.98	0
44	Wood and articles of wood, wood charcoal	3111.31	3.63	3.07	12	41	92	2923.03	3.7
45	Cork and articles of cork	0.36	0.00	0.02	6	2	2	-0.53	0
46	Manufactures of plaiting material, basketwork, etc.	63.98	0.07	3.45	12	6	35	62.65	4.2
47	Pulp of wood, fibrous cellulosic material, waste etc	934.17	1.09	3.57	8	7	22	149.11	4.3
48	Paper & paperboard, articles of pulp, paper and board	2282.40	2.66	1.67	8	72	120	1804.15	2
49	Printed books, newspapers, pictures etc	40.91	0.05	0.11	9	15	42	5.37	0.1
50	Silk	9.98	0.01	0.31	10	3	9	7.83	0.4
51	Wool, animal hair, horsehair yarn and fabric thereof	7.70	0.01	0.06	3	7	16	-2.35	0.1
52	Cotton	755.00	0.88	1.60	7	96	78	23.91	1.9
53	Vegetable textile fibres nes, paper yarn, woven fabric	2.60	0.00	0.07	7	6	9	-6.08	0.1
54	Manmade filaments	1110.56	1.30	3.01	6	55	92	849.74	3.6
55	Manmade staple fibres	1238.30	1.45	4.44	5	67	93	995.06	5.3
56	Wadding, felt, non-wovens, yarns, twine, cordage, etc	78.60	0.09	0.55	11	21	47	28.36	0.7
57	Carpets and other textile floor coverings	42.29	0.05	0.36	9	15	36	35.36	0.4
58	Special woven or tufted fabric, lace, tapestry etc	43.44	0.05	0.38	11	21	43	14.00	0.5
59	Impregnated, coated or laminated textile fabric	134.89	0.16	0.82	7	15	40	8.09	1
60	Knitted or crocheted fabric	74.54	0.09	0.38	8	16	49	4.72	0.5
61	Articles of apparel, accessories, knit or crochet	1825.91	2.13	1.45	10	102	100	1802.82	1.7
62	Articles of apparel, accessories, not knit or crochet	3073.68	3.59	2.09	9	108	105	3043.53	2.5
63	Other made textile articles, sets, worn clothing etc	206.60	0.24	0.61	15	40	70	193.60	0.7
64	Footwear, gaiters and the like, parts thereof	1428.52	1.67	2.10	8	25	80	1369.23	2.5
65	Headgear and parts thereof	31.34	0.04	0.70	10	6	29	26.18	0.8
66	Umbrellas, walking-sticks, seat-sticks, whips, etc	13.84	0.02	0.85	n/a	5	10	7.91	1
67	Bird skin, feathers, artificial flowers, human hair	63.91	0.07	2.24	4	7	23	58.75	2.7
68	Stone, plaster, cement, asbestos, mica, etc articles	103.46	0.12	0.37	14	36	46	17.49	0.4
69	Ceramic products	273.98	0.32	0.90	11	24	66	163.21	1.1
70	Glass and glassware	596.81	0.46	0.84	11	44	59	308.40	1

71	Pearls, precious stones, metals, coins, etc	329.73	0.38	0.17	15	23	24	319.60	0.2
72	Iron and steel	711.22	0.83	0.25	26	70	46	-2633.73	0.3
73	Articles of iron or steel	598.11	0.70	0.35	17	90	72	-883.98	0.4
74	Copper and articles thereof	1257.53	1.47	1.65	21	33	23	1094.77	2
75	Nickel and articles thereof	927.04	1.08	4.81	23	5	4	907.70	5.8
76	Aluminium and articles thereof	612.88	0.72	0.58	13	33	47	46.96	0.7
78	Lead and articles thereof	0.29	0.00	0.01	19	1	1	-61.55	0
79	Zinc and articles thereof	5.54	0.01	0.06	11	6	9	-136.09	0.1
80	Tin and articles thereof	920.78	1.07	26.65	24	6	21	914.77	32
81	Other base metals, cermet, articles thereof	1.34	0.00	0.01	17	4	4	-14.21	0
82	Tools, implements, cutlery, etc of base metal	74.14	0.09	0.19	10	24	34	-85.75	0.2
83	Miscellaneous articles of base metal	118.03	0.14	0.31	14	29	35	-29.45	0.4
84	Boilers, machinery; nuclear reactors, etc	4560.04	5.32	0.33	12	324	108	-3516.15	0.4
85	Electrical, electronic equipment	7328.43	8.56	0.52	13	230	135	3999.26	0.6
86	Railway, tramway locomotives, rolling stock, equip.	64.20	0.07	0.27	19	4	14	46.05	0.3
87	Vehicles other than railway, tramway	1298.01	1.52	0.14	13	62	78	-1763.43	0.2
88	Aircraft, spacecraft, and parts thereof	119.29	0.14	0.09	4	9	33	-360.43	0.1
89	Ships, boats and other floating structures	195.78	0.23	0.27	12	12	17	-132.84	0.3
90	Optical, photo, technical, medical, etc apparatus	325.14	0.38	0.10	14	79	63	-161.40	0.1
91	Clocks and watches and parts thereof	4.62	0.01	0.02	7	7	9	-6.59	0
92	Musical instruments, parts and accessories	322.80	0.38	6.62	8	14	41	290.26	8
93	Arms and ammunition, parts and accessories thereof	1.06	0.00	0.01	8	2	1	-15.24	0
94	Furniture, lighting, signs, prefabricated buildings	1905.23	2.22	1.53	12	34	122	1800.42	1.8
95	Toys, games, sports requisites	195.44	0.23	0.32	9	31	48	122.15	0.4
96	Miscellaneous manufactured articles	147.43	0.17	0.77	9	31	56	58.48	0.9
97	Works of art, collectors pieces and antiques	6.42	0.01	0.04	9	4	14	5.58	0.1
99	Commodities not elsewhere specified	1.33	0.00	0.00	20	1	1	1.33	0

Malaysia

HS 2002	Product Group	Exports value US\$ mil.	Exports as a share of total exports (%)	Exports as a share of world exports (%)	Growth of world exports in value (% p.a)	No. of exported products (>0.1 US\$ mil)	No. of exports markets (>0.1 US\$ mil)	Net Trade	RCAI
00	All industries	140962.93	100.00	1.37		3299	190	26379.29	
01	Live animals	111.22	0.08	0.84	10	7	3	64.12	0.6
02	Meat and edible meat offal	7.74	0.01	0.01	12	10	10	-265.01	0
03	Fish, crustaceans, molluscs, aquatic invertebrates nes	522.99	0.37	0.90	8	47	35	54.39	0.7
04	Dairy products, eggs, honey, edible animal product nes	162.75	0.12	0.37	11	16	38	-281.81	0.3
05	Products of animal origin, nes	6.65	0.00	0.13	11	4	4	-4.00	0.1
06	Live trees, plants, bulbs, roots, cut flowers etc	52.71	0.04	0.39	12	8	16	48.41	0.3
07	Edible vegetables and certain roots and tubers	104.23	0.07	0.31	10	35	20	-298.44	0.2
08	Edible fruit, nuts, peel of citrus fruit, melons	82.76	0.06	0.17	14	28	29	-51.65	0.1
09	Coffee, tea, mate and spices	55.75	0.04	0.29	13	19	28	-82.74	0.2
10	Cereals	2.69	0.00	0.01	6	5	2	-846.16	0
11	Milling products, malt, starches, inulin, wheat gluten	37.36	0.03	0.45	9	15	25	-85.84	0.3
12	Oil seed, oleag fruits, grain, seed, fruit, etc, nes	24.69	0.02	0.08	10	18	14	-254.76	0.1
13	Lac, gums, resins, vegetable saps and extracts nes	3.23	0.00	0.09	12	2	6	-16.38	0.1
14	Vegetable plaiting materials, vegetable products nes	1.79	0.00	0.44	2	3	5	-2.10	0.3
15	Animal, vegetable fats and oils, cleavage products, etc	6051.24	4.29	15.78	19	29	131	5505.36	11.5
16	Meat, fish and seafood food preparations nes	108.65	0.08	0.42	13	17	36	58.28	0.3
17	Sugars and sugar confectionery	123.35	0.09	0.52	10	10	34	-224.85	0.4
18	Cocoa and cocoa preparations	513.66	0.36	2.40	14	11	74	70.28	1.8
19	Cereal, flour, starch, milk preparations and products	348.23	0.25	1.16	15	15	73	58.74	0.8
20	Vegetable, fruit, nut, etc food preparations	62.64	0.04	0.20	12	27	43	-19.21	0.1
21	Miscellaneous edible preparations	273.42	0.19	0.90	15	13	58	6.20	0.7
22	Beverages, spirits and vinegar	240.93	0.17	0.40	13	21	38	74.27	0.3
23	Residues, wastes of food industry, animal fodder	142.91	0.10	0.48	9	12	27	-254.00	0.3
24	Tobacco and manufactured tobacco substitutes	218.03	0.15	0.88	5	8	33	-11.89	0.6
25	Salt, sulphur, earth, stone, plaster, lime and cement	159.80	0.11	0.60	12	28	27	-84.60	0.4
26	Ores, slag and ash	27.00	0.02	0.04	31	13	13	-272.40	0
27	Mineral fuels, oils, distillation products, etc	18759.95	13.31	1.35	24	24	43	9531.15	1
28	Inorganic chemicals, precious metal compound, isoto	288.17	0.20	0.41	13	82	45	-428.13	0.3
29	Organic chemicals	2222.57	1.58	0.82	17	136	71	-85.32	0.6
30	Pharmaceutical products	87.01	0.06	0.04	21	23	43	-479.45	0
31	Fertilizers	245.93	0.17	0.87	13	18	19	-400.44	0.6
32	Tanning, dyeing extracts, tannins, derivs, pigments etc	393.71	0.28	0.75	11	35	56	-110.22	0.5
33	Essential oils, perfumes, cosmetics, toileteries	139.39	0.10	0.24	15	24	42	-285.64	0.2
34	Soaps, lubricants, waxes, candles, modelling pastes	405.78	0.29	1.34	13	21	82	166.36	1
35	Albuminoids, modified starches, glues, enzymes	43.29	0.03	0.27	10	8	28	-56.75	0.2
36	Explosives, pyrotechnics, matches, pyrophorics, etc	5.64	0.00	0.22	13	4	12	-3.70	0.2
37	Photographic or cinematographic goods	105.77	0.08	0.51	6	20	36	-4.90	0.4
38	Miscellaneous chemical products	1671.03	1.19	1.79	13	43	95	951.10	1.3
39	Plastics and articles thereof	3862.90	2.74	1.14	16	111	120	166.26	0.8
40	Rubber and articles thereof	3408.95	2.42	3.39	16	64	125	2407.10	2.5
41	Raw hides and skins (other than furskins) and leather	23.23	0.02	0.09	3	13	10	-110.20	0.1
42	Articles of leather, animal gut, harness, travel goods	37.63	0.03	0.11	9	17	26	-16.74	0.1

43	Furskins and artificial fur, manufactures thereof	1.61	0.00	0.02	18	2	1	0.18	n
44	Wood and articles of wood, wood charcoal	4120.39	2.92	4.07	12	51	88	3753.81	3
45	Cork and articles of cork	0.11	0.00	0.01	6	0	0	-0.82	0
46	Manufactures of plaiting material, basketwork, etc.	0.35	0.00	0.02	12	1	0	-2.37	0
47	Pulp of wood, fibrous cellulosic material, waste etc	8.34	0.01	0.03	8	5	5	-121.69	0
48	Paper & paperboard, articles of pulp, paper and board	536.96	0.38	0.39	8	78	70	-779.30	0.3
49	Printed books, newspapers, pictures etc	174.71	0.12	0.49	9	15	50	-22.72	0.4
50	Silk	1.46	0.00	0.05	10	3	3	-10.35	0
51	Wool, animal hair, horsehair yarn and fabric thereof	38.79	0.03	0.30	3	6	13	-1.96	0.2
52	Cotton	126.25	0.09	0.27	7	50	37	-155.97	0.2
53	Vegetable textile fibres nes, paper yarn, woven fabric	1.26	0.00	0.03	7	2	3	-2.54	0
54	Manmade filaments	709.72	0.50	1.92	6	38	69	531.79	1.4
55	Manmade staple fibres	214.90	0.15	0.77	5	41	59	30.86	0.6
56	Wadding, felt, non-wovens, yarns, twine, cordage, etc	95.36	0.07	0.66	11	27	44	25.62	0.5
57	Carpets and other textile floor coverings	25.24	0.02	0.21	9	14	15	-3.90	0.2
58	Special woven or tufted fabric, lace, tapestry etc	17.97	0.01	0.16	11	14	24	-20.09	0.1
59	Impregnated, coated or laminated textile fabric	29.01	0.02	0.18	7	12	25	-59.37	0.1
60	Knitted or crocheted fabric	107.04	0.08	0.54	8	12	25	-67.55	0.4
61	Articles of apparel, accessories, knit or crochet	767.24	0.54	0.61	10	95	52	666.63	0.4
62	Articles of apparel, accessories, not knit or crochet	456.13	0.32	0.31	9	88	46	311.89	0.2
63	Other made textile articles, sets, worn clothing etc	72.63	0.05	0.21	15	35	37	-52.02	0.2
64	Footwear, gaiters and the like, parts thereof	133.64	0.09	0.20	8	23	51	41.69	0.1
65	Headgear and parts thereof	18.32	0.01	0.41	10	6	16	15.17	0.3
66	Umbrellas, walking-sticks, seat-sticks, whips, etc	0.51	0.00	0.03		3	2	-0.53	0
67	Bird skin, feathers, artificial flowers, human hair	0.67	0.00	0.02	4	2	1	-0.68	0
68	Stone, plaster, cement, asbestos, mica, etc articles	151.81	0.11	0.54	14	39	44	21.38	0.4
69	Ceramic products	195.99	0.14	0.65	11	24	52	57.98	0.5
70	Glass and glassware	352.00	0.25	0.75	11	36	51	-78.92	0.5
71	Pearls, precious stones, metals, coins, etc	1435.15	1.02	0.75	15	26	34	-156.39	0.5
72	Iron and steel	1111.62	0.79	0.39	26	128	51	-2542.65	0.3
73	Articles of iron or steel	1628.30	1.16	0.95	17	101	89	-538.92	0.7
74	Copper and articles thereof	681.00	0.48	0.89	21	38	43	-839.22	0.7
75	Nickel and articles thereof	13.26	0.01	0.07	23	7	11	-36.75	0.1
76	Aluminium and articles thereof	668.78	0.47	0.64	13	35	52	-454.91	0.5
78	Lead and articles thereof	41.73	0.03	1.31	19	9	20	-11.11	1
79	Zinc and articles thereof	45.57	0.03	0.51	11	9	18	-170.14	0.4
80	Tin and articles thereof	298.21	0.21	8.63	24	7	30	47.72	6.3
81	Other base metals, cermetes, articles thereof	12.05	0.01	0.10	17	6	8	-74.85	0.1
82	Tools, implements, cutlery, etc of base metal	165.37	0.12	0.43	10	41	41	-224.82	0.3
83	Miscellaneous articles of base metal	178.46	0.13	0.47	14	35	65	4.51	0.3
84	Boilers, machinery, nuclear reactors, etc	27268.63	19.34	1.95	12	430	144	9005.45	1.4
85	Electrical, electronic equipment	48159.45	34.16	3.44	13	266	136	5845.44	2.5
86	Railway, tramway locomotives, rolling stock, equip.	56.23	0.04	0.24	19	6	17	-18.95	0.2
87	Vehicles other than railway, tramway	836.15	0.59	0.09	13	64	87	-2321.12	0.1
88	Aircraft, spacecraft, and parts thereof	380.21	0.27	0.27	4	12	33	-697.40	0.2
89	Ships, boats and other floating structures	584.91	0.41	0.79	12	12	27	-270.06	0.6
90	Optical, photo, technical, medical, etc apparatus	3219.47	2.28	0.99	14	130	77	80.69	0.7
91	Clocks and watches and parts thereof	148.62	0.11	0.59	7	28	13	-147.01	0.4
92	Musical instruments, parts and accessories	43.63	0.03	0.89	8	12	21	8.18	0.7
93	Arms and ammunition, parts and accessories thereof	1.45	0.00	0.02	8	3	5	-14.86	0
94	Furniture, lighting, signs, prefabricated buildings	2092.64	1.48	1.68	12	36	131	1678.47	1.2
95	Toys, games, sports requisites	251.33	0.18	0.41	9	33	56	103.03	0.3
96	Miscellaneous manufactured articles	200.22	0.14	1.04	9	35	71	63.66	0.8
97	Works of art, collectors pieces and antiques	6.58	0.00	0.04	9	3	9	-2.51	0
99	Commodities not elsewhere specified	1928.16	1.37	0.83	20	1	131	-136.75	0.6

Philippines

HS 2002	Product Group	Exports value US\$ mil.	Exports as a share of total exports (%)	Exports as a share of world exports (%)	Growth of world exports in value (% p.a)	No. of exported products (>0.1 US\$ mil)	No. of exports markets (>0.1 US\$ mil)	Net Trade	RCAI
00	All industries	41221.27	100.00	0.40		1478	147	-5732.50	
01	Live animals	4.84	0.01	0.04	10	3	8	-15.35	0.1
02	Meat and edible meat offal	7.56	0.02	0.01	12	3	5	-160.10	0
03	Fish, crustaceans, molluscs, aquatic invertebrates nes	240.44	0.58	0.42	8	30	34	171.98	1
04	Dairy products, eggs, honey, edible animal product nes	77.25	0.19	0.17	11	6	12	-351.25	0.4
05	Products of animal origin, nes	3.69	0.01	0.07	11	4	8	-0.87	0.2
06	Live trees, plants, bulbs, roots, cut flowers etc	2.35	0.01	0.02	12	4	4	1.44	0
07	Edible vegetables and certain roots and tubers	29.43	0.07	0.09	10	9	7	-6.54	0.2
08	Edible fruit, nuts, peel of citrus fruit, melons	576.86	1.40	1.18	14	10	57	542.88	2.9
09	Coffee, tea, mate and spices	2.11	0.01	0.01	13	3	4	-33.50	0
10	Cereals	0.19	0.00	0.00	6	0	0	-958.46	0
11	Milling products, malt, starches, inulin, wheat gluten	3.41	0.01	0.04	9	3	4	-88.85	0.1
12	Oil seed, oleag fruits, grain, seed, fruit, etc, nes	31.44	0.08	0.10	10	5	23	-54.48	0.3
13	Lac, gums, resins, vegetable saps and extracts nes	43.95	0.11	1.25	12	2	32	27.07	3.1
14	Vegetable plaiting materials, vegetable products nes	0.29	0.00	0.07	2	1	1	-1.20	0.2

15	Animal, vegetable fats and oils, cleavage products, etc	663.23	1.61	1.73	19	9	19	514.20	4.3
16	Meat, fish and seafood food preparations nes	109.42	0.27	0.42	13	13	46	101.10	1.1
17	Sugars and sugar confectionery	110.64	0.27	0.47	10	7	23	43.65	1.2
18	Cocoa and cocoa preparations	5.43	0.01	0.03	14	5	8	-40.36	0.1
19	Cereal, flour, starch, milk preparations and products	84.09	0.20	0.28	15	10	38	-105.67	0.7
20	Vegetable, fruit, nut, etc food preparations	271.62	0.66	0.86	12	20	49	216.65	2.2
21	Miscellaneous edible preparations	60.50	0.15	0.20	15	9	37	-193.01	0.5
22	Beverages, spirits and vinegar	49.32	0.12	0.08	13	14	29	-32.25	0.2
23	Residues, wastes of food industry, animal fodder	32.83	0.08	0.11	9	6	9	-472.84	0.3
24	Tobacco and manufactured tobacco substitutes	143.74	0.35	0.58	5	8	32	-63.61	1.5
25	Salt, sulphur, earth, stone, plaster, lime and cement	64.42	0.16	0.24	12	14	20	-13.93	0.6
26	Ores, slag and ash	256.76	0.62	0.37	31	11	11	-293.34	0.9
27	Mineral fuels, oils, distillation products, etc	774.81	1.88	0.06	24	7	26	-5768.61	0.1
28	Inorganic chemicals, precious metal compound, isoto	49.32	0.12	0.07	13	16	15	-270.25	0.2
29	Organic chemicals	49.85	0.12	0.02	17	9	24	-535.04	0
30	Pharmaceutical products	26.69	0.06	0.01	21	6	22	-404.73	0
31	Fertilizers	92.33	0.22	0.33	13	7	9	-130.44	0.8
32	Tanning, dyeing extracts, tannins, derivs, pigments etc	16.56	0.04	0.03	11	17	23	-195.27	0.1
33	Essential oils, perfumes, cosmetics, toileteries	43.03	0.10	0.07	15	15	34	-206.72	0.2
34	Soaps, lubricants, waxes, candles, modelling pastes	40.92	0.10	0.14	13	12	22	-83.33	0.3
35	Albuminoids, modified starches, glues, enzymes	5.91	0.01	0.04	10	4	10	-84.68	0.1
36	Explosives, pyrotechnics, matches, pyrophorics, etc	3.89	0.01	0.15	13	2	4	-2.71	0.4
37	Photographic or cinematographic goods	0.70	0.00	0.00	6	2	3	-57.37	0
38	Miscellaneous chemical products	108.31	0.26	0.12	13	14	33	-246.06	0.3
39	Plastics and articles thereof	276.02	0.67	0.08	16	54	47	-899.95	0.2
40	Rubber and articles thereof	149.55	0.36	0.15	16	26	53	-31.36	0.4
41	Raw hides and skins (other than furskins) and leather	4.10	0.01	0.02	3	8	8	-47.58	0
42	Articles of leather, animal gut, harness, travel goods	131.21	0.32	0.37	9	15	23	112.20	0.9
43	Furskins and artificial fur, manufactures thereof	1.19	0.00	0.02	18	2	3	0.86	0
44	Wood and articles of wood, wood charcoal	180.62	0.44	0.18	12	24	34	-70.02	0.4
45	Cork and articles of cork	0.03	0.00	0.00	6	0	0	-0.95	0
46	Manufactures of plaiting material, basketwork, etc.	95.30	0.23	5.14	12	5	31	94.92	12.9
47	Pulp of wood, fibrous cellulosic material, waste etc	52.69	0.13	0.20	8	3	8	-20.05	0.5
48	Paper & paperboard, articles of pulp, paper and board	110.62	0.27	0.08	8	34	36	-347.16	0.2
49	Printed books, newspapers, pictures etc	9.75	0.02	0.03	9	8	15	-69.57	0.1
50	Silk	0.92	0.00	0.03	10	1	3	-2.22	0.1
51	Wool, animal hair, horsehair yarn and fabric thereof	2.03	0.00	0.02	3	4	3	-35.22	0
52	Cotton	46.89	0.11	0.10	7	16	28	-270.97	0.2
53	Vegetable textile fibres nes, paper yarn, woven fabric	13.98	0.03	0.38	7	5	10	6.60	1
54	Manmade filaments	21.04	0.05	0.06	6	7	20	-158.26	0.1
55	Manmade staple fibres	39.05	0.09	0.14	5	19	33	-185.08	0.3
56	Wadding, felt, non-wovens, yarns, twine, cordage, etc	44.92	0.11	0.31	11	8	31	17.68	0.8
57	Carpets and other textile floor coverings	5.18	0.01	0.04	9	3	4	-0.95	0.1
58	Special woven or tufted fabric, lace, tapestry etc	49.57	0.12	0.43	11	10	23	-15.48	1.1
59	Impregnated, coated or laminated textile fabric	0.40	0.00	0.00	7	2	2	-41.50	0
60	Knitted or crocheted fabric	8.34	0.02	0.04	8	4	11	-281.76	0.1
61	Articles of apparel, accessories, knit or crochet	837.82	2.03	0.67	10	93	48	806.67	1.7
62	Articles of apparel, accessories, not knit or crochet	1396.62	3.39	0.95	9	99	48	1352.93	2.4
63	Other made textile articles, sets, worn clothing etc	65.07	0.16	0.19	15	23	24	46.65	0.5
64	Footwear, gaiters and the like, parts thereof	25.76	0.06	0.04	8	13	23	-18.50	0.1
65	Headgear and parts thereof	16.20	0.04	0.36	10	5	11	14.27	0.9
66	Umbrellas, walking-sticks, seat-sticks, whips, etc	1.62	0.00	0.10		2	2	-2.83	0.2
67	Bird skin, feathers, artificial flowers, human hair	24.06	0.06	0.84	4	2	10	18.89	2.1
68	Stone, plaster, cement, asbestos, mica, etc articles	35.97	0.09	0.13	14	13	29	-5.70	0.3
69	Ceramic products	57.83	0.14	0.19	11	9	22	-8.64	0.5
70	Glass and glassware	180.77	0.44	0.38	11	18	23	84.50	1
71	Pearls, precious stones, metals, coins, etc	157.41	0.38	0.08	15	16	36	45.04	0.2
72	Iron and steel	207.54	0.50	0.07	26	26	21	-1159.64	0.2
73	Articles of iron or steel	96.79	0.23	0.06	17	35	32	-210.20	0.1
74	Copper and articles thereof	434.96	1.06	0.57	21	13	16	121.31	1.4
75	Nickel and articles thereof	0.26	0.00	0.00	23	1	1	-3.28	0
76	Aluminium and articles thereof	32.86	0.08	0.03	13	10	19	-169.05	0.1
78	Lead and articles thereof	0.93	0.00	0.03	19	3	2	-5.72	0.1
79	Zinc and articles thereof	2.19	0.01	0.02	11	3	5	-26.68	0.1
80	Tin and articles thereof	3.98	0.01	0.12	24	5	9	-2.32	0.3
81	Other base metals, cermet, articles thereof	69.08	0.17	0.55	17	3	15	61.35	1.4
82	Tools, implements, cutlery, etc of base metal	12.26	0.03	0.03	10	11	13	-16.59	0.1
83	Miscellaneous articles of base metal	53.23	0.13	0.14	14	20	25	-9.50	0.4
84	Boilers, machinery; nuclear reactors, etc	8383.47	20.34	0.60	12	170	81	2259.60	1.5
85	Electrical, electronic equipment	20162.91	48.91	1.44	13	120	79	1905.26	3.6
86	Railway, tramway locomotives, rolling stock, equip.	1.79	0.00	0.01	19	2	2	-6.61	0
87	Vehicles other than railway, tramway	1611.27	3.91	0.18	13	25	47	309.12	0.4
88	Aircraft, spacecraft, and parts thereof	348.02	0.84	0.25	4	4	29	-137.91	0.6
89	Ships, boats and other floating structures	137.98	0.33	0.19	12	2	9	132.72	0.5
90	Optical, photo, technical, medical, etc apparatus	870.24	2.11	0.27	14	76	50	82.80	0.7
91	Clocks and watches and parts thereof	143.24	0.35	0.57	7	5	28	25.90	1.4
92	Musical instruments, parts and accessories	0.71	0.00	0.01	8	3	2	-4.78	0
93	Arms and ammunition, parts and accessories thereof	7.14	0.02	0.10	8	7	8	0.63	0.2
94	Furniture, lighting, signs, prefabricated buildings	335.75	0.81	0.27	12	24	65	258.72	0.7
95	Toys, games, sports requisites	116.69	0.28	0.19	9	20	44	43.62	0.5
96	Miscellaneous manufactured articles	41.80	0.10	0.22	9	16	25	-31.37	0.5
97	Works of art, collectors pieces and antiques	3.07	0.01	0.02	9	2	3	2.73	0.1
99	Commodities not elsewhere specified	12.48	0.05	0.01	20	1	19	11.75	0

Thailand

HS 2002	Product Group	Exports value US\$ mil.	Exports as a share of total exports (%)	Exports as a share of world exports (%)	Growth of world exports in value (% p.a)	No. of exported products (>0.1 US\$ mil)	No. of exports markets (>0.1 US\$ mil)	Net Trade	RCAI
00	All industries	110110.03	100.00	1.07		3220	206	-8054.30	
01	Live animals	10.179	0.01	0.08	10	4	11	-27.81	0.1
02	Meat and edible meat offal	28.491	0.03	0.04	12	10	10	19.07	0
03	Fish, crustaceans, molluscs, aquatic invertebrates nes	1938.159	1.76	3.35	8	51	67	570.67	3.1
04	Dairy products, eggs, honey, edible animal product nes	142.386	0.13	0.32	11	17	27	-222.48	0.3
05	Products of animal origin, nes	24.162	0.02	0.46	11	10	16	-9.88	0.4
06	Live trees, plants, bulbs, roots, cut flowers etc	88.316	0.08	0.65	12	9	42	78.00	0.6
07	Edible vegetables and certain roots and tubers	517.597	0.47	1.55	10	30	44	444.58	1.5
08	Edible fruit, nuts, peel of citrus fruit, melons	313.079	0.28	0.64	14	28	45	180.19	0.6
09	Coffee, tea, mate and spices	34.561	0.03	0.18	13	14	24	5.28	0.2
10	Cereals	2358.55	2.14	5.42	6	7	109	2103.81	5.1
11	Milling products, malt, starches, inulin, wheat gluten	312.514	0.28	3.74	9	14	45	176.15	3.5
12	Oil seed, oleagic fruits, grain, seed, fruit, etc, nes	55.742	0.05	0.18	10	18	26	-465.59	0.2
13	Lac, gums, resins, vegetable saps and extracts nes	22.387	0.02	0.64	12	6	15	-28.27	0.6
14	Vegetable plaiting materials, vegetable products nes	6.166	0.01	1.52	2	5	10	-3.47	1.4
15	Animal,vegetable fats and oils, cleavage products, etc	166.077	0.15	0.43	19	20	31	60.47	0.4
16	Meat, fish and seafood food preparations nes	3376.411	3.07	13.10	13	23	127	3345.29	12.3
17	Sugars and sugar confectionery	863.842	0.78	3.64	10	10	53	823.97	3.4
18	Cocoa and cocoa preparations	47.086	0.04	0.22	14	8	24	-23.25	0.2
19	Cereal, flour, starch, milk preparations and products	367.121	0.33	1.22	15	15	57	137.12	1.1
20	Vegetable, fruit, nut, etc food preparations	1115.238	1.01	3.54	12	35	115	1011.56	3.3
21	Miscellaneous edible preparations	678.771	0.62	2.24	15	13	84	480.89	2.1
22	Beverages, spirits and vinegar	202.831	0.18	0.34	13	18	38	19.06	0.3
23	Residues, wastes of food industry, animal fodder	496.233	0.45	1.66	9	10	42	-227.58	1.6
24	Tobacco and manufactured tobacco substitutes	71.617	0.07	0.29	5	6	31	-54.61	0.3
25	Salt, sulphur, earth, stone, plaster, lime and cement	587.933	0.53	2.22	12	22	42	382.21	2.1
26	Ores, slag and ash	28.719	0.03	0.04	31	8	15	-273.93	0
27	Mineral fuels, oils, distillation products, etc	4768.037	4.33	0.34	24	14	35	-16174.81	0.3
28	Inorganic chemicals, precious metal compound, isoto	161.633	0.15	0.23	13	50	35	-726.93	0.2
29	Organic chemicals	1930.356	1.75	0.71	17	77	49	-1617.28	0.7
30	Pharmaceutical products	154.564	0.14	0.06	21	19	48	-526.03	0.1
31	Fertilizers	68.359	0.06	0.24	13	14	14	-824.96	0.2
32	Tanning, dyeing extracts, tannins, derivs,pigments etc	204.772	0.19	0.39	11	37	62	-613.28	0.4
33	Essential oils, perfumes, cosmetics, toileteries	655.965	0.60	1.11	15	23	81	-228.66	1
34	Soaps, lubricants, waxes, candles, modelling pastes	237.689	0.22	0.79	13	20	54	-137.94	0.7
35	Albuminoids, modified starches, glues, enzymes	310.16	0.28	1.97	10	8	44	186.62	1.8
36	Explosives, pyrotechnics, matches, pyrophorics, etc	10.159	0.01	0.40	13	5	12	-6.09	0.4
37	Photographic or cinematographic goods	21.252	0.02	0.10	6	9	24	-143.58	0.1
38	Miscellaneous chemical products	223.35	0.20	0.24	13	41	52	-1121.35	0.2
39	Plastics and articles thereof	5991.314	5.44	1.76	16	105	151	1752.63	1.6
40	Rubber and articles thereof	6230.852	5.66	6.20	16	63	135	5330.97	5.8
41	Raw hides and skins (other than furskins) and leather	340.122	0.31	1.27	3	13	30	-148.39	1.2
42	Articles of leather, animal gut, harness, travel goods	320.828	0.29	0.90	9	19	69	237.59	0.8
43	Furskins and artificial fur, manufactures thereof	6.273	0.01	0.08	18	4	5	-5.09	0.1
44	Wood and articles of wood, wood charcoal	914.668	0.83	0.90	12	34	70	187.49	0.8
45	Cork and articles of cork	0.012	0.00	0.00	6	0	0	-1.64	0
46	Manufactures of plaiting material, basketwork, etc.	13.062	0.01	0.71	12	5	22	10.03	0.7
47	Pulp of wood, fibrous cellulosic material, waste etc	91.133	0.08	0.35	8	10	22	-285.79	0.3
48	Paper & paperboard, articles of pulp, paper and board	905.407	0.82	0.66	8	78	84	-25.35	0.6
49	Printed books, newspapers, pictures etc	113.148	0.10	0.32	9	17	47	-9.63	0.3
50	Silk	26.391	0.02	0.83	10	7	18	4.23	0.8
51	Wool, animal hair, horsehair yarn and fabric thereof	72.943	0.07	0.55	3	9	15	-33.14	0.5
52	Cotton	501.294	0.46	1.07	7	90	88	-466.06	1
53	Vegetable textile fibres nes, paper yarn, woven fabric	7.111	0.01	0.20	7	9	10	-13.02	0.2
54	Manmade filaments	581.418	0.53	1.57	6	53	87	146.70	1.5
55	Manmade staple fibres	1003.942	0.91	3.60	5	79	99	722.23	3.4
56	Wadding, felt, non-wovens, yarns, twine, cordage, etc	252.48	0.23	1.76	11	26	67	132.11	1.6
57	Carpets and other textile floor coverings	100.019	0.09	0.85	9	12	42	90.60	0.8
58	Special woven or tufted fabric, lace, tapestry etc	147.902	0.13	1.29	11	25	66	16.04	1.2
59	Impregnated, coated or laminated textile fabric	145.727	0.13	0.89	7	18	45	-71.36	0.8
60	Knitted or crocheted fabric	155.967	0.14	0.79	8	15	44	-202.07	0.7
61	Articles of apparel, accessories, knit or crochet	1905.695	1.73	1.51	10	98	115	1838.29	1.4
62	Articles of apparel, accessories, not knit or crochet	1581.822	1.44	1.07	9	110	128	1467.19	1
63	Other made textile articles, sets, worn clothing etc	246.089	0.22	0.73	15	47	81	166.54	0.7
64	Footwear, gaiters and the like, parts thereof	892.184	0.81	1.31	8	27	95	816.86	1.2
65	Headgear and parts thereof	43.188	0.04	0.97	10	8	32	39.14	0.9
66	Umbrellas, walking-sticks, seat-sticks, whips, etc	2.449	0.00	0.15		3	4	-0.41	0.1
67	Bird skin, feathers, artificial flowers, human hair	52.444	0.05	1.84	4	7	26	46.99	1.7
68	Stone, plaster, cement, asbestos, mica, etc articles	151.197	0.14	0.54	14	35	53	-23.78	0.5
69	Ceramic products	612.159	0.56	2.02	11	26	69	377.20	1.9
70	Glass and glassware	452.852	0.41	0.96	11	42	73	22.93	0.9
71	Pearls, precious stones, metals, coins, etc	3210.17	2.92	1.67	15	36	85	-831.55	1.6
72	Iron and steel	1344.928	1.22	0.47	26	102	58	-7089.23	0.4

73	Articles of iron or steel	1634.249	1.48	0.95	17	102	114	-1154.44	0.9
74	Copper and articles thereof	560.415	0.51	0.73	21	38	42	-1053.44	0.7
75	Nickel and articles thereof	6.781	0.01	0.04	23	5	4	-59.08	0
76	Aluminium and articles thereof	712.048	0.65	0.68	13	28	56	-1000.93	0.6
78	Lead and articles thereof	2.468	0.00	0.08	19	4	6	-87.38	0.1
79	Zinc and articles thereof	45.235	0.04	0.51	11	8	20	-18.18	0.5
80	Tin and articles thereof	212.082	0.19	6.14	24	6	25	78.30	5.7
81	Other base metals, cermets, articles thereof	24.062	0.02	0.19	17	7	7	-55.19	0.2
82	Tools, implements, cutlery, etc of base metal	125.165	0.11	0.33	10	43	43	-534.49	0.3
83	Miscellaneous articles of base metal	297.081	0.27	0.78	14	34	74	42.30	0.7
84	Boilers, machinery; nuclear reactors, etc	19345.488	17.57	1.39	12	394	147	2325.38	1.3
85	Electrical, electronic equipment	20673.441	18.78	1.48	13	245	138	-2729.45	1.4
86	Railway, tramway locomotives, rolling stock, equip.	9.712	0.01	0.04	19	3	17	-1.45	0
87	Vehicles other than railway, tramway	8152.289	7.40	0.90	13	67	160	4116.55	0.8
88	Aircraft, spacecraft, and parts thereof	1035.626	0.94	0.74	4	8	32	-157.97	0.7
89	Ships, boats and other floating structures	278.296	0.25	0.38	12	12	23	-302.79	0.4
90	Optical, photo, technical, medical, etc apparatus	1770.868	1.61	0.54	14	101	78	-577.64	0.5
91	Clocks and watches and parts thereof	388.236	0.35	1.55	7	26	26	37.41	1.4
92	Musical instruments, parts and accessories	15.645	0.01	0.32	8	3	18	-11.64	0.3
93	Arms and ammunition, parts and accessories thereof	26.919	0.02	0.37	8	4	3	1.33	0.3
94	Furniture, lighting, signs, prefabricated buildings	1399.932	1.27	1.12	12	36	101	1187.61	1.1
95	Toys, games, sports requisites	593.862	0.54	0.96	9	39	83	452.79	0.9
96	Miscellaneous manufactured articles	202.713	0.18	1.05	9	42	64	26.51	1
97	Works of art, collectors pieces and antiques	5.16	0.00	0.04	9	4	8	4.47	0
99	Commodities not elsewhere specified	1574.601	1.43	0.68	20	1	90	193.36	0.6

Vietnam

HS 2002	Product Group	Exports value US\$ mil.	Exports as a share of total exports (%)	Exports as a share of world exports (%)	Growth of world exports in value (% p.a)	No. of exported products * (>0.1 US\$ mil)	No. of exports markets (>0.1 US\$ mil)	Net Trade	RCAI
00	All industries	33,957	100.00	0.33		1959	113	432	
01	Live animals	15	0.05	0.12	10	1	7	12	0.3
02	Meat and edible meat offal	33	0.10	0.05	12	5	8	-11	0.2
03	Fish, crustaceans, molluscs, aquatic invertebrates nes	2,000	5.89	3.46	8	45	51	1,841	10.5
04	Dairy products, eggs, honey, edible animal product nes	29	0.09	0.07	11	4	15	-200	0.2
05	Products of animal origin, nes	13	0.04	0.24	11	6	11	-25	0.7
06	Live trees, plants, bulbs, roots, cut flowers etc	9	0.03	0.07	12	6	6	5	0.2
07	Edible vegetables and certain roots and tubers	122	0.36	0.37	10	26	25	75	1.1
08	Edible fruit, nuts, peel of citrus fruit, melons	496	1.46	1.01	14	22	50	336	3.1
09	Coffee, tea, mate and spices	1,091	3.21	5.69	13	22	72	1,066	17.3
10	Cereals	983	2.90	2.26	6	6	39	815	6.8
11	Milling products, malt, starches, inulin, wheat gluten	71	0.21	0.85	9	8	16	-4	2.6
12	Oil seed, oleagic fruits, grain, seed, fruit, etc, nes	35	0.10	0.12	10	10	22	-30	0.4
13	Lac, gums, resins, vegetable saps and extracts nes	4	0.01	0.11	12	3	4	-5	0.3
14	Vegetable plaiting materials, vegetable products nes	6	0.02	1.36	2	5	14	4	4.1
15	Animal,vegetable fats and oils, cleavage products, etc	13	0.04	0.03	19	9	9	-105	0.1
16	Meat, fish and seafood food preparations nes	494	1.45	1.92	13	16	40	440	5.8
17	Sugars and sugar confectionery	10	0.03	0.04	10	3	16	-82	0.1
18	Cocoa and cocoa preparations	1	0.00	0.00	14	3	2	-9	0
19	Cereal, flour, starch, milk preparations and products	78	0.23	0.26	15	11	29	-7	0.8
20	Vegetable, fruit, nut, etc food preparations	80	0.23	0.25	12	17	31	66	0.8
21	Miscellaneous edible preparations	40	0.12	0.13	15	10	33	-43	0.4
22	Beverages, spirits and vinegar	15	0.05	0.03	13	8	11	-140	0.1
23	Residues, wastes of food industry, animal fodder	10	0.03	0.03	9	6	11	-475	0.1
24	Tobacco and manufactured tobacco substitutes	12	0.04	0.05	5	6	6	-254	0.2
25	Salt, sulphur, earth, stone, plaster, lime and cement	60	0.18	0.23	12	19	20	-128	0.7
26	Ores, slag and ash	163	0.48	0.23	31	17	8	153	0.7
27	Mineral fuels, oils, distillation products, etc	8,096	23.85	0.58	24	7	22	3,212	1.8
28	Inorganic chemicals, precious metal compound, isoto	19	0.06	0.03	13	15	11	-219	0.1
29	Organic chemicals	97	0.29	0.04	17	18	29	-607	0.1
30	Pharmaceutical products	13	0.04	0.01	21	6	10	-446	0
31	Fertilizers	3	0.01	0.01	13	1	2	-488	0
32	Tanning, dyeing extracts, tannins, derivs,pigments etc	8	0.02	0.01	11	11	11	-328	0
33	Essential oils, perfumes, cosmetics, toileteries	49	0.14	0.08	15	19	22	-98	0.3
34	Soaps, lubricants, waxes, candles, modelling pastes	74	0.22	0.24	13	10	24	-35	0.7
35	Albuminoids, modified starches, glues, enzymes	15	0.05	0.10	10	2	10	-97	0.3
36	Explosives, pyrotechnics, matches, pyrophorics, etc	1	0.00	0.04	13	2	3	-4	0.1
37	Photographic or cinematographic goods	9	0.03	0.04	6	5	4	-62	0.1
38	Miscellaneous chemical products	41	0.12	0.04	13	13	20	-416	0.1
39	Plastics and articles thereof	345	1.02	0.10	16	71	51	-1,562	0.3
40	Rubber and articles thereof	530	1.56	0.53	16	41	62	189	1.6
41	Raw hides and skins (other than furskins) and leather	53	0.16	0.20	3	15	16	-645	0.6
42	Articles of leather, animal gut, harness, travel goods	594	1.75	1.67	9	18	55	577	5.1
43	Furskins and artificial fur, manufactures thereof	3	0.01	0.04	18	4	6	-16	0.1
44	Wood and articles of wood, wood charcoal	317	0.93	0.31	12	38	40	-23	1

45	Cork and articles of cork	0	0.00	0.02	6	2	1	0	0.1
46	Manufactures of plaiting material, basketwork, etc.	129	0.38	6.98	12	5	45	128	21.2
47	Pulp of wood, fibrous cellulosic material, waste etc	0	0.00	0.00	8	1	1	-82	0
48	Paper & paperboard, articles of pulp, paper and board	111	0.33	0.08	8	33	35	-410	0.2
49	Printed books, newspapers, pictures etc	7	0.02	0.02	9	8	15	-32	0.1
50	Silk	29	0.09	0.91	10	6	8	-86	2.8
51	Wool, animal hair, horsehair yarn and fabric thereof	3	0.01	0.03	3	3	2	-59	0.1
52	Cotton	70	0.21	0.15	7	48	21	-533	0.4
53	Vegetable textile fibres nes, paper yarn, woven fabric	12	0.04	0.34	7	8	9	-7	1
54	Manmade filaments	83	0.24	0.22	6	35	32	-646	0.7
55	Manmade staple fibres	90	0.27	0.32	5	37	26	-460	1
56	Wadding, felt, non-wovens, yarns, twine, cordage, etc	40	0.12	0.28	11	22	27	-130	0.8
57	Carpets and other textile floor coverings	12	0.04	0.10	9	9	7	3	0.3
58	Special woven or tufted fabric, lace, tapestry etc	16	0.05	0.14	11	17	25	-232	0.4
59	Impregnated, coated or laminated textile fabric	12	0.04	0.07	7	6	12	-392	0.2
60	Knitted or crocheted fabric	17	0.05	0.08	8	14	18	-686	0.3
61	Articles of apparel, accessories, knit or crochet	1,713	5.05	1.36	10	94	56	1,627	4.1
62	Articles of apparel, accessories, not knit or crochet	3,108	9.16	2.11	9	109	58	3,001	6.4
63	Other made textile articles, sets, worn clothing etc	291	0.86	0.86	15	45	48	250	2.6
64	Footwear, gaiters and the like, parts thereof	4,898	14.43	7.19	8	26	80	4,643	21.8
65	Headgear and parts thereof	138	0.41	3.09	10	8	35	129	9.4
66	Umbrellas, walking-sticks, seat-sticks, whips, etc	4	0.01	0.24		3	6	4	0.7
67	Bird skin, feathers, artificial flowers, human hair	3	0.01	0.11	4	4	5	2	0.3
68	Stone, plaster, cement, asbestos, mica, etc articles	59	0.17	0.21	14	23	28	-18	0.6
69	Ceramic products	318	0.94	1.05	11	23	56	266	3.2
70	Glass and glassware	40	0.12	0.08	11	22	24	-65	0.3
71	Pearls, precious stones, metals, coins, etc	143	0.42	0.07	15	15	21	-77	0.2
72	Iron and steel	60	0.18	0.02	26	32	18	-2,523	0.1
73	Articles of iron or steel	255	0.75	0.15	17	75	43	-280	0.4
74	Copper and articles thereof	6	0.02	0.01	21	10	9	-283	0
75	Nickel and articles thereof	0	0.00	0.00	23	0	0	-14	0
76	Aluminium and articles thereof	37	0.11	0.03	13	23	19	-333	0.1
78	Lead and articles thereof	5	0.02	0.16	19	4	5	-23	0.5
79	Zinc and articles thereof	10	0.03	0.11	11	2	15	-41	0.3
80	Tin and articles thereof	17	0.05	0.48	24	2	9	7	1.5
81	Other base metals, cermets, articles thereof	16	0.05	0.13	17	2	11	10	0.4
82	Tools, implements, cutlery, etc of base metal	97	0.29	0.26	10	28	32	-1	0.8
83	Miscellaneous articles of base metal	51	0.15	0.13	14	21	26	-63	0.4
84	Boilers, machinery, nuclear reactors, etc	987	2.91	0.07	12	176	63	-3,275	0.2
85	Electrical, electronic equipment	1,945	5.73	0.14	13	147	60	-664	0.4
86	Railway, tramway locomotives, rolling stock, equip.	2	0.01	0.01	19	1	2	-9	0
87	Vehicles other than railway, tramway	355	1.05	0.04	13	31	47	-1,157	0.1
88	Aircraft, spacecraft, and parts thereof	13	0.04	0.01	4	6	13	-474	0
89	Ships, boats and other floating structures	4	0.01	0.01	12	7	12	-73	0
90	Optical, photo, technical, medical, etc apparatus	164	0.48	0.05	14	58	34	-336	0.2
91	Clocks and watches and parts thereof	18	0.05	0.07	7	8	11	2	0.2
92	Musical instruments, parts and accessories	7	0.02	0.14	8	7	15	-5	0.4
93	Arms and ammunition, parts and accessories thereof	0	0.00	0.01	8	1	1	-2	0
94	Furniture, lighting, signs, prefabricated buildings	2,032	5.99	1.63	12	32	62	1,938	4.9
95	Toys, games, sports requisites	162	0.48	0.26	9	33	45	133	0.8
96	Miscellaneous manufactured articles	91	0.27	0.48	9	30	42	-105	1.4
97	Works of art, collectors pieces and antiques	6	0.02	0.04	9	5	15	5	0.1
99	Commodities not elsewhere specified	110	0.32	0.05	20	2	14	-291	0.1

Source: UNCTAD/WTO database.

Table A4.3: ASEAN-5's Spearman Rank Correlation Coefficients, 1997 to 2003
INDONESIA

Nonparametric Correlations

Correlations					Correlations				
Spearman's rho	RCA03	Correlation Coefficient	1.000	.858**	Spearman's rho	RCA03	Correlation Coefficient	1.000	.735**
		Sig. (2-tailed)		.000			Sig. (2-tailed)		.000
		N	247	247			N	247	247
	RCA97	Correlation Coefficient	.858**	1.000		RCA98	Correlation Coefficient	.735**	1.000
		Sig. (2-tailed)	.000				Sig. (2-tailed)	.000	
		N	247	247			N	247	247

** Correlation is significant at the .01 level (2-tailed).

Correlations					Correlations				
Spearman's rho	RCA03	Correlation Coefficient	1.000	.891**	Spearman's rho	RCA03	Correlation Coefficient	1.000	.918**
		Sig. (2-tailed)		.000			Sig. (2-tailed)		.000
		N	247	247			N	247	247
	RCA99	Correlation Coefficient	.891**	1.000		RCA00	Correlation Coefficient	.918**	1.000
		Sig. (2-tailed)	.000				Sig. (2-tailed)	.000	
		N	247	247			N	247	247

** Correlation is significant at the .01 level (2-tailed).

Correlations					Correlations				
Spearman's rho	RCA03	Correlation Coefficient	1.000	.898**	Spearman's rho	RCA03	Correlation Coefficient	1.000	.937**
		Sig. (2-tailed)		.000			Sig. (2-tailed)		.000
		N	247	247			N	247	247
	RCA01	Correlation Coefficient	.898**	1.000		RCA02	Correlation Coefficient	.937**	1.000
		Sig. (2-tailed)	.000				Sig. (2-tailed)	.000	
		N	247	247			N	247	247

** Correlation is significant at the .01 level (2-tailed).

MALAYSIA

Nonparametric Correlations

Correlations					Correlations				
Spearman's rho	RCA03	Correlation Coefficient	1.000	.873**	Spearman's rho	RCA03	Correlation Coefficient	1.000	.783**
		Sig. (2-tailed)		.000			Sig. (2-tailed)		.000
		N	247	247			N	247	247
	RCA97	Correlation Coefficient	.873**	1.000		RCA98	Correlation Coefficient	.783**	1.000
		Sig. (2-tailed)	.000				Sig. (2-tailed)	.000	
		N	247	247			N	247	247

** Correlation is significant at the .01 level (2-tailed).

Correlations					Correlations				
Spearman's rho	RCA03	Correlation Coefficient	1.000	.914**	Spearman's rho	RCA03	Correlation Coefficient	1.000	.930**
		Sig. (2-tailed)		.000			Sig. (2-tailed)		.000
		N	247	247			N	247	247
	RCA99	Correlation Coefficient	.914**	1.000		RCA00	Correlation Coefficient	.930**	1.000
		Sig. (2-tailed)	.000				Sig. (2-tailed)	.000	
		N	247	247			N	247	247

** Correlation is significant at the .01 level (2-tailed).

Correlations				
			RCA03	RCA01
Spearman's rho	RCA03	Correlation Coefficient	1.000	.923**
		Sig. (2-tailed)	.	.000
		N	247	247
	RCA01	Correlation Coefficient	.923**	1.000
		Sig. (2-tailed)	.000	.
		N	247	247

** Correlation is significant at the .01 level (2-tailed).

Correlations				
			RCA03	RCA02
Spearman's rho	RCA03	Correlation Coefficient	1.000	.956**
		Sig. (2-tailed)	.	.000
		N	247	247
	RCA02	Correlation Coefficient	.956**	1.000
		Sig. (2-tailed)	.000	.
		N	247	247

** Correlation is significant at the .01 level (2-tailed).

PHILIPPINES

Nonparametric Correlations

Correlations				
			RCA03	RCA97
Spearman's rho	RCA03	Correlation Coefficient	1.000	.835**
		Sig. (2-tailed)	.	.000
		N	247	247
	RCA97	Correlation Coefficient	.835**	1.000
		Sig. (2-tailed)	.000	.
		N	247	247

** Correlation is significant at the .01 level (2-tailed).

Correlations				
			RCA03	RCA98
Spearman's rho	RCA03	Correlation Coefficient	1.000	.808**
		Sig. (2-tailed)	.	.000
		N	247	247
	RCA98	Correlation Coefficient	.808**	1.000
		Sig. (2-tailed)	.000	.
		N	247	247

** Correlation is significant at the .01 level (2-tailed).

Correlations				
			RCA03	RCA99
Spearman's rho	RCA03	Correlation Coefficient	1.000	.883**
		Sig. (2-tailed)	.	.000
		N	247	247
	RCA99	Correlation Coefficient	.883**	1.000
		Sig. (2-tailed)	.000	.
		N	247	247

** Correlation is significant at the .01 level (2-tailed).

Correlations				
			RCA03	RCA00
Spearman's rho	RCA03	Correlation Coefficient	1.000	.903**
		Sig. (2-tailed)	.	.000
		N	247	247
	RCA00	Correlation Coefficient	.903**	1.000
		Sig. (2-tailed)	.000	.
		N	247	247

** Correlation is significant at the .01 level (2-tailed).

Correlations				
			RCA03	RCA01
Spearman's rho	RCA03	Correlation Coefficient	1.000	.902**
		Sig. (2-tailed)	.	.000
		N	247	247
	RCA01	Correlation Coefficient	.902**	1.000
		Sig. (2-tailed)	.000	.
		N	247	247

** Correlation is significant at the .01 level (2-tailed).

Correlations				
			RCA03	RCA02
Spearman's rho	RCA03	Correlation Coefficient	1.000	.952**
		Sig. (2-tailed)	.	.000
		N	247	247
	RCA02	Correlation Coefficient	.952**	1.000
		Sig. (2-tailed)	.000	.
		N	247	247

** Correlation is significant at the .01 level (2-tailed).

THAILAND

Nonparametric Correlations

Correlations				
			RCA03	RCA97
Spearman's rho	RCA03	Correlation Coefficient	1.000	.904**
		Sig. (2-tailed)	.	.000
		N	247	247
	RCA97	Correlation Coefficient	.904**	1.000
		Sig. (2-tailed)	.000	.
		N	247	247

** Correlation is significant at the .01 level (2-tailed).

Correlations				
			RCA03	RCA98
Spearman's rho	RCA03	Correlation Coefficient	1.000	.804**
		Sig. (2-tailed)	.	.000
		N	247	247
	RCA98	Correlation Coefficient	.804**	1.000
		Sig. (2-tailed)	.000	.
		N	247	247

** Correlation is significant at the .01 level (2-tailed).

Correlations				
			RCA03	RCA99
Spearman's rho	RCA03	Correlation Coefficient	1.000	.920**
		Sig. (2-tailed)	.	.000
		N	247	247
	RCA99	Correlation Coefficient	.920**	1.000
		Sig. (2-tailed)	.000	.
		N	247	247

** Correlation is significant at the .01 level (2-tailed).

Correlations				
			RCA03	RCA00
Spearman's rho	RCA03	Correlation Coefficient	1.000	.934**
		Sig. (2-tailed)	.	.000
		N	247	247
	RCA00	Correlation Coefficient	.934**	1.000
		Sig. (2-tailed)	.000	.
		N	247	247

** Correlation is significant at the .01 level (2-tailed).

Correlations				
			RCA03	RCA01
Spearman's rho	RCA03	Correlation Coefficient	1.000	.931**
		Sig. (2-tailed)	.	.000
		N	247	247
	RCA01	Correlation Coefficient	.931**	1.000
		Sig. (2-tailed)	.000	.
		N	247	247

** Correlation is significant at the .01 level (2-tailed).

Correlations				
			Thai2003	Thai2002
Spearman's rho	Thai2003	Correlation Coefficient	1.000	.962**
		Sig. (2-tailed)	.	.000
		N	23	23
	Thai2002	Correlation Coefficient	.962**	1.000
		Sig. (2-tailed)	.000	.
		N	23	23

** Correlation is significant at the 0.01 level (2-tailed).

VIETNAM

Nonparametric Correlations

Correlations				
			RCA03	RCA97
Spearman's rho	RCA03	Correlation Coefficient	1.000	.761**
		Sig. (2-tailed)	.	.000
		N	247	247
	RCA97	Correlation Coefficient	.761**	1.000
		Sig. (2-tailed)	.000	.
		N	247	247

** Correlation is significant at the .01 level (2-tailed).

Correlations				
			RCA03	RCA98
Spearman's rho	RCA03	Correlation Coefficient	1.000	.642**
		Sig. (2-tailed)	.	.000
		N	247	247
	RCA98	Correlation Coefficient	.642**	1.000
		Sig. (2-tailed)	.000	.
		N	247	247

** Correlation is significant at the .01 level (2-tailed).

Correlations				
			RCA03	RCA99
Spearman's rho	RCA03	Correlation Coefficient	1.000	.820**
		Sig. (2-tailed)	.	.000
		N	247	247
	RCA99	Correlation Coefficient	.820**	1.000
		Sig. (2-tailed)	.000	.
		N	247	247

** Correlation is significant at the .01 level (2-tailed).

Correlations				
			RCA03	RCA00
Spearman's rho	RCA03	Correlation Coefficient	1.000	.848**
		Sig. (2-tailed)	.	.000
		N	247	247
	RCA00	Correlation Coefficient	.848**	1.000
		Sig. (2-tailed)	.000	.
		N	247	247

** Correlation is significant at the .01 level (2-tailed).

Correlations				
			RCA03	RCA01
Spearman's rho	RCA03	Correlation Coefficient	1.000	.878**
		Sig. (2-tailed)	.	.000
		N	247	247
	RCA01	Correlation Coefficient	.878**	1.000
		Sig. (2-tailed)	.000	.
		N	247	247

** Correlation is significant at the .01 level (2-tailed).

Correlations				
			RCA03	RCA02
Spearman's rho	RCA03	Correlation Coefficient	1.000	.944**
		Sig. (2-tailed)	.	.000
		N	247	247
	RCA02	Correlation Coefficient	.944**	1.000
		Sig. (2-tailed)	.000	.
		N	247	247

** Correlation is significant at the .01 level (2-tailed).

Source: Author's calculations based on UN Comtrade database with output from SPSS.

Table A4.4: ASEAN-5's Spearman Rank Correlation Coefficients between Average Changes in RCA Vectors and World Export Growth, 1997-2001 and 2001-2005

Indonesia

Correlations				
			WEG9701	INrca9701
Spearman's rho WEG9701	Correlation Coefficient		1.000	-.511*
	Sig. (2-tailed)		.	.013
	N		23	23
INrca9701	Correlation Coefficient		-.511*	1.000
	Sig. (2-tailed)		.013	.
	N		23	23

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations				
			WIG0105	INrca0105
Spearman's rho WIG0105	Correlation Coefficient		1.000	.048
	Sig. (2-tailed)		.	.680
	N		97	97
INrca0105	Correlation Coefficient		.048	1.000
	Sig. (2-tailed)		.680	.
	N		97	97

Malaysia

Correlations				
			WEG9701	MArca9701
Spearman's rho WEG9701	Correlation Coefficient		1.000	-.015
	Sig. (2-tailed)		.	.946
	N		23	23
MArca9701	Correlation Coefficient		-.015	1.000
	Sig. (2-tailed)		.946	.
	N		23	23

Correlations				
			WIG0105	MArca0105
Spearman's rho WIG0105	Correlation Coefficient		1.000	.198*
	Sig. (2-tailed)		.	.026
	N		97	97
MArca0105	Correlation Coefficient		.198*	1.000
	Sig. (2-tailed)		.026	.
	N		97	97

*. Correlation is significant at the 0.05 level (2-tailed).

Philippines

Correlations				
			WEG9701	PHrca9701
Spearman's rho WEG9701	Correlation Coefficient		1.000	-.149
	Sig. (2-tailed)		.	.498
	N		23	23
PHrca9701	Correlation Coefficient		-.149	1.000
	Sig. (2-tailed)		.498	.
	N		23	23

Correlations				
			WIG0105	PHrca0105
Spearman's rho WIG0105	Correlation Coefficient		1.000	.048
	Sig. (2-tailed)		.	.275
	N		97	97
PHrca0105	Correlation Coefficient		.048	1.000
	Sig. (2-tailed)		.275	.
	N		97	97

Thailand

Correlations				
			WEG9701	THArca9701
Spearman's rho WEG9701	Correlation Coefficient		1.000	-.389
	Sig. (2-tailed)		.	.067
	N		23	23
THArca9701	Correlation Coefficient		-.389	1.000
	Sig. (2-tailed)		.067	.
	N		23	23

Correlations				
			WIG0105	TLrca0105
Spearman's rho WIG0105	Correlation Coefficient		1.000	-.156
	Sig. (2-tailed)		.	.229
	N		97	97
TLrca0105	Correlation Coefficient		-.156	1.000
	Sig. (2-tailed)		.229	.
	N		97	97

Vietnam

Correlations				
			VNrca9701	WEG9701
Spearman's rho VNrca9701	Correlation Coefficient		1.000	-.358
	Sig. (2-tailed)		.	.093
	N		23	23
WEG9701	Correlation Coefficient		-.358	1.000
	Sig. (2-tailed)		.093	.
	N		23	23

Correlations				
			WIG0105	VNrca0105
Spearman's rho WIG0105	Correlation Coefficient		1.000	-.144
	Sig. (2-tailed)		.	.086
	N		97	97
VNrca0105	Correlation Coefficient		-.144	1.000
	Sig. (2-tailed)		.086	.
	N		97	97

Table A4.5: Vietnam 2004's, ASEAN-4's and South Korea's Descriptive Statistics for 16 Product Groups, Selected Years: 80, 85, 90, 94, 97, 99, 01, 03, and 04 (SPSS Output)

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
INDO80	16	.00	3.58	.6081	1.08254	1.172
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
INDO90	16	.00	4.16	.9519	1.28688	1.656
Valid N (listwise)	16					

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Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
INDO94	16	.02	3.35	1.0487	1.08873	1.185
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
INDO97	16	.04	2.80	.8794	.86515	.748
Valid N (listwise)	16					

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Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
INDO99	16	.06	2.91	1.0450	.98285	.966
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
INDO01	16	.07	2.52	1.0819	.89409	.799
Valid N (listwise)	16					

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Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
INDO03	16	.07	2.44	1.0575	.83209	.692
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
INDO04	16	.07	2.24	1.0344	.74532	.556
Valid N (listwise)	16					

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Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
MALA80	16	.01	11.72	1.4637	2.87036	8.239
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
MALA90	16	.04	8.38	1.6825	2.10246	4.420
Valid N (listwise)	16					

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Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
MALA94	16	.04	5.18	1.5194	1.58348	2.507
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
MALA97	16	.05	4.79	1.4719	1.42771	2.038
Valid N (listwise)	16					

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Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
MALA99	16	.04	4.81	1.4588	1.44534	2.089
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
MALA01	16	.03	4.33	1.4263	1.38278	1.912
Valid N (listwise)	16					

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Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
MALA03	16	.04	5.85	1.5219	1.58323	2.507
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
MALA04	16	.04	5.17	1.4856	1.44756	2.095
Valid N (listwise)	16					

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Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
PHI80	16	.01	4.97	1.1506	1.48634	2.209
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
PHI90	16	.03	9.67	1.8638	2.64863	7.015
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
PHI94	16	.10	5.05	1.2488	1.39026	1.933
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
PHI97	16	.07	9.10	1.7087	2.36095	5.574
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
PHI99	16	.03	11.00	1.6238	2.80957	7.894
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
PHI01	16	.02	9.21	1.6419	2.45091	6.007
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
PHI03	16	.02	12.00	1.8625	3.08527	9.519
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
PHI04	16	.03	10.66	1.7856	2.78122	7.735
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
THAI80	16	.01	4.19	.8831	1.38354	1.914
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
THAI90	16	.05	3.90	1.3125	1.22837	1.509
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
THAI94	16	.10	3.06	1.1744	.94725	.897
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
THAI97	16	.12	2.39	1.1713	.81787	.669
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
THAI99	16	.09	2.32	1.1500	.77355	.598
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
THAI01	16	.09	2.16	1.1481	.72978	.533
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
THAI03	16	.06	2.15	1.1775	.73537	.541
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
THAI04	16	.00	2.10	1.1625	.67725	.459
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
INDO85	16	.00	6.37	.8862	1.68716	2.847
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
MALA85	16	.02	10.80	1.6319	2.62629	6.897
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
PHI85	16	.00	6.23	1.4119	1.92496	3.705
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
THAI85	16	.00	4.45	1.0675	1.60799	2.586
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
KOREA80	16	.05	8.44	2.0463	2.52773	6.389
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
KOREA85	16	.16	7.05	1.6094	1.82291	3.323
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
KOREA90	16	.10	4.71	1.5688	1.51224	2.287
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
KOREA94	16	.17	3.95	1.3581	1.19103	1.419
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
KOREA97	16	.14	3.74	1.2625	1.06177	1.127
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
KOREA99	16	.11	3.58	1.3019	1.00333	1.007
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
KOREA01	16	.10	3.06	1.2813	.87839	.772
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
KOREA03	16	.07	3.41	1.3481	1.04339	1.089
Valid N (listwise)	16					

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VN2004	16	.01	6.18	1.1219	1.57574	2.483
KOREA04	16	.07	3.46	1.3238	1.02757	1.056
Valid N (listwise)	16					

Table A6.1: ASEAN-5's Spearman Rank Correlation Coefficients between RCA Indices for 23 Selected Product Groups, 1997-2003 (SPSS Output)

Correlations				
Spearman's rho	INFO97	Correlation Coefficient	1.000	-.357
		Sig. (1-tailed)	.	.216
		N	7	7
	VNFO97	Correlation Coefficient	-.357	1.000
		Sig. (1-tailed)	.216	.
		N	7	7

Correlations				
Spearman's rho	INRAW97	Correlation Coefficient	1.000	.750
		Sig. (2-tailed)	.	.052
		N	7	7
	VNRAW97	Correlation Coefficient	.750	1.000
		Sig. (2-tailed)	.052	.
		N	7	7

Correlations				
Spearman's rho	IN3IN97	Correlation Coefficient	1.000	.679
		Sig. (2-tailed)	.	.094
		N	7	7
	VN3IN97	Correlation Coefficient	.679	1.000
		Sig. (2-tailed)	.094	.
		N	7	7

Correlations				
Spearman's rho	INDO04	Correlation Coefficient	1.000	.750
		Sig. (2-tailed)	.	.052
		N	7	7
	VN04	Correlation Coefficient	.750	1.000
		Sig. (2-tailed)	.052	.
		N	7	7

Correlations				
Spearman's rho	INDO05	Correlation Coefficient	1.000	-.546
		Sig. (2-tailed)	.	.205
		N	7	7
	VN05	Correlation Coefficient	-.546	1.000
		Sig. (2-tailed)	.205	.
		N	7	7

Correlations				
Spearman's rho	INDO06	Correlation Coefficient	1.000	-.193
		Sig. (2-tailed)	.	.679
		N	7	7
	VN06	Correlation Coefficient	-.193	1.000
		Sig. (2-tailed)	.679	.
		N	7	7

Correlations				
Spearman's rho	INDO07	Correlation Coefficient	1.000	.000
		Sig. (2-tailed)	.	1.000
		N	7	7
	VN07	Correlation Coefficient	.000	1.000
		Sig. (2-tailed)	1.000	.
		N	7	7

Correlations				
Spearman's rho	INDO08	Correlation Coefficient	1.000	.468
		Sig. (2-tailed)	.	.290
		N	7	7
	VN08	Correlation Coefficient	.468	1.000
		Sig. (2-tailed)	.290	.
		N	7	7

Correlations				
Spearman's rho	INDO09	Correlation Coefficient	1.000	.234
		Sig. (2-tailed)	.	.613
		N	7	7
	VN09	Correlation Coefficient	.234	1.000
		Sig. (2-tailed)	.613	.
		N	7	7

Correlations				
Spearman's rho	INDO10	Correlation Coefficient	1.000	-.214
		Sig. (2-tailed)	.	.645
		N	7	7
	VN10	Correlation Coefficient	-.214	1.000
		Sig. (2-tailed)	.645	.
		N	7	7

Correlations				
Spearman's rho	INDO11	Correlation Coefficient	1.000	-.162
		Sig. (2-tailed)	.	.728
		N	7	7
	VN11	Correlation Coefficient	-.162	1.000
		Sig. (2-tailed)	.728	.
		N	7	7

Correlations				
Spearman's rho	INDO12	Correlation Coefficient	1.000	-.734
		Sig. (2-tailed)	.	.060
		N	7	7
	VN12	Correlation Coefficient	-.734	1.000
		Sig. (2-tailed)	.060	.
		N	7	7

Correlations				
Spearman's rho	INDO13	Correlation Coefficient	1.000	.962**
		Sig. (2-tailed)	.	.001
		N	7	7
	VN13	Correlation Coefficient	.962**	1.000
		Sig. (2-tailed)	.001	.
		N	7	7

Correlations				
Spearman's rho	INDO14	Correlation Coefficient	1.000	-.018
		Sig. (2-tailed)	.	.969
		N	7	7
	VN14	Correlation Coefficient	-.018	1.000
		Sig. (2-tailed)	.969	.
		N	7	7

** . Correlation is significant at the .01 level (2-tailed).

Correlations				
			INDO15	VN15
Spearman's rho	INDO15	Correlation Coefficient	1.000	.703
		Sig. (2-tailed)	.	.078
		N	7	7
	VN15	Correlation Coefficient	.703	1.000
		Sig. (2-tailed)	.078	.
		N	7	7

Correlations				
			INDO16	VN16
Spearman's rho	INDO16	Correlation Coefficient	1.000	-.596
		Sig. (2-tailed)	.	.158
		N	7	7
	VN16	Correlation Coefficient	-.596	1.000
		Sig. (2-tailed)	.158	.
		N	7	7

Correlations				
			INDO17	VN17
Spearman's rho	INDO17	Correlation Coefficient	1.000	.143
		Sig. (2-tailed)	.	.760
		N	7	7
	VN17	Correlation Coefficient	.143	1.000
		Sig. (2-tailed)	.760	.
		N	7	7

Correlations				
			INDO18	VN18
Spearman's rho	INDO18	Correlation Coefficient	1.000	.857*
		Sig. (2-tailed)	.	.014
		N	7	7
	VN18	Correlation Coefficient	.857*	1.000
		Sig. (2-tailed)	.014	.
		N	7	7

*. Correlation is significant at the .05 level (2-tailed).

Correlations				
			INDO19	VN19
Spearman's rho	INDO19	Correlation Coefficient	1.000	-.703
		Sig. (2-tailed)	.	.078
		N	7	7
	VN19	Correlation Coefficient	-.703	1.000
		Sig. (2-tailed)	.078	.
		N	7	7

Correlations				
			INDO20	VN20
Spearman's rho	INDO20	Correlation Coefficient	1.000	-.500
		Sig. (2-tailed)	.	.253
		N	7	7
	VN20	Correlation Coefficient	-.500	1.000
		Sig. (2-tailed)	.253	.
		N	7	7

Correlations				
			INDO20	VN20
Spearman's rho	INDO20	Correlation Coefficient	1.000	-.500
		Sig. (2-tailed)	.	.253
		N	7	7
	VN20	Correlation Coefficient	-.500	1.000
		Sig. (2-tailed)	.253	.
		N	7	7

Correlations				
			INDO22	VN22
Spearman's rho	INDO22	Correlation Coefficient	1.000	-.593
		Sig. (2-tailed)	.	.161
		N	7	7
	VN22	Correlation Coefficient	-.593	1.000
		Sig. (2-tailed)	.161	.
		N	7	7

Correlations				
			INDO23	VN23
Spearman's rho	INDO23	Correlation Coefficient	1.000	.827*
		Sig. (2-tailed)	.	.022
		N	7	7
	VN23	Correlation Coefficient	.827*	1.000
		Sig. (2-tailed)	.022	.
		N	7	7

*. Correlation is significant at the .05 level (2-tailed).

Correlations				
			MALAY01	VN01
Spearman's rho	MALAY01	Correlation Coefficient	1.000	.107
		Sig. (2-tailed)	.	.819
		N	7	7
	VN01	Correlation Coefficient	.107	1.000
		Sig. (2-tailed)	.819	.
		N	7	7

Correlations				
			MALAY02	VN02
Spearman's rho	MALAY02	Correlation Coefficient	1.000	.179
		Sig. (2-tailed)	.	.702
		N	7	7
	VN02	Correlation Coefficient	.179	1.000
		Sig. (2-tailed)	.702	.
		N	7	7

Correlations				
			MALAY03	VN03
Spearman's rho	MALAY03	Correlation Coefficient	1.000	-.541
		Sig. (2-tailed)	.	.210
		N	7	7
	VN03	Correlation Coefficient	-.541	1.000
		Sig. (2-tailed)	.210	.
		N	7	7

Correlations				
			MALAY04	VN04
Spearman's rho	MALAY04	Correlation Coefficient	1.000	.214
		Sig. (2-tailed)	.	.645
		N	7	7
	VN04	Correlation Coefficient	.214	1.000
		Sig. (2-tailed)	.645	.
		N	7	7

Correlations				
			MALAY05	VN05
Spearman's rho	MALAY05	Correlation Coefficient	1.000	.537
		Sig. (2-tailed)	.	.214
		N	7	7
	VN05	Correlation Coefficient	.537	1.000
		Sig. (2-tailed)	.214	.
		N	7	7

Correlations

			MALAY06	VN06
Spearman's rho	MALAY06	Correlation Coefficient	1.000	.312
		Sig. (2-tailed)	.	.496
		N	7	7
	VN06	Correlation Coefficient	.312	1.000
		Sig. (2-tailed)	.496	.
		N	7	7

Correlations

			MALAY07	VN07
Spearman's rho	MALAY07	Correlation Coefficient	1.000	.825*
		Sig. (2-tailed)	.	.022
		N	7	7
	VN07	Correlation Coefficient	.825*	1.000
		Sig. (2-tailed)	.022	.
		N	7	7

*. Correlation is significant at the .05 level (2-tailed).

Correlations

			MALAY08	VN08
Spearman's rho	MALAY08	Correlation Coefficient	1.000	.743
		Sig. (2-tailed)	.	.056
		N	7	7
	VN08	Correlation Coefficient	.743	1.000
		Sig. (2-tailed)	.056	.
		N	7	7

Correlations

			MALAY09	VN09
Spearman's rho	MALAY09	Correlation Coefficient	1.000	.334
		Sig. (2-tailed)	.	.465
		N	7	7
	VN09	Correlation Coefficient	.334	1.000
		Sig. (2-tailed)	.465	.
		N	7	7

Correlations

			MALAY10	VN10
Spearman's rho	MALAY10	Correlation Coefficient	1.000	.071
		Sig. (2-tailed)	.	.879
		N	7	7
	VN10	Correlation Coefficient	.071	1.000
		Sig. (2-tailed)	.879	.
		N	7	7

Correlations

			MALAY11	VN11
Spearman's rho	MALAY11	Correlation Coefficient	1.000	.414
		Sig. (2-tailed)	.	.355
		N	7	7
	VN11	Correlation Coefficient	.414	1.000
		Sig. (2-tailed)	.355	.
		N	7	7

Correlations

			MALAY12	VN12
Spearman's rho	MALAY12	Correlation Coefficient	1.000	.144
		Sig. (2-tailed)	.	.758
		N	7	7
	VN12	Correlation Coefficient	.144	1.000
		Sig. (2-tailed)	.758	.
		N	7	7

Correlations

			MALAY13	VN13
Spearman's rho	MALAY13	Correlation Coefficient	1.000	-.843*
		Sig. (2-tailed)	.	.017
		N	7	7
	VN13	Correlation Coefficient	-.843*	1.000
		Sig. (2-tailed)	.017	.
		N	7	7

*. Correlation is significant at the .05 level (2-tailed).

Correlations

			MALAY14	VN14
Spearman's rho	MALAY14	Correlation Coefficient	1.000	-.873*
		Sig. (2-tailed)	.	.010
		N	7	7
	VN14	Correlation Coefficient	-.873*	1.000
		Sig. (2-tailed)	.010	.
		N	7	7

*. Correlation is significant at the .05 level (2-tailed).

Correlations

			MALAY15	VN15
Spearman's rho	MALAY15	Correlation Coefficient	1.000	-.857*
		Sig. (2-tailed)	.	.014
		N	7	7
	VN15	Correlation Coefficient	-.857*	1.000
		Sig. (2-tailed)	.014	.
		N	7	7

*. Correlation is significant at the .05 level (2-tailed).

Correlations

			MALAY16	VN16
Spearman's rho	MALAY16	Correlation Coefficient	1.000	.000
		Sig. (2-tailed)	.	1.000
		N	7	7
	VN16	Correlation Coefficient	.000	1.000
		Sig. (2-tailed)	1.000	.
		N	7	7

Correlations

			MALAY17	VN17
Spearman's rho	MALAY17	Correlation Coefficient	1.000	-.162
		Sig. (2-tailed)	.	.728
		N	7	7
	VN17	Correlation Coefficient	-.162	1.000
		Sig. (2-tailed)	.728	.
		N	7	7

Correlations

			MALAY18	VN18
Spearman's rho	MALAY18	Correlation Coefficient	1.000	-.643
		Sig. (2-tailed)	.	.119
		N	7	7
	VN18	Correlation Coefficient	-.643	1.000
		Sig. (2-tailed)	.119	.
		N	7	7

Correlations

			MALAY19	VN19
Spearman's rho	MALAY19	Correlation Coefficient	1.000	-.321
		Sig. (2-tailed)	.	.482
		N	7	7
	VN19	Correlation Coefficient	-.321	1.000
		Sig. (2-tailed)	.482	.
		N	7	7

Correlations				
			MALAY20	VN20
Spearman's rho	MALAY20	Correlation Coefficient	1.000	-.342
		Sig. (2-tailed)	.	.452
		N	7	7
	VN20	Correlation Coefficient	-.342	1.000
		Sig. (2-tailed)	.452	.
		N	7	7

Correlations				
			MALAY21	VN21
Spearman's rho	MALAY21	Correlation Coefficient	1.000	.837*
		Sig. (2-tailed)	.	.019
		N	7	7
	VN21	Correlation Coefficient	.837*	1.000
		Sig. (2-tailed)	.019	.
		N	7	7

*. Correlation is significant at the .05 level (2-tailed).

Correlations				
			MALAY22	VN22
Spearman's rho	MALAY22	Correlation Coefficient	1.000	.250
		Sig. (2-tailed)	.	.589
		N	7	7
	VN22	Correlation Coefficient	.250	1.000
		Sig. (2-tailed)	.589	.
		N	7	7

Correlations				
			MALAY23	VN23
Spearman's rho	MALAY23	Correlation Coefficient	1.000	-.342
		Sig. (2-tailed)	.	.452
		N	7	7
	VN23	Correlation Coefficient	-.342	1.000
		Sig. (2-tailed)	.452	.
		N	7	7

Correlations				
			PHI01	VN01
Spearman's rho	PHI01	Correlation Coefficient	1.000	.464
		Sig. (2-tailed)	.	.294
		N	7	7
	VN01	Correlation Coefficient	.464	1.000
		Sig. (2-tailed)	.294	.
		N	7	7

Correlations				
			PHI02	VN02
Spearman's rho	PHI02	Correlation Coefficient	1.000	.600
		Sig. (2-tailed)	.	.154
		N	7	7
	VN02	Correlation Coefficient	.600	1.000
		Sig. (2-tailed)	.154	.
		N	7	7

Correlations				
			PHI03	VN03
Spearman's rho	PHI03	Correlation Coefficient	1.000	-.703
		Sig. (2-tailed)	.	.078
		N	7	7
	VN03	Correlation Coefficient	-.703	1.000
		Sig. (2-tailed)	.078	.
		N	7	7

Correlations				
			PHI04	VN04
Spearman's rho	PHI04	Correlation Coefficient	1.000	.342
		Sig. (2-tailed)	.	.452
		N	7	7
	VN04	Correlation Coefficient	.342	1.000
		Sig. (2-tailed)	.452	.
		N	7	7

Correlations				
			PHI05	VN05
Spearman's rho	PHI05	Correlation Coefficient	1.000	.073
		Sig. (2-tailed)	.	.877
		N	7	7
	VN05	Correlation Coefficient	.073	1.000
		Sig. (2-tailed)	.877	.
		N	7	7

Correlations				
			PHI06	VN06
Spearman's rho	PHI06	Correlation Coefficient	1.000	-.953**
		Sig. (2-tailed)	.	.001
		N	7	7
	VN06	Correlation Coefficient	-.953**	1.000
		Sig. (2-tailed)	.001	.
		N	7	7

**. Correlation is significant at the .01 level (2-tailed).

Correlations				
			PHI07	VN07
Spearman's rho	PHI07	Correlation Coefficient	1.000	.840*
		Sig. (2-tailed)	.	.018
		N	7	7
	VN07	Correlation Coefficient	.840*	1.000
		Sig. (2-tailed)	.018	.
		N	7	7

*. Correlation is significant at the .05 level (2-tailed).

Correlations				
			PHI08	VN08
Spearman's rho	PHI08	Correlation Coefficient	1.000	.000
		Sig. (2-tailed)	.	1.000
		N	7	7
	VN08	Correlation Coefficient	.000	1.000
		Sig. (2-tailed)	1.000	.
		N	7	7

Correlations				
			PHI09	VN09
Spearman's rho	PHI09	Correlation Coefficient	1.000	-.126
		Sig. (2-tailed)	.	.788
		N	7	7
	VN09	Correlation Coefficient	-.126	1.000
		Sig. (2-tailed)	.788	.
		N	7	7

Correlations				
			PHI10	VN10
Spearman's rho	PHI10	Correlation Coefficient	1.000	-.714
		Sig. (2-tailed)	.	.071
		N	7	7
	VN10	Correlation Coefficient	-.714	1.000
		Sig. (2-tailed)	.071	.
		N	7	7

Correlations				
			PHI11	VN11
Spearman's rho	PHI11	Correlation Coefficient	1.000	.631
		Sig. (2-tailed)	.	.129
		N	7	7
	VN11	Correlation Coefficient	.631	1.000
		Sig. (2-tailed)	.129	.
		N	7	7

Correlations				
			PHI12	VN12
Spearman's rho	PHI12	Correlation Coefficient	1.000	.198
		Sig. (2-tailed)	.	.670
		N	7	7
	VN12	Correlation Coefficient	.198	1.000
		Sig. (2-tailed)	.670	.
		N	7	7

Correlations				
			PHI13	VN13
Spearman's rho	PHI13	Correlation Coefficient	1.000	.661
		Sig. (2-tailed)	.	.106
		N	7	7
	VN13	Correlation Coefficient	.661	1.000
		Sig. (2-tailed)	.106	.
		N	7	7

Correlations				
			PHI14	VN14
Spearman's rho	PHI14	Correlation Coefficient	1.000	.218
		Sig. (2-tailed)	.	.638
		N	7	7
	VN14	Correlation Coefficient	.218	1.000
		Sig. (2-tailed)	.638	.
		N	7	7

Correlations				
			PHI15	VN15
Spearman's rho	PHI15	Correlation Coefficient	1.000	-.775*
		Sig. (2-tailed)	.	.041
		N	7	7
	VN15	Correlation Coefficient	-.775*	1.000
		Sig. (2-tailed)	.041	.
		N	7	7

Correlations				
			PHI16	VN16
Spearman's rho	PHI16	Correlation Coefficient	1.000	-.528
		Sig. (2-tailed)	.	.223
		N	7	7
	VN16	Correlation Coefficient	-.528	1.000
		Sig. (2-tailed)	.223	.
		N	7	7

*. Correlation is significant at the .05 level (2-tailed).

Correlations				
			PHI17	VN17
Spearman's rho	PHI17	Correlation Coefficient	1.000	-.252
		Sig. (2-tailed)	.	.585
		N	7	7
	VN17	Correlation Coefficient	-.252	1.000
		Sig. (2-tailed)	.585	.
		N	7	7

Correlations				
			PHI18	VN18
Spearman's rho	PHI18	Correlation Coefficient	1.000	-.667
		Sig. (2-tailed)	.	.102
		N	7	7
	VN18	Correlation Coefficient	-.667	1.000
		Sig. (2-tailed)	.102	.
		N	7	7

Correlations				
			PHI19	VN19
Spearman's rho	PHI19	Correlation Coefficient	1.000	-.179
		Sig. (2-tailed)	.	.702
		N	7	7
	VN19	Correlation Coefficient	-.179	1.000
		Sig. (2-tailed)	.702	.
		N	7	7

Correlations				
			PHI20	VN20
Spearman's rho	PHI20	Correlation Coefficient	1.000	-.357
		Sig. (2-tailed)	.	.432
		N	7	7
	VN20	Correlation Coefficient	-.357	1.000
		Sig. (2-tailed)	.432	.
		N	7	7

Correlations				
			PHI21	VN21
Spearman's rho	PHI21	Correlation Coefficient	1.000	.213
		Sig. (2-tailed)	.	.647
		N	7	7
	VN21	Correlation Coefficient	.213	1.000
		Sig. (2-tailed)	.647	.
		N	7	7

Correlations				
			PHI22	VN22
Spearman's rho	PHI22	Correlation Coefficient	1.000	.649
		Sig. (2-tailed)	.	.115
		N	7	7
	VN22	Correlation Coefficient	.649	1.000
		Sig. (2-tailed)	.115	.
		N	7	7

Correlations				
			PHI22	VN22
Spearman's rho	PHI22	Correlation Coefficient	1.000	.649
		Sig. (2-tailed)	.	.115
		N	7	7
	VN22	Correlation Coefficient	.649	1.000
		Sig. (2-tailed)	.115	.
		N	7	7

Correlations				
			vn01	thai01
Spearman's rho	vn01	Correlation Coefficient	1.000	.571
		Sig. (2-tailed)	.	.180
		N	7	7
	thai01	Correlation Coefficient	.571	1.000
		Sig. (2-tailed)	.180	.
		N	7	7

Correlations				
			vn02	thai02
Spearman's rho	vn02	Correlation Coefficient	1.000	.857*
		Sig. (2-tailed)	.	.014
		N	7	7
	thai02	Correlation Coefficient	.857*	1.000
		Sig. (2-tailed)	.014	.
		N	7	7

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations				
			vn03	thai03
Spearman's rho	vn03	Correlation Coefficient	1.000	.071
		Sig. (2-tailed)	.	.879
		N	7	7
	thai03	Correlation Coefficient	.071	1.000
		Sig. (2-tailed)	.879	.
		N	7	7

Correlations				
			vn04	thai04
Spearman's rho	vn04	Correlation Coefficient	1.000	.036
		Sig. (2-tailed)	.	.939
		N	7	7
	thai04	Correlation Coefficient	.036	1.000
		Sig. (2-tailed)	.939	.
		N	7	7

Correlations				
			vn05	thai05
Spearman's rho	vn05	Correlation Coefficient	1.000	-.346
		Sig. (2-tailed)	.	.448
		N	7	7
	thai05	Correlation Coefficient	-.346	1.000
		Sig. (2-tailed)	.448	.
		N	7	7

Correlations				
			vn06	thai06
Spearman's rho	vn06	Correlation Coefficient	1.000	.691
		Sig. (2-tailed)	.	.086
		N	7	7
	thai06	Correlation Coefficient	.691	1.000
		Sig. (2-tailed)	.086	.
		N	7	7

Correlations				
			vn07	thai07
Spearman's rho	vn07	Correlation Coefficient	1.000	.809*
		Sig. (2-tailed)	.	.028
		N	7	7
	thai07	Correlation Coefficient	.809*	1.000
		Sig. (2-tailed)	.028	.
		N	7	7

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations				
			vn08	thai08
Spearman's rho	vn08	Correlation Coefficient	1.000	.633
		Sig. (2-tailed)	.	.127
		N	7	7
	thai08	Correlation Coefficient	.633	1.000
		Sig. (2-tailed)	.127	.
		N	7	7

Correlations				
			vn09	thai09
Spearman's rho	vn09	Correlation Coefficient	1.000	.179
		Sig. (2-tailed)	.	.702
		N	7	7
	thai09	Correlation Coefficient	.179	1.000
		Sig. (2-tailed)	.702	.
		N	7	7

Correlations				
			vn10	thai10
Spearman's rho	vn10	Correlation Coefficient	1.000	.393
		Sig. (2-tailed)	.	.383
		N	7	7
	thai10	Correlation Coefficient	.393	1.000
		Sig. (2-tailed)	.383	.
		N	7	7

Correlations				
			vn11	thai11
Spearman's rho	vn11	Correlation Coefficient	1.000	.847*
		Sig. (2-tailed)	.	.016
		N	7	7
	thai11	Correlation Coefficient	.847*	1.000
		Sig. (2-tailed)	.016	.
		N	7	7

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations				
			vn12	thai12
Spearman's rho	vn12	Correlation Coefficient	1.000	-.455
		Sig. (2-tailed)	.	.306
		N	7	7
	thai12	Correlation Coefficient	-.455	1.000
		Sig. (2-tailed)	.306	.
		N	7	7

Correlations				
			vn13	thai13
Spearman's rho	vn13	Correlation Coefficient	1.000	.945**
		Sig. (2-tailed)	.	.001
		N	7	7
	thai13	Correlation Coefficient	.945**	1.000
		Sig. (2-tailed)	.001	.
		N	7	7

** Correlation is significant at the 0.01 level (2-tailed).

Correlations				
			vn14	thai14
Spearman's rho	vn14	Correlation Coefficient	1.000	.109
		Sig. (2-tailed)	.	.816
		N	7	7
	thai14	Correlation Coefficient	.109	1.000
		Sig. (2-tailed)	.816	.
		N	7	7

Correlations				
			vn15	thai15
Spearman's rho	vn15	Correlation Coefficient	1.000	-.464
		Sig. (2-tailed)	.	.294
		N	7	7
	thai15	Correlation Coefficient	-.464	1.000
		Sig. (2-tailed)	.294	.
		N	7	7

Correlations				
			vn16	thai16
Spearman's rho	vn16	Correlation Coefficient	1.000	.119
		Sig. (2-tailed)	.	.799
		N	7	7
	thai16	Correlation Coefficient	.119	1.000
		Sig. (2-tailed)	.799	.
		N	7	7

Correlations				
			vn17	thai17
Spearman's rho	vn17	Correlation Coefficient	1.000	.286
		Sig. (2-tailed)	.	.535
		N	7	7
	thai17	Correlation Coefficient	.286	1.000
		Sig. (2-tailed)	.535	.
		N	7	7

Correlations				
			vn18	thai18
Spearman's rho	vn18	Correlation Coefficient	1.000	-.450
		Sig. (2-tailed)	.	.310
		N	7	7
	thai18	Correlation Coefficient	-.450	1.000
		Sig. (2-tailed)	.310	.
		N	7	7

Correlations				
			vn19	thai19
Spearman's rho	vn19	Correlation Coefficient	1.000	-.306
		Sig. (2-tailed)	.	.504
		N	7	7
	thai19	Correlation Coefficient	-.306	1.000
		Sig. (2-tailed)	.504	.
		N	7	7

Correlations				
			vn20	thai20
Spearman's rho	vn20	Correlation Coefficient	1.000	-.500
		Sig. (2-tailed)	.	.253
		N	7	7
	thai20	Correlation Coefficient	-.500	1.000
		Sig. (2-tailed)	.253	.
		N	7	7

Correlations				
			vn21	thai21
Spearman's rho	vn21	Correlation Coefficient	1.000	-.046
		Sig. (2-tailed)	.	.921
		N	7	7
	thai21	Correlation Coefficient	-.046	1.000
		Sig. (2-tailed)	.921	.
		N	7	7

Correlations				
			vn22	thai22
Spearman's rho	vn22	Correlation Coefficient	1.000	.357
		Sig. (2-tailed)	.	.432
		N	7	7
	thai22	Correlation Coefficient	.357	1.000
		Sig. (2-tailed)	.432	.
		N	7	7

Correlations				
			vn23	thai23
Spearman's rho	vn23	Correlation Coefficient	1.000	-.119
		Sig. (2-tailed)	.	.799
		N	7	7
	thai23	Correlation Coefficient	-.119	1.000
		Sig. (2-tailed)	.799	.
		N	7	7

Table A6.2: Spearman Rank Correlation Coefficients Between Vietnam 2004's RCA for the Manufacturing Sector and those of South Korea and the ASEAN-4 for Selected Years (SPSS Output)

Correlations					Correlations				
Spearman's rho	VN2004	Correlation Coefficient	VN2004	INDO80	Spearman's rho	VN2004	Correlation Coefficient	VN2004	MALA80
		Sig. (2-tailed)					Sig. (2-tailed)		
		N					N		
	INDO80	Correlation Coefficient				MALA80	Correlation Coefficient		
		Sig. (2-tailed)					Sig. (2-tailed)		
		N					N		
			1.000	.172				1.000	.358
			.	.592				.	.253
			12	12				12	12
			.172	1.000				.358	1.000
			.592	.				.253	.
			12	12				12	12

Correlations					Correlations				
Spearman's rho	VN2004	Correlation Coefficient	VN2004	PHI04	Spearman's rho	VN2004	Correlation Coefficient	VN2004	THAI80
		Sig. (2-tailed)					Sig. (2-tailed)		
		N					N		
	PHI04	Correlation Coefficient				THAI80	Correlation Coefficient		
		Sig. (2-tailed)					Sig. (2-tailed)		
		N					N		
			1.000	.510				1.000	.487
			.	.090				.	.108
			12	12				12	12
			.510	1.000				.487	1.000
			.090	.				.108	.
			12	12				12	12

Correlations					Correlations				
Spearman's rho	VN2004	Correlation Coefficient	VN2004	INDO85	Spearman's rho	VN2004	Correlation Coefficient	VN2004	MALA85
		Sig. (2-tailed)					Sig. (2-tailed)		
		N					N		
	INDO85	Correlation Coefficient				MALA85	Correlation Coefficient		
		Sig. (2-tailed)					Sig. (2-tailed)		
		N					N		
			1.000	.379				1.000	.301
			.	.224				.	.342
			12	12				12	12
			.379	1.000				.301	1.000
			.224	.				.342	.
			12	12				12	.12

Correlations					Correlations				
Spearman's rho	VN2004	Correlation Coefficient	VN2004	PHI85	Spearman's rho	VN2004	Correlation Coefficient	VN2004	THAI85
		Sig. (2-tailed)					Sig. (2-tailed)		
		N					N		
	PHI85	Correlation Coefficient				THAI85	Correlation Coefficient		
		Sig. (2-tailed)					Sig. (2-tailed)		
		N					N		
			1.000	.364				1.000	.729**
			.	.245				.	.007
			12	12				12	12
			.364	1.000				.729**	1.000
			.245	.				.007	.
			12	12				12	12

** . Correlation is significant at the .01 level (2-tailed).

Correlations					Correlations				
Spearman's rho	VN2004	Correlation Coefficient	VN2004	INDO90	Spearman's rho	VN2004	Correlation Coefficient	VN2004	MALA90
		Sig. (2-tailed)					Sig. (2-tailed)		
		N					N		
	INDO90	Correlation Coefficient				MALA90	Correlation Coefficient		
		Sig. (2-tailed)					Sig. (2-tailed)		
		N					N		
			1.000	.466				1.000	.441
			.	.127				.	.152
			12	12				12	12
			.466	1.000				.441	1.000
			.127	.				.152	.
			12	12				12	12

Correlations					Correlations				
Spearman's rho	VN2004	Correlation Coefficient	VN2004	PHI90	Spearman's rho	VN2004	Correlation Coefficient	VN2004	THAI90
		Sig. (2-tailed)					Sig. (2-tailed)		
		N					N		
	PHI90	Correlation Coefficient				THAI90	Correlation Coefficient		
		Sig. (2-tailed)					Sig. (2-tailed)		
		N					N		
			1.000	.538				1.000	.657*
			.	.071				.	.020
			12	12				12	12
			.538	1.000				.657*	1.000
			.071	.				.020	.
			12	12				12	12

*. Correlation is significant at the .05 level (2-tailed).

Correlations					Correlations				
Spearman's rho	VN2004	Correlation Coefficient	VN2004	INDO94	Spearman's rho	VN2004	Correlation Coefficient	VN2004	MALA94
		Sig. (2-tailed)					Sig. (2-tailed)		
		N					N		
	INDO94	Correlation Coefficient				MALA94	Correlation Coefficient		
		Sig. (2-tailed)					Sig. (2-tailed)		
		N					N		
			1.000	.769**				1.000	.378
			.	.003				.	.226
			12	12				12	12
			.769**	1.000				.378	1.000
			.003	.				.226	.
			12	12				12	12

** . Correlation is significant at the .01 level (2-tailed).

Correlations

			VN2004	PHI94
Spearman's rho	VN2004	Correlation Coefficient	1.000	.606*
		Sig. (2-tailed)	.	.037
		N	12	12
	PHI94	Correlation Coefficient	.606*	1.000
		Sig. (2-tailed)	.037	.
		N	12	12

*. Correlation is significant at the .05 level (2-tailed).

Correlations

			VN2004	THAI94
Spearman's rho	VN2004	Correlation Coefficient	1.000	.726**
		Sig. (2-tailed)	.	.007
		N	12	12
	THAI94	Correlation Coefficient	.726**	1.000
		Sig. (2-tailed)	.007	.
		N	12	12

**. Correlation is significant at the .01 level (2-tailed).

Correlations

			VN2004	INDO97
Spearman's rho	VN2004	Correlation Coefficient	1.000	.811**
		Sig. (2-tailed)	.	.001
		N	12	12
	INDO97	Correlation Coefficient	.811**	1.000
		Sig. (2-tailed)	.001	.
		N	12	12

**. Correlation is significant at the .01 level (2-tailed).

Correlations

			VN2004	MALA97
Spearman's rho	VN2004	Correlation Coefficient	1.000	.378
		Sig. (2-tailed)	.	.226
		N	12	12
	MALA97	Correlation Coefficient	.378	1.000
		Sig. (2-tailed)	.226	.
		N	12	12

Correlations

			VN2004	PHI97
Spearman's rho	VN2004	Correlation Coefficient	1.000	.452
		Sig. (2-tailed)	.	.140
		N	12	12
	PHI97	Correlation Coefficient	.452	1.000
		Sig. (2-tailed)	.140	.
		N	12	12

Correlations

			VN2004	THAI97
Spearman's rho	VN2004	Correlation Coefficient	1.000	.699*
		Sig. (2-tailed)	.	.011
		N	12	12
	THAI97	Correlation Coefficient	.699*	1.000
		Sig. (2-tailed)	.011	.
		N	12	12

*. Correlation is significant at the .05 level (2-tailed).

Correlations

			VN2004	INDO99
Spearman's rho	VN2004	Correlation Coefficient	1.000	.743**
		Sig. (2-tailed)	.	.006
		N	12	12
	INDO99	Correlation Coefficient	.743**	1.000
		Sig. (2-tailed)	.006	.
		N	12	12

**. Correlation is significant at the .01 level (2-tailed).

Correlations

			VN2004	MALA99
Spearman's rho	VN2004	Correlation Coefficient	1.000	.399
		Sig. (2-tailed)	.	.199
		N	12	12
	MALA99	Correlation Coefficient	.399	1.000
		Sig. (2-tailed)	.199	.
		N	12	12

Correlations

			VN2004	THAI99
Spearman's rho	VN2004	Correlation Coefficient	1.000	.657*
		Sig. (2-tailed)	.	.020
		N	12	12
	THAI99	Correlation Coefficient	.657*	1.000
		Sig. (2-tailed)	.020	.
		N	12	12

*. Correlation is significant at the .05 level (2-tailed).

Correlations

			VN2004	INDO01
Spearman's rho	VN2004	Correlation Coefficient	1.000	.858**
		Sig. (2-tailed)	.	.000
		N	12	12
	INDO01	Correlation Coefficient	.858**	1.000
		Sig. (2-tailed)	.000	.
		N	12	12

**. Correlation is significant at the .01 level (2-tailed).

Correlations

			VN2004	MALA01
Spearman's rho	VN2004	Correlation Coefficient	1.000	.399
		Sig. (2-tailed)	.	.199
		N	12	12
	MALA01	Correlation Coefficient	.399	1.000
		Sig. (2-tailed)	.199	.
		N	12	12

Correlations

			VN2004	PHI01
Spearman's rho	VN2004	Correlation Coefficient	1.000	.476
		Sig. (2-tailed)	.	.118
		N	12	12
	PHI01	Correlation Coefficient	.476	1.000
		Sig. (2-tailed)	.118	.
		N	12	12

Correlations

			VN2004	THAI01
Spearman's rho	VN2004	Correlation Coefficient	1.000	.692*
		Sig. (2-tailed)	.	.013
		N	12	12
	THAI01	Correlation Coefficient	.692*	1.000
		Sig. (2-tailed)	.013	.
		N	12	12

*. Correlation is significant at the .05 level (2-tailed).

Correlations

			VN2004	INDO03
Spearman's rho	VN2004	Correlation Coefficient	1.000	.860**
		Sig. (2-tailed)	.	.000
		N	12	12
	INDO03	Correlation Coefficient	.860**	1.000
		Sig. (2-tailed)	.000	.
		N	12	12

**. Correlation is significant at the .01 level (2-tailed).

Correlations

			VN2004	MALA03
Spearman's rho	VN2004	Correlation Coefficient	1.000	.305
		Sig. (2-tailed)	.	.336
		N	12	12
	MALA03	Correlation Coefficient	.305	1.000
		Sig. (2-tailed)	.336	.
		N	12	12

Correlations				
			VN2004	PHI03
Spearman's rho	VN2004	Correlation Coefficient	1.000	.490
		Sig. (2-tailed)	.	.106
		N	12	12
	PHI03	Correlation Coefficient	.490	1.000
		Sig. (2-tailed)	.106	.
		N	12	12

Correlations				
			VN2004	THAI03
Spearman's rho	VN2004	Correlation Coefficient	1.000	.497
		Sig. (2-tailed)	.	.101
		N	12	12
	THAI03	Correlation Coefficient	.497	1.000
		Sig. (2-tailed)	.101	.
		N	12	12

Correlations				
			VN2004	KOREA80
Spearman's rho	VN2004	Correlation Coefficient	1.000	.671*
		Sig. (2-tailed)	.	.017
		N	12	12
	KOREA80	Correlation Coefficient	.671*	1.000
		Sig. (2-tailed)	.017	.
		N	12	12

Correlations				
			VN2004	KOREA85
Spearman's rho	VN2004	Correlation Coefficient	1.000	.601*
		Sig. (2-tailed)	.	.039
		N	12	12
	KOREA85	Correlation Coefficient	.601*	1.000
		Sig. (2-tailed)	.039	.
		N	12	12

*. Correlation is significant at the .05 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

Correlations				
			VN2004	KOREA90
Spearman's rho	VN2004	Correlation Coefficient	1.000	.545
		Sig. (2-tailed)	.	.067
		N	12	12
	KOREA90	Correlation Coefficient	.545	1.000
		Sig. (2-tailed)	.067	.
		N	12	12

Correlations				
			VN2004	KOREA94
Spearman's rho	VN2004	Correlation Coefficient	1.000	.469
		Sig. (2-tailed)	.	.124
		N	12	12
	KOREA94	Correlation Coefficient	.469	1.000
		Sig. (2-tailed)	.124	.
		N	12	12

Correlations				
			VN2004	KOREA97
Spearman's rho	VN2004	Correlation Coefficient	1.000	.252
		Sig. (2-tailed)	.	.430
		N	12	12
	KOREA97	Correlation Coefficient	.252	1.000
		Sig. (2-tailed)	.430	.
		N	12	12

Correlations				
			VN2004	KOREA99
Spearman's rho	VN2004	Correlation Coefficient	1.000	.343
		Sig. (2-tailed)	.	.276
		N	12	12
	KOREA99	Correlation Coefficient	.343	1.000
		Sig. (2-tailed)	.276	.
		N	12	12

Correlations				
			VN2004	KOREA01
Spearman's rho	VN2004	Correlation Coefficient	1.000	.329
		Sig. (2-tailed)	.	.297
		N	12	12
	KOREA01	Correlation Coefficient	.329	1.000
		Sig. (2-tailed)	.297	.
		N	12	12

Correlations				
			VN2004	KOREA03
Spearman's rho	VN2004	Correlation Coefficient	1.000	.203
		Sig. (2-tailed)	.	.527
		N	12	12
	KOREA03	Correlation Coefficient	.203	1.000
		Sig. (2-tailed)	.527	.
		N	12	12

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