EDUCATIONAL REFORMS AND CHALLENGES IN SOUTHEAST ASIA

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Abstract

Southeast Asia's traditional export of relatively low-skilled products is facing increased competition. There is therefore a general need to upgrade production in the region, which requires a more skilled and educated labour force. Historically, education has not been emphasized in Southeast Asia but there are indications that this is about to change. This paper starts with a general discussion on the educational situation and changes in the region. It continues with a close look at three ASEAN countries – Indonesia, Malaysia, and Singapore – with special focus on some of the obstacles for reforms, such as financial and political constraints, that are present in these countries.

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I. Introduction

Education is likely to play an increasingly important role in Southeast Asia over the next decades. The reason is that past development strategies have primarily relied on exports of labour-intensive and low-skilled products, but there now seems to be a need to upgrade production and exports. Even in more high-skilled industries, such as Electronics, the part of the production process located in Southeast Asia is often simple assembling. One illustrative example is found in the hard disk drive industry (HDD). All major foreign firms in the industry had assembly plants in Southeast Asia and the region accounted for as much as 64 percent of final global assembly and 44 percent of total global employment (Amsden *et al.* 2001:3). Still, the region only received 13 percent of the industry's wages because high-skilled activities are

maintained in Europe, Japan and the US, and low-skilled activities are located in Southeast Asia.

Whereas the past development strategy of labour intensive exports has been successful, there are reason to believe that it may fail to provide future growth. One reason is that the past success has led a number of countries to follow the example set by Southeast Asia. Most importantly, the reliance on low-skilled production has become more problematic for Southeast Asia over the last decade when both China and India have liberalized their economies. China has even become the largest exporter of manufactures in the developing world, which intensifies the competition for ASEAN exporters. It should be emphasized that the effect from the Chinese and Indian liberalizations is not symmetric across the ASEAN countries and that it also offers positive export possibilities to these growing markets. For this opportunity to be realized, it seems important that the ASEAN countries manage to upgrade their production and thereby avoid competing in goods where the emerging giants can be expected to be especially competitive.[1]

Increased competition of traditional exports from Sotheast Asia was one, of many, determinants to the crisis starting in 1997. As seen in Table 1, all countries in ASEAN-5 had average annual growth rates of exports between 13 (Indonesia) to 20 (Malaysia) percent between 1990 and 1995. The growth rate in exports declined in 1996 in all countries except the Philippines, and the decline was particularly large in Thailand, Malaysia, and Singapore. The slowdown had a negative impact on economic growth in the region and did also cause problems with growing current

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[1] One interesting characteristics of China's entry into the world economy is that the country has turned out to be a competitive producer and exporter of not only labour-intensive goods but also of more skilled-intensive ones. Still, it seems likely that the main competitive edge of China will continue to be labour-intensive and relatively low-skilled products, at least in the nearer future.

account deficits. With the exception of Singapore, all other countries had alarmingly large deficits that increased further in 1996. The deficits were one determinant to the reluctance of foreign creditors to roll over loans to the ASEAN countries, and thereby contributed to the onset of the crisis (Iriana and Sjöholm, 2002).

Part of the slowdown in exports was caused by an appreciation of regional currencies, which were tied to the US dollar. However, the appreciations were relatively modest, ranging between 5 percent in Indonesia and 18 percent in Singapore between 1990 and 1996, and other factors must have contributed to the slowdown in exports. Again, one such factor is the increased competition in relative low-skilled industries, which brings us back to the need of an industrial upgrading. Such upgrading depends crucially on the ability to absorb and master new technologies and on the skill of the labor force. Both of these factors are partly dependent on education. This paper will therefore focus on the state of education in Southeast Asia and on present reforms within this area. The paper starts with a general overview of the educational situation and is followed by a more in-depth analyses of changes and obstacles to reforms in Indonesia, Malaysia and Singapore.

Table 1. Exports, current account balances and exchange rates in some Southeast Asian countries.

Country	Export growth	Current account deficits as a share of GDP	Real effective exchange rates (1990=100)

	Average 1990-1995	1996	1997	Average 1990-1995	1996	1997	1995	1996	1997
Indonesia	13	10	7	-2	-3	-2	100	105	62
Thailand	19	-1	3	-7	-8	-2	107	112	76
Malaysia	20	6	1	-6	-5	-5	102	108	85
Singapore	18	6	0	12	15	18	113	118	114
Philippines	15	17	23	-4	-5	-5	110	117	90

Source: International Financial Statistic CD-ROM, IMF, 2000; Direction of Trade Statistics Yearbook, IMF, various issues. Notes: An increase means an appreciation of the real effective exchange rate.

II. Educational performance in Southeast Asia

Some educational indicators

The state of a country's education can be evaluated from inputs into education, such as public expenditures on education and the number of teachers, and from outputs of educational efforts, such as enrolment- and literacy rates. Starting with input measures, Table 2 shows figures on public expenditures on education in Southeast Asia, and in some Northeast Asian countries for the sake of comparison. The countries differ substantially in their level of economic development; the wealthiest country in Southeast Asia, Singapore, has a GDP per capita that is 20 times higher than the poorest country, Myanmar. There is a positive relation between the level of economic development and the amount of public expenditures on education; Myanmar spends only slightly more than one percent of GNP on education whereas Singapore, Malaysia, Thailand and the Philippines spend between 3-5 percent, which compares well with the Northeast Asian countries. Especially Malaysia and Thailand

have a high level of spending in comparison with their level of income. The former country has been spending substantial amounts of GNP on education since, at least, the 1980s, whereas Thailand has increased expenditures primarily in the 1990s. Furthermore, Indonesia spends only slightly more than Myanmar on education, which is substantially less than many poorer countries in the region.

Table 2. Educational expenditures in Southeast Asia.

Country	GDP/capita (PPP US$)	Public expenditures on education as a percent of GNP			Public expenditures on education as a share of total government expenditures		
	1999	1986	1990	1996	1986	1990	1996
Singapore	20,767	3.9	3.0	3.0	11.5	18.2	23.4
Malaysia	8,209	6.9	5.5	5.2	18.8	18.3	15.4
Thailand	6,132	3.4	3.6	4.8	17.9	20.0	na
Philippines	3,805	2.1	2.9	3.2	11.2	10.1	17.6
Indonesia	2,857	0.9	1	1.4	4.3	na	7.9
Vietnam	1,860	na	2.1	2.9	na	7.5	na
Laos	1,471	0.5	2.5	2.5	6.6	na	10.3
Cambodia	1,361	na	na	2.9	na	na	na
Myanmar	1,027	1.9	na	1.2	na	na	14.4
Japan	24,898	na	3.6	3.6	na	10.4	9.9
Hong Kong	22,090	2.5	2.8	2.9	19.8	17.4	17.0
South Korea	15,712	3.8	3.5	3.7	na	na	17.5
China	3,617	2.3	2.3	2.3	11.1	12.8	12.2

Source: UNESCO; www.unesco.org

The figures on the share of total public expenditures allocated to education are incomplete but suggest that countries that spend a high proportion of GNP on education also spend a high proportion of public expenditures on education. Almost one forth of public expenditures in Singapore goes to education but only about eight percent in Indonesia.

Differences in the demographic situations in the countries might affect how much resources that is actually allocated per student. Table 3 shows figures on public expenditures per pupil and as a percentage of GNP per capita. In addition, the figures

are divided into primary, secondary, and tertiary schooling to show which level of schooling that is emphasized in the different countries. Again, the figures suggest that Malaysia and Thailand have high expenditures on education in relation to their income levels. Malaysia has especially high expenditures on tertiary schooling, which is also the case in Vietnam. Among the poorer countries, Myanmar has low expenditures per pupil but Laos and Vietnam quite large.

Table 3. Educational expenditures per pupil (1996).

	Current expenditures per pupil as a percentage of GNP per capita		
Country	primary	secondary	tertiary
Singapore	7	12	31
Malaysia	10	17	85
Thailand	14	11	26
Philippines	9	9	14
Indonesia	na	na	na
Vietnam	7	9	89
Laos	7	14	63
Cambodia	na	na	na
Myanmar	3	9	19
Japan	17	19	14
Hong Kong	6	13	54
South Korea	17	13	6
China	6	12	67

Source: UNESCO; www.unesco.org

Another input measure of obvious importance for the quality of education, is the availability of teachers. Table 4 shows the number of teachers and the pupil-teacher ratio in primary and secondary school. The number of teachers per 1000 non-agriculture labor force is highest in some of the poorer countries such as Laos, Indonesia and Vietnam. However, the figures are likely to be biased as a general measure on the stock of teachers since these countries do also have a relative large share of the population employed in agriculture. Moreover, there might be differences between countries' shares of the population in the school ages. An alternative measure is the pupil-teacher ratio which is shown for primary and secondary education. The

ratio is very high in primary school in the poorer countries, especially in Myanmar and Cambodia were there are close to 50 school children per teacher. Indonesia, Vietnam, and Laos have lower ratios, most likely because of their relative high shares of teachers in the labor force. Three of the countries that spend most on education, Singapore, Malaysia, and Thailand, have the fewest students per teacher in primary school. The figures for secondary school are quite different with very low ratios in, for instance, Indonesia, Myanmar, and Laos, and with the highest ratio in the Philippines.

Table 4. The availability of teachers in Southeast Asia.

	Teachers per 1000 non-agricultural labor force		Primary School Pupil-teacher ratio		Secondary School Pupil-teacher ratio	
	1990	1996	1990	1996	1990	1996
Singapore	18	18	26	21	21	20
Malaysia	41	41	20	19	19	19
Thailand	50	na	22	na	18	na
Philippines	38	35	33	35	33	32
Vietnam	55	53	35	32	18	29
Indonesia	65	56	23	22	13	14
Laos	78	75	27	30	12	17
Cambodia	53	42	33	46	15	18
Myanmar	38	36	48	46	13	16
Japan	25	26	21	19	na	14
Hong Kong	20	18	27	24	21	20
South Korea	25	23	36	31	26	25
China	55	50	22	24	15	17

Source: UNESCO; www.unesco.org

The previous tables showed various inputs to education. These inputs will produce an output that is also affected by the qualifications of teachers, the curriculum, the availability and number of schools, and other such factors. Whereas the quality of education is difficult to measure, we can observe basic indicators such as school enrolment rates, mean years of schooling and literacy rates. Table 5 shows the adult literacy rates in 1999 and the mean years of schooling between 1970 and 2000. Most Southeast Asian countries have literacy rates above the 73 percent average in developing countries. The exceptions are Laos and Cambodia. The situation in Laos is particularly bad with a literacy rate of only 47 percent, which is very low also in an international comparison. The literacy rate is above 90 percent in Singapore, Thailand, Philippines, and Vietnam. This is a rather strong achievement in the latter two relatively poor countries. On the other hand, the literacy rate in Singapore is less than in other countries on a similar income level. For instance, OECD has a 100 percent literacy rate despite an average income that is lower than the one in Singapore.

Table 5. Literacy rates and mean years of schooling in Southeast Asia.

	Adult literacy rate	Mean years of schooling			
Country	1999	1970	1980	1990	2000
Singapore	92.1	7.5	8.5	9	9.5
Malaysia	87.0	6.3	8	9.2	9.4
Thailand	95.3	4.1	4.4	5.6	6.5
Philippines	95.1	4.8	6.5	7.3	8.2
Indonesia	86.3	2.9	3.7	4.0	5.0
Vietnam	93.1	na	na	3.8	na
Laos	47.3	na	na	na	na
Cambodia	68.2	na	na	na	na
Myanmar	84.4	1.4	1.6	2.5	2.8
Japan	100.0	7.5	8.5	9.0	9.5
Hong Kong	93.3	6.3	8.0	9.2	9.4
South Korea	97.6	4.9	7.9	9.9	10.8
China	83.5	na	4.8	5.9	6.4
Developing	72.9	na	3.9	4.9	na

countries (average)					
OECD (average)	100.0	7.3	8.6	9.1	9.6

Source: UNDP (2001).

All countries have seen a relative large increase in the mean years of schooling between 1970 and 2000, but there are big differences among the countries. For instance, Vietnam, Indonesia, and Myanmar all had less years of schooling than the average among developing countries, which is probably true also for Laos and Cambodia for which figures are not available. The population in Myanmar have particularly few years of schooling; the median figure is less than three years in 2000. On the other hand, Malaysians seem to spend many years in school, about the same number as their wealthier neighbors in Singapore and at an average OECD level.

The mean years of schooling is related to the school enrolment ratios, which are shown in Table 6. Almost 100 percent enrolment in primary school was achieved already in 1990 in all of the included countries. The figures for Malaysia and Singapore are affected by the possibility to teach the children at home, in other words, whereas primary education is compulsory in these countries, the attendance in a school is not. The figures for secondary and tertiary education show much larger differences. For instance, Malaysia, Singapore and the Philippines have secondary enrolment rates above 60 percent whereas the rates in Laos, Cambodia and Myanmar are only 30 percent or less. Interestingly, the enrolment rate in Cambodia has actually declined for both primary and secondary education between 1990 and 1996. Tertiary education shows low enrolment rates in the poorer countries but also surprisingly low in Malaysia. Singapore, Philippines and Thailand have rather high tertiary enrolment rates although lower than in Japan and South Korea.

Table 6. School enrolment ratios in Southeast Asia.

	Primary School		Secondary School		Tertiary School	
	Gross enrolment rate (%)		Gross enrolment rate (%)		Gross enrolment rate (%)	
	1990	1996	1990	1996	1990	1996

Singapore	104	94	68	74	19	38
Malaysia	94	101	56	64	7	12
Thailand	99	87	30	56	na	22
Philippines	111	114	73	77	28	29
Indonesia	115	113	44	51	9	11
Vietnam	103	113	32	47	2	7
Laos	105	112	25	28	na	3
Cambodia	121	110	32	24	1	1
Myanmar	106	121	23	30	4	5
Japan	100	101	97	103	30	40
Hong Kong	102	94	80	73	19	na
South Korea	105	94	90	102	39	68
China	125	123	49	70	3	6

Source: UNESCO; www.unesco.org

Not only tertiary enrolment rates differ between the Southeast Asian countries but also the structure of higher education. Table 7 shows the percentage of students in four different fields of higher education. The main difference is between a country such as Singapore who has a large proportion of the students in the sciences and engineering faculties and Thailand where most tertiary student can be found within law and social sciences. The large share of Singaporean students in engineering is a deliberate policy that goes back to the early years of independence. The government was then worried about widespread unemployment of white-collar workers if higher education was generally expanded rather than closely directed to the skills demanded by the foreign multinational companies. The focus became, and has remained, to supply skilled technicians and engineers whereas higher education in arts and social sciences has been deliberately restricted.

Table 7. Distribution of tertiary students over field of study (1996).

	Percentage of students by field of study				
	Education	Humanities	Law and social science	Natural science, enginering and agricultural	Medical sciences
Singapore	7	33	incl. in Hum.	58	3
Malaysia	na	na	Na	na	na
Thailand	9	4	60	21	6
Philippines	15	6	31	28	19
Indonesia	17	6	46	28	2
Vietnam	na	na	Na	na	na

Laos	28	7	13	38	11
Myanmar	0	42	22	37	na
Cambodia	26	2	29	23	20
Japan	8	56	incl. in Hum.	23	8
Hong Kong	9	9	34	42	4
South Korea	6	17	25	34	5
China	16	6	9	53	9

Source: UNESCO (www.unesco.org). Note: Law and Social Sciences is included in the Humanities in Singapore and Japan.

We have seen a number of educational indicators and the overall picture suggests that the differences are large within the region and that rich countries put more emphasis on education than poor countries do. Still, there are variations also between countries on a similar income level. One way to summarize the educational standard in the countries is to use an index by the UNDP (2001, p. 240). The index is based on school enrolment rates and literacy rates and should because of its limited number of criteria be interpreted with caution. The higher the value on the index, which is seen in table 8, the better are the country performing in the area of education. The index shows that Philippines is actually the best performer followed by Singapore, Thailand and Vietnam. Laos and Cambodia have a lower value on the index than the average among developing countries.

Table 8. Income per capita and UNDP's education index.

	GDP per capita (PPP US$)	UNDP's Education index
Singapore	20,767	0.87
Malaysia	8,209	0.80
Thailand	6,132	0.84
Philippines	3,805	0.91
Indonesia	2,857	0.79
Vietnam	1,860	0.84
Laos	1,471	0.51
Cambodia	1,361	0.66
Myanmar	1,027	0.75
Japan	24,898	0.93

Hong Kong	22,090	0.83
South Korea	15,712	0.95
China	3,617	0.80
Developing countries	3,530	0.69
OECD	22,020	0.94

Source: UNDP (2001).

A more detailed discussion

It has been widely argued that all the high performing Asian economies shared a strong emphasize on education and skill upgrading (World Bank (1993), Campos and Root (1996)). As seen from the discussion above this is in fact not typically the case for Southeast Asia. On the contrary, Ann Booth has convincingly showed that Southeast Asia has traditionally been neglecting education rather than promoting it (Booth (1999a, 1999b). Taking all of the different measures on education into account, it seems clear that there is one group of countries, which performs reasonably well in promoting education. This group includes Singapore, Malaysia, Thailand, the Philippines and perhaps also Vietnam. There is also a group of Southeast Asian countries where educational standards seems weak. This group includes Laos, Cambodia, Myanmar and perhaps Indonesia. Moreover, even among the countries that do relatively well according to the discussed figures, a more detailed look reveals various problems and shortcomings.

For instance, Singapore might be the best educational achiever in Southeast Asia, but is still lagging behind Northeast Asia and the OECD despite having a similar or even higher income level. The reason is that the official emphasize of human resource development has only in recent years been matched by actual improvements in education. As late as in 1997, almost 25 percent of the labour force had, at most, only a primary education (Booth, p. 296). The lack of appropriate skills in the local

labour force, has forced Singapore to rely on a large number of foreigners to achieve the necessary upgrading of production.

Thailand and Malaysia are two other countries that seem to perform reasonably well in supporting education, but also these countries suffer from various problems. The standard of education in Thailand was for a long time the worst in the region. Access to higher education was limited and even provision of basic education was arbitrary in the rural areas. The neglect of education created bottlenecks that in the late 1980s seemed to threaten the continued economic development. As a result, the government introduced a compulsory nine-year school and increased expenditures on education. The expansion of secondary education, in particular, was rapid with the enrolment rate in lower secondary education increasing from about 32 percent in 1987 to 66 percent in 1996 and in upper secondary education from about 24 percent to about 40 percent (Booth, 1999a). Still, there are large remaining problems, such as the low number and poor quality of science and technology students (Brimble, 2001). As seen in Table 7, there are few students studying natural sciences or engineering. As a results, Thailand had only 119 engineers and scientist per million population before the crisis, compared to, for instance, 350 in China. A combination of an archaic university system, low salaries for teachers and insufficient funds from the government caused the poor quality of higher education. The low salaries, in particular, leads to low qualifications of university teachers in science and engineering, where only about 55 percent have a master degree and 27 percent a Ph.D.

Malaysia has traditionally been spending more on education than other countries in the region, at least in relation to its level of development. One reason is the effort to stimulate the ethnic Malays to attend higher education, and thereby to diminish the large income differences between different ethnic groups. One can not

escape the impression that Malaysia has not received sufficient economic returns on the large investment in education. One reason is that some of Thailand's problems seem to be present also in Malaysia. Most importantly, there is a lack of people with sufficient tertiary and technical schooling. Employers are frequently complaining about the difficulties in finding skilled workers (Rajah, 2001). The reason seems to be that although education has been expanded, an insufficient share has been allocated to science and engineering. Malaysia has only about 2 percent of secondary students in technical education compared to, for instance, 19 percent in Korea and 12 percent in Indonesia. This lack of skilled employees has been one major problem for upgrading production and to the difficulties encountering "high-tech" projects such as the Multimedia Super Corridor outside of Kuala Lumpur.

The relative poor performance of Indonesia may come as a surprise since Indonesia has often been singled out as a successful example of how developing countries can achieve widespread improvements in the provision of basic education. The Indonesian reputation stems from the dramatic expansion of education that started after the large increases in oil revenues in the 1970s. More than 60,000 new schools were built; real expenditures spent on education more than doubled; primary education was made compulsory; and school fees were abolished (Duflo 2000). As a result, a near 100 percent enrolment ratio was achieved in primary education by the 1980s, and secondary school enrolment increased from 35 to 48 percent for male students and from 23 to 39 percent for female students between 1980 and 1993 (Thee 1998: 121). However, as seen from the discussion above, this initial achievement has not been matched by provision of higher education or by improvements of the quality and not only the quantity of basic education. The government's educational expenditures are lower than in almost all neighboring countries. Moreover, the quality

at all levels of education remains poor.[2] For instance, 9-10 year old Indonesian school children perform below the international average in comparative tests (World Bank 1997: 120). Moreover, most university graduates in Indonesia require months of extensive on-the-job training before they can contribute to production (Booth 1999a: 301). There are additional problems with tertiary education. For instance, the tertiary system seems to emphasize relatively cheap education rather than be guided by the economy's need for people trained in science and engineering. This has resulted not only in a weak skill base, but also in high rates of unemployment among university graduates. In addition, the 44 state universities, 24 state polytechnics, and 5 state fine arts academies have been far from successful in meeting the demand for higher education (Mukhopadhaya 2001). Instead, more than a thousand private institutes have been established to meet this demand, but the monitoring on their activities is minimal, resulting in widespread quality problems.

III. Reforms, progress and obstacles

To sum up the previous discussion, the standard of education in Southeast Asia differs between countries, but there seems to be a widespread need for reforms and improvements. Most countries in the region have recognized this need and various initiatives have been launched to improve upon the situation. We will look closer at some of these attempts, and also some of the obstacles, in three countries, Singapore, Malaysia and Indonesia.

[2] See Hill and Thee (1998), Lall (1998), Thee (1998), and Booth (1999a).

Singapore

Singapore has had an exceptionally high economic growth over the last 30 years. Large investments, rapid growth of the labor force and large inflows of foreign Multinational Companies (MNCs) contributed to the high growth. However, politicians and policy makers seems to agree that Singapore needs to upgrade its production, increase technological innovation, and enhance creativity and entrepreneurship to secure future growth. The reasons are twofold. Firstly, growth through factor accumulation will be difficult to maintain with an investment rate that is already about 50 percent of GDP and with an aging population. Instead, future growth has to rely more on technological progress.[3] Secondly, the large reliance on foreign firms might also be difficult to maintain since the competition for inward FDI has increased substantially during the last decade. One indication is that inflow of FDI to Singapore decreased from 15.2 percent of GDP in 1980 to 8.2 percent in 1999 and the decrease seems to continue (UNDP, 2001). Hence, a larger reliance on domestically owned firms are necessary. The Singaporean government addresses both concerns and both have bearings on the educational system. More specifically, the government attempts to encourage creativity, risk-taking and entrepreneurship through educational reforms.

Creativity is to be encouraged through a new curriculum that encourages critical thinking and discussions rather than memorization. All levels of education are said to face this change of focus, but the exact nature of the changes is still not clearly defined. Suggestions include a broader set of criteria for university entrance than only grades from the A-level exam. However, there are also clear signals that much of the present characteristics of Singapore's education will remain unchanged. The most

[3] See Young (1992, 1995).

important part is the early streaming process of school children into different educational programs. This takes place continuously and starts already after primary three when a small number of the highest achieving students are invited to a special program. The streaming continues after primary four when the remaining students are divided into three different groups according to their academic capability. The outcome of the streaming is important for the children since it is difficult to get back to the "fast track" or the "main stream" once you have been found suitable for the "slow track". The next streaming occurs with the public exam after primary six. The result of the public exam determines which secondary school the children can attend, which is often said to be of importance for the future career. The importance of streaming has encouraged students to study very hard. For instance, children at the age of 10-12 years spend about 3 hours a day studying after school, and 70 percent of them receive extra tuitions.[4] Moreover, parents are frequently taking several weeks or even months of their jobs in order to prepare their children for the more important exams. The positive aspects of the system are clear from international comparisons of school children's knowledge of mathematics and science where Singaporean children always are among the best performers. However, it has frequently been argued that the system might not encourage creativity since students are too focused on preparing for exams rather than to develop own interests, reflect upon the knowledge, or take part in activities outside of school. To develop a system that encourage creativity but without sacrificing the average high standard is not easy, but it might be desirable to at least postpone the streaming until a later age, which would put some pressure of the youngest children.

[4] The Straits Times February 24, 2001.

There is also much discussions about how to "educate for entrepreneurship" in Singapore. Again, there have so far been few specific policies, but initiatives include the possibility for university students to spend time in foreign high-tech centers, such as the Silicon Valley, and programs in technopreneurship. One crucial issue is if it is possible to teach students to become entrepreneurs. A core element of entrepreneurship is risk taking which is not present in the government sponsored visits to foreign centers of excellences.

Other factors than the educational system are presumably more important for developing creativity and entrepreneurship in Singapore. For instance, Singapore lags behind many other East Asian countries in the pace of political liberalization. Whereas countries such as Korea, Taiwan, the Philippines, and Indonesia have achieved or been moving towards democracy in recent years, Singapore still has limits on the freedom of media, the cultural sphere, civil society, trade unions and political activities. The result has been a society where people are said to be cautious about expressing own ideas and views and where most people opt for the safe strategy to follow officially sanctioned paths.[5] A society that oppresses alternative views is obviously not encouraging independent thinking and creativity. It is also uncertain if the government can expect people to think independently and to be creative in some areas such as in science or businesses, without allowing them to express independent views on for instance politics.

Entrepreneurship is also dependent on factors other than the educational system. For instance, the economic literature stresses the importance of incentives in the formation of a strong entrepreneurial community (Baumol, 1990, Murphy et al, 1991). People will allocate their talent where the return is the highest. Depending on

[5] See for instance Cherian (2000), and Gomez (2000).

the institutional setting, the return could be highest in entrepreneurial activities or in the government sector. The latter seems to be the case in Singapore. The Singaporean government and public bureaucracy pay high wages, among the highest in the world. In addition, the government, the public sector and the government linked companies are closely connected. People move frequently between these three institutions, which increase the return to people in the government sphere (Hamilton-Hart, 2000).

The government has explicitly stated that the reason to high government wages is to attract the most talented Singaporeans. The policy has provided a highly skilled and efficient bureaucracy which has contributed to Singapore's fast economic catching-up with the developed world. However, it is uncertain if the most talented people will continue to be best used in the government sector in a time when Singapore has to rely on domestic innovations and entrepreneurship. Increased entrepreneurship is likely to require changes in the relative reward of joining the public sector versus setting up own businesses. It is not obvious that the government will be willing to lower own relative rewards.

A final and related issue is that many of the brightest Singaporean students are financing their university studies through bonded government scholarships. These scholarships are distributed by various government ministries and require the students to serve with the ministry for a period of about five years after graduation. Again, it is doubtful that the brightest students are best used for Singapore by being employed in the government rather than the private sector. The scholarships have recently been much debated in Singapore since many scholarship holders feel deeply unhappy with the bond. However, Prime Minister Goh Chok Tong has made it clear that the government bond will remain.

Malaysia

Malaysia witnessed racial riots in 1969 when an election weakened the ethnic Malays' hold of power. As a result of the riots, the government launched an economic program to favor ethnic Malays – the *Bumiputera* policies. These policies aimed at decreased economic inequality between different ethnic groups by favoring the bumiputeras access to jobs in the civil administration, by forcing firms to form joint-ventures with bumiputeras, and by setting up special government agencies and financial institutions that served bumiputera interst. One consequence was that the traditional capitalists, the ethnic Chinese, became reluctant to make long term investments. Instead, Malaysia had to rely on increased amounts of FDI (Drable, 2000). The FDI contributed significantly to production and exports of manufactures but, as previously said, they tended to be in labour intensive and low-skilled industries and there has been little upgrading over time. As a result, Malaysia relies today on large inflows of foreign workers to maintain the labour intensive production. Moreover, competition from low cost producers such as China is increasing rapidly and there are frequent reports on how foreign electronic firms are closing down their plants in Penang and instead expand their activities in China. To upgrade production requires, among other things, improved education of the workforce, which is directly affected by the bumiputera policies. Intakes to universities are based on ethnic belongings were the bumiputeras are typically granted about 55 percent of the total intake. The policy seems successful in improving access to education for the traditional low-income groups. However, it also discriminate towards the ethnic Chinese and students from this group are typically the best performers with the highest grades. Some estimates claim that as little as about 10 percent of the intakes would go to bumiputeras if there

were no quotas.[6] As a result of the quotas, a large number of ethnic Chinese are not allowed into Malaysian tertiary education despite higher grades than their bumiputera classmates. Many of them decide to go abroad to study and work, which has contributed to a brain-drain from Malaysia. The problem of loosing talented students is a major concern for the government and there are from time to time government attempts to lure the overseas Malaysians back home, but these attempts have not been very successful. In addition, easy access to university for bumiputeras has presumably made them put in too little effort which results in a relatively weak standard of university graduates. Prime Minister Mahathir has lately been making frequent threats to abolish the quota system. He argues that the bumiputeras are misusing their favored situation and do not deserve to be sheltered. It seems that the Prime Minister is concerned about the situation, but it is perhaps less likely that he will actually withdraw the quota system. The reason is the political threat from the ethnic Malay based Parti Islam SeMalaysia (PAS). PAS has in recent years conquered a large part of the bumiputera electorate that used to support Prime Minister Mahathir's United Malays' National Organisation (UMNO). PAS has come to power in two states, Terengganu and Kelantan, by advocating a more Islamic governance of Malaysia, and PAS also strongly supports a continuation of the bumiputera polices. Hence, to abandon the bumiputera policies means that UMNO would further weaken its own political power base.

The increased Islamic consciousness among the bumiputeras has had an additional effect on Malaysia's educational system. An increasing number of children are joining Islamic schools rather than secularized ones. These schools give much emphasize to religious studies including memorization of parts from the Koran. It is

[6] The Straits Times, May 5, 2001.

also said that this focus have partly been at the expense of other subjects. As a consequence, only about 25 percent of the students from Malaysia's religious schools qualify for university.[7] This has led to a situation where many universities are not able to fill their bumiputera quota but they are still not allowed to increase the quota to other groups. Hence, the universities are operating below their capacities, which explain part of the low tertiary enrolment rate showed in Table 6.[8] The present popularity with religious schooling is therefore likely to have a negative effect on the populations' skill in areas such as science, languages, and mathematics. Needles to say, it is this type of skills rather than religious training that is typically required in industrial upgrading. An additional but related problem is that unemployment seems to be rising among bumipuetera university graduates. For instance, the National Economic Action Council recently reported that 44,000 Malaysian fresh university graduates were unemployed.[9] Ninety-four percent of them were bumiputeras and most had studied arts and Islamic studies. Accordingly, a large group of ethnic Malays attends Middle-Eastern universities for religious studies, and they are also facing great difficulties in getting work once they return to Malaysia. For instance, 1,200 Malay graduates from the Middle East have been unable to find job after returning to the state of Kelantan in 2002.

Indonesia

As previously said, Indonesia managed to expand basic education rapidly in the 1970s and the enrolment in primary school increased from only about 60 percent in the early 1970s to almost 100 percent in the late 1980s. Secondary school enrolment rates

[7] The Straits Times, April 18, 2001.
[8] There are some signs that science and engineering departments are quietly abandoning the quota system in order to fill the courses. This is not officially sanctioned but might have an implicit support from Prime Minister Mahathir.

increased accordingly. However, education in Indonesia is still plagued by various problems. For instance, even if almost all Indonesians enter primary school, there are still about 30 percent who never finish it. Hence, the dropout rate is high and there are also widespread quality problems. Most of these problems are due to poor financing and Indonesia spends less than two percent of GNP on education (Table 2). Consequently, teachers' salaries are low, classes are large, books are of poor quality, and 20 percent of all school buildings are in a deteriorating state (Jones and Hagul, 2001).

Because of the economic crisis, public spending on education is not likely to increase. In fact, the economic problems in Indonesia will presumably lead to less public expenditures on education since the government is starved on resources and spends about one third of its total revenues on servicing an exploding foreign debt. In addition, the reconstruction of the Indonesian financial sector requires massive amounts of government funds. It has been estimated that the reconstruction will cost the government close to 100 percent of GDP spread out over several years which will leave few resources for educational improvements (Harianto, 2000). It should also be noted that the slow privatization process suggests that the government will receive less revenues than previously expected. The financial constraints will most likely delay educational reforms. One specific example is the decision to postpone the goal of attaining nine year's compulsory education.

Declining household incomes following the crisis aggravates the problem. Many families have difficulties in meeting school- and exam fees, and costs for books and school uniforms. In view of these unfavorable conditions, it was widely anticipated after the crisis in 1997 that dropouts from schools would sharply increase.

[9] The Straits Times, April 23, 2002.

Fortunately, the dropout has been less than expected, partly due to deliberate efforts by the World Bank and the Indonesian government to reach out with educational scholarships to the poorest households (Jones and Hagul, 2001). Still, there might be a delayed impact since many schools seem to face large economic difficulties. More specifically, the schools have faced a 30 percent decrease in real incomes and the situation is particularly difficult for private schools that are relatively dependent on school fees. It is therefore likely that school fees will have to be raised which will put additional stress on families ability to send their children to school.

The second major factor to affect Indonesian education is the political decentralization. Indonesia under President Suharto was one of the most centralized countries in the world with more than 90 percent of public revenue and expenditure going through the central authorities in Jakarta. The fall of Suharto saw the emergence of strong demands for more regional independence. As a consequence, two laws of regional independence were implemented in 2001, which gives the districts substantially more discretion of public incomes and expenditures.[10] The immediate result has been that the central government transferred more than 30 percent of domestic revenues back to the provinces in 2001. On the other hand, the districts will also have full responsibility for public service, including provision of education to its citizens.

The Indonesian school system has been very centralized; teachers were central government employees, their placement was determined by the center and the decisions to build schools and the specification of curriculums were a task for the central authorities in Jakarta (Oey-Gardiner, 2000). There are some advantages with a decentralization of the educational system. For instance, it will allow schools to adapt

their teaching according to their own strengths and abilities. Moreover, competition between schools might improve the quality of education.

There are also reasons to be concerned with the recent political decentralization. The reform will clearly benefit a few resource rich provinces, mainly East Kalimantan, Papua, Aceh, and Riau. Accordingly, Java is likely to benefit since tax revenues are concentrated to Java in general (85 percent of total tax revenues) and Jakarta in particular (65 percent).[11] On the other hand, most provinces and districts will face diminished incomes and difficulties in meeting the new functions that have been delegated to them (Brown, 1999). As an example on how the reforms affect different regions, resource rich East Kalimantan with a population of 2.5 million people received about 140 billion rupiah from Jakarta in 2001, whereas resource poor Yogyakarta with one million more inhabitants got only one million rupiah.

Hence, most parts of Indonesia is going to face falling revenues with the abolishment of the *Inpres* program (Sjöholm, 2002).[12] It is likely that falling revenues will have a negative effect on poor district's ability to maintain the educational standard, and it is not likely that they will be able to make much needed improvements.

Concluding Remarks

Education is a key element in economic development and growth. At an initial development level the requirement is to provide basic education and achieve widespread literacy. As development progress, the requirements will shift towards

[10] Law no. 22/99 on local government, and law no. 25/99 on fiscal relations between the center and regions.
[11] See Brodjonegoro and Asanuma (2000).

improved quality of basic education and expansion of higher education. It seems that the need for educational improvements in Southeast Asia has accelerated because of the increased competition in low-skilled production and export, which has traditionally been the region's engine of growth.

The educational standard differs substantially between countries in the region but it seems fair to say that education has not been as much emphasized as in the Northeast Asian countries Japan, South Korea and Taiwan. There is a clear positive relation between the income level and the quality of education; countries in Southeast Asia with a high income level tend to spend more on education, have higher enrolment rates and lower student-teacher ratios, than countries on a lower income level. However, there are exceptions, the most notable are perhaps the Philippines and Vietnam that seem to have an educational standard that is better than what is indicated by the countries' low income levels. It is also worth noting that Singapore is the wealthiest country in the region and with perhaps the most developed educational system, but that education in Singapore still lags behind developed countries in other parts of the world. More generally, there is one group of countries in Southeast Asia that are doing reasonably well in the area of education. This group includes Singapore, Malaysia, Thailand, the Philippines and Vietnam. On the other hand, there is one group of countries that have a rather poor standard of education, including Myanmar, Cambodia, Laos, and Indonesia.

We continued with a more detailed look at educational reforms and obstacles in Singapore, Malaysia and Indonesia. There is a widespread concern in all three countries that educational reforms are needed to achieve or sustain economic development. Singapore tries to spur creativity and entrepreneurship and are

[12] Instruksi Presiden (Presidential Instruction) was a program that transferred resources from wealthy to

addressing these issues by changes in the area of education. So far, there has been more talk about needed changes than actual implementations of educational reforms. Moreover, it seems that there are areas outside of education that are more directly related to entrepreneurship and creative thinking, but these areas might for political reason be more difficult to address.

Malaysia has been emphasizing education throughout the last decades but it seems that the country has not achieved sufficient economic returns on the large educational investments. One reason is the serious constraint from the bumiputera policies that effectively close the door to higher education for many Malaysians. There are frequent threats to abolish the bumiputera quotas, but it seems likely that this will be politically difficult for a government that depends on the support from the ethnic Malays.

The main constraint on educational reforms in Indonesia seems to be financial. The widespread expansion of basic education in Indonesia in the 1970s has not been followed by similar expansion of higher education or by improved quality of the education. Such reforms will be difficult to pursue within the near future since the government is lacking the resources for costly reforms. Moreover, the political decentralization of Indonesia will probably have positive effects on education in some areas of the archipelago, but it also means that most districts will have substantially less resources to spend on education.

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poorer regions in Indonesia. The program seems to have decreased regional income differences in Indonesia (Hill, 1997).

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