

## **EDUCATION, INDUSTRY, TRADE AND DEVELOPMENT IN ASIA-PACIFIC COUNTRIES IN 1980-99**

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### ***Abstract***

We compare the economic development of Asia-Pacific countries in the 20th century with world average, and analyse the evolution of education, fertility, population and economic growth in Asia-Pacific countries at the end of the 20<sup>th</sup> century, showing that, after centuries of slow economic development, many Asian countries have experienced an important take-off during the last two decades of that century, mainly thanks to the increase in the educational level of population and industrialization. It is important to remark the positive role of education in economic development as it contributes to moderate population growth, industrial investment per inhabitant and real income per inhabitant.

*JEL classification:* I2, J1, O1, O5, O53, O56

**Keywords:** Education in Asia, Fertility in Asia, Economic Development of Asia-Pacific countries

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### **1. Introduction**

We present a comparison of economic development in Asia-Pacific countries and analyse production by sector, educational level of population, fertility and foreign trade in countries and large areas during the period 1980-99. We emphasize the positive role education and industrial production play in fostering economic development and highlight the need to improve international

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cooperation in order to increase expenditure on education as the main priority to lower fertility rates, to increase industrial production per inhabitant and to eradicate poverty. In section 2 we present a general view of the evolution of Asia-Pacific during the twentieth century. In sections 3 we present a comparison of production by sector in Asia-Pacific countries, in Purchasing Power Parities, for the year 1999 and the evolution during the period 1980-99 in large areas. and 4 we analyse, at country and area level, some of the main variables related to economic development. Finally in section 5 we present the main conclusions.

## **2. Growth of Gdp and Population during the 20th century**

Table 1 presents the exponential rates of growth of real Gross Domestic Product, Gdp, Population, Pop, and Gdp per inhabitant, Gdph, for the period 1913-98, in some areas of Asia-Pacific and the world average. Exponential rates applied to the ratio between two variables have the property that the rate of the ratio is exactly equal to the difference between the rates of the two variables.

Table 1. Exponential rates of yearly growth, in percentage,  
1913-1998: real Gdp, Population and Gdph per inhabitant

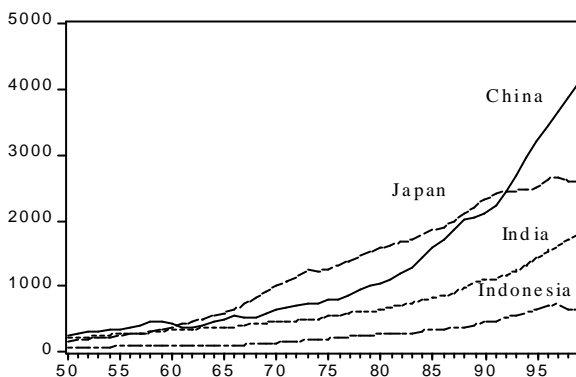
Area	Gdp	Population	Gdph
Australia and New Zealand	3.03	1.57	1.46
Japan	4.22	1.05	3.17
Asia excluding Japan	3.32	1.53	1.79
World	2.97	1.40	1.56

Notes: Own elaboration from figures by Maddison(2001).

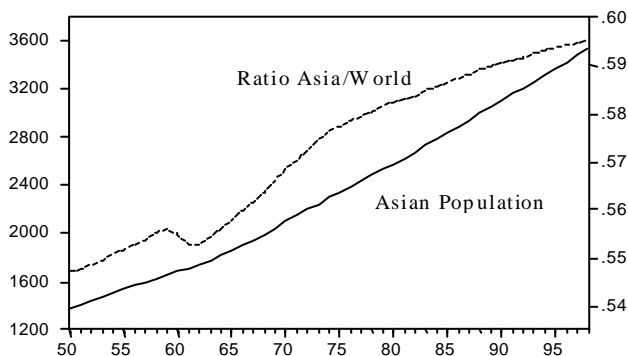
In the case of Japan the average rate of growth of real Gdp per inhabitant during the 20<sup>th</sup> century, was more than twice world average. Australia and New Zealand have experienced a rate of growth of Gdph lower than Asian countries but in spite of that they had at the end of the century very high levels of Gdph because their starting values were high in comparison with world averages. Graph

1 shows the substantial increase of real Gdp in China, Japan, India and Indonesia during the period 1950-99, and graph 2 shows the evolution of Asian Population during the period 1950-98.

Graph 1. Gdp in China, India, Japan and Indonesia  
(billions of dollars at 1990 prices)



Graph 2. Evolution of Population in Asia  
(millions of inhabitants)



Note: The left scale represents population in millions and the right scale shows the share of Asia in World population in percentage.

During the second half of the 20th century the share of Asia in world population terms increased from 55% to nearly 60% while

real Gdp also increased its share from 20% of world Gdp to almost 40%. Although Asian countries underwent a significant increase in total production during the final decades of the century, the problem is that many of them also had excessively high rates of population growth, a situation which makes the eradication of poverty and the increase of real Gdp per inhabitant difficult.

Although the development of China has been more impressive than that of India during the last decades of the 20<sup>th</sup> century, India since 1990 has also started an important take off and is likely to experience important increases in Gdph during the first decades of the 21st century, specially if socio-economic policies give to the increase of the educational level of population the priority that it deserves which is very important to get lower average fertility rates.

According to Guisan and Exposito(2001) real Gross Domestic Product in Asia-Pacific has experienced an important increase during the period 1980-99, from 23831 Bn dollars in 1980, at 1999 prices and PPPs, to 41961 in 1999, what implies a percentage of increase of 76%. Population has also experienced a high increase in Asia-Pacific, from 2554 million inhabitants in 1980 to 3513 in 1999, although the average increase per year was lower during 1990-99, with a yearly increase of 48.8 million inhabitants, than in the period 1980-90, with 51.9.

There were very important increases in real Gdp during the period 1980-99, more moderate in Western Asia, with an increase of only 43%, followed by 105% in South Central Asia, 122% in the South Pacific, 184% in India and South, 195% in South East and 207% in China and North East. The general increase of Asia-Pacific real Gdp, in this period, was 170%.

The highest percentages of population increase during the period 1990-99 correspond to Western Asia with 92%, South Central Asia with 63% and India and South with 45%, while the lowest

percentages of increase correspond to South Pacific with 44%, Indochina with 37% and the area of China and North East with 25%,

The areas and countries with the highest rates of increase in real Gdp per inhabitant are those which experienced a greater difference between the rate of growth of real Gdp and the rate of growth of population, China and North East being the most prominent area in this regard. All the areas, with the sole exception of *Western Asia*, experienced rates of increase in real production higher than their rates of increase in population and thus experienced increases in total production per inhabitant during the period 1980-99.

### **3. Production by sector of Asia-Pacific countries in 1999**

Tables 2 to 9 present real production by sector and per inhabitant in 6 large areas of Asia and the South Pacific. Data is expressed at 1999 prices and purchasing power parities, PPPs, based on our own calculations from international data published by World Bank, United Nations, and other institutions. PPPs are generally more appropriate for international comparisons than exchange rates, although in the case of Agriculture they can lead, in some low income countries, to an overestimation of real values.

Euro-Asian countries like Russia, Turkey and Trans-Caucasian countries of Armenia, Azerbaijan and Georgia are not included here but in the report on European and Eurasian countries of Guisan and Aguayo(2002) as those countries have decided to form part of the Council of Europe. The same happens with the five North Central Asian countries that belonged to the former USSR and which have decided, in the year 2000, to become members of the Euro-Asian Economic Community together with Russia and Belarus. They are Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan and Uzbekistan. They have been included in the above mentioned study. The countries and territories with more than one million people

included in the 6 areas of Asia and South Pacific during the period 1980-99 are the following ones:

1. *Western Asia or Near East*: Bahrain, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Palestinian Territories, Saudi Arabia, Syria, United Arab Emirates and Yemen.

2. *South Central Asia or Middle East*: Afghanistan, Iran, and Pakistan.

3. *India and South*: Bangladesh, Bhutan, India, Nepal and Sri Lanka.

4. *China, Japan and North East*: China PR, Hong-Kong (China), Japan, North Korea, Mongolia, Taiwan and South Korea.

5. *Indochina or South East*: Cambodia, Lao, Myanmar, Thailand and Vietnam.

6. *South Pacific*: Australia, Indonesia, Malaysia, New Zealand, Papua-New Guinea, Philippines and Singapore.

This classification in large areas takes into account population size, geographical criteria and other international criteria. Population size varies between 100 and 400 million people in 4 out of the 6 areas, and is higher than 1000 million in the cases of the largest areas of *India and South* and *China and North East*. Some countries with more than one million inhabitants are not included in the tables by country because of problems of unavailability of data from the international sources utilized.

Furthermore, there are small countries and territories with less than one million inhabitants in 1999, such as the emirate of Qatar in West Asia, the Maldives in South Asia, Macao(China) in North East Asia, and several more small countries and territories in the

South Pacific islands, such as Brunei and Timor Oriental in the proximity of Indonesia, and many others situated further into the Pacific.

In the case of Iraq figures are only provisional estimations and data for this country was not taken into account in the calculation of area averages.

Table 2. Gdph by sector in Western Asia, 1999  
(dollars per inhabitant at 1999 prices and PPPs)

Country	Agriculture	Industry	Services	Total
Iraq	162	810	1728	2700
Israel	748	6923	11040	18712
Jordan	78	1049	2758	3884
Kuwait	181	9036	8855	18072
Lebanon	571	1284	2900	4755
Saudi Arabia	682	4676	4384	9742
Syrian A.R.	690	1519	2393	4602
Yemen	312	899	624	1834
Total Area	541	2940	3538	7020
Asia-Pacific	629	1695	2065	4389
World	591	2285	4154	7031

The countries and territories of Western Asia not included in table 3 are the following: 1) The Palestinian territories of Gaza and West Bank, with estimations for total Gdp per inhabitant of 1060 and 2050 dollars respectively in the year 1999, at current prices and PPPs, and a population of 1.077 and 1.611 million. 2) The Federation of the United Arab Emirates, with a Gdph of 18162 dollars and a population of 2,673 million, the Emirate of Bahrain with a Gdph of 13688 and a population of 671 thousand, the emirate of Qatar with a Gdph of 18789 and a population of 561 thousand, and the sultanate of Oman with a Gdph of 13356 and a population of 2.238 million.

Oil production played an important role in the development of this area during the second half of the 20th century, and the group of countries of Western Asia reached a Gdph of 9463 dollars in 1980, at 1999 prices and PPPs, which is 4 times greater than the Asia-Pacific average and 1.7 times greater than the world average for that year.

The low educational levels of population, and the excessively high fertility rates of many of these countries explain their losses of real production per inhabitant during the period 1980-99. In 1999, Gdph decreased to 75% of its 1980 value, with a value very close to world average and only 1.6 times more than the Asia-Pacific average.

The main decreases in real production per inhabitant occurred in countries with very high rates of population growth such as Saudi Arabia and Iraq. The highest levels of real production per inhabitant in this area in 1999 correspond to Israel with 18712 dollars and Kuwait with 18702. Table 3 presents data for South Central Asia, or the Middle East.

Table 3. Gdph by sector in South Central Asia, 1999  
(dollars per inhabitant at 1999 prices and PPPs)

Country	Agriculture	Industry	Services	Total
Afghanistan	480	160	160	800
Iran	937	1458	2601	5206
Pakistan	507	488	956	1951
Total Area	628	880	1480	2988
Asia-Pacific	629	1695	2065	4389
World	591	2285	4154	7031

The estimations for Afghanistan are only provisional, because of problems of unavailability of data for this country. These provisional estimations have not been taken into account in the calculations of area averages. The very low educational level of population in the case of Afghanistan is responsible for its excessively



high fertility rate and many of its difficulties to achieve better socio-economic conditions.

Iran is the only country of this area with a value of real production per inhabitant higher than the Asia-Pacific average during the period 1980-99. This country has an educational level of population higher than the area average of total years of schooling, implying a higher capacity for development. Table 4 presents the data for production by sector in South Asian countries.

Table 4. Gdph by sector in India and South, 1999  
(dollars per inhabitant at 1999 prices and PPPs)

Country	Agriculture	Industry	Services	Total
Bangladesh	320	412	793	1524
India	668	597	1122	2387
Nepal	513	275	463	1250
Sri Lanka	699	931	1697	3327
Total Area	628	575	1082	2285
Asia-Pacific	629	1695	2065	4389
World	591	2285	4154	7031

Although the average value of real production per inhabitant is very low in South Asia, the evolution during the period 1980-99, was positive, with an increase of nearly 100%. The countries of South Asia which are not included in table 5 are the following: 1) Bhutan in the North of this area, with an estimated value of Gdph of 1341 dollars in 1999 and a population of 877 thousand. 2) the Maldives in the Indian Ocean, with a value of Gdph of 4423 dollars and a population of 276 thousand.

Table 5 presents the data for North East Asia, and we can see a variety of situations in the its countries. Japan was the most dynamic Asian economy during the second half of the 20th century,

with a level of production per inhabitant in 1999 ranking among the top world positions, with 25,975 dollars.

The countries and territories of North East Asia not included in table 5 are the following: 1) Korea North, with an estimated value of Gdph of 1000 dollars in 1999 and a population of 21.456 million inhabitants. 2) Macao (China), former Portuguese territory, with a Gdph of 16937 dollars and a population of 434 thousand. 3) Taiwan, with a Gdph of 19652 dollars and a population of 22.066 million.

Table 5. Gdph by sector in China, Japan and North East:  
Agriculture and Total (dollars at 1999 prices and PPPs)

Country	Agriculture	Industry	Services	Total
China	638	1876	1238	3753
Hong-Kong China	14	3324	18835	22159
Japan	519	9611	15845	25975
Korea South	812	7143	8280	16235
Mongolia	511	447	639	1597
Total Area	630	2736	2843	6209
Asia-Pacific	629	1695	2065	4389
World	591	2285	4154	7031

China, the most populated country in the world has experienced very high rates of economic development since 1980, and multiplied the real value of total production per inhabitant, during the period 1980-99, by a factor of nearly 5. This highly positive evolution occurred largely beyond the year 1987, thanks to the increase in the educational level of population, industrialization and economic policies introduced to foster production and trade. Other countries and territories, such as Taiwan and South Korea, had high levels of production per inhabitant in 1999 due to industrial development, and in the cases of Hong-Kong and Macao this was due to commercial development.

Table 6 presents the data corresponding to the continental countries of South-East Asia. Several countries of this area suffered considerable conflicts and other hindrances during the latter decades of the 20th century which brought down the rate of economic development. Although the value of production per inhabitant in the area experienced a substantial increase during the period 1980-99, it is still very low when compared with the world average. Table 7 presents data for South-Pacific countries with more than one million inhabitants.

Table 6. Gdph by sector in South East Asia, 1999  
(dollars per inhabitant at 1999 prices and PPPs)

Country	Agriculture	Industry	Services	Total
Cambodia	700	210	490	1400
Laos	771	320	364	1455
Myanmar	656	111	471	1238
Thailand	800	2340	3017	6157
Vietnam	497	612	803	1912
Total Area	645	999	1378	3022
Asia-Pacific	629	1695	2065	4389
World	591	2285	4154	7031

Australia and New Zealand both had high levels of production per inhabitant throughout the 20th century due to the high educational level of their populations and high level of industrial development. Singapore followed the same pattern over the last few decades of that century.

Table 7. Gdph by sector in South-Pacific, 1999  
(dollars per inhabitant at 1999 prices and PPPs)

Country	Agriculture	Industry	Services	Total
Australia	733	6349	17338	24419
Indonesia	584	1313	1021	2919
Malaysia	1121	3522	3362	8004
New Zealand	1358	5238	12803	19399
Papua-New Guinea	512	365	1559	2436

Philippines	635	1158	1943	3737
Singapore	265	9529	16676	26470
Total Area	645	1819	2597	5061
Asia-Pacific	629	1695	2065	4389
World	591	2285	4154	7031

There are 16 small countries and territories of South-Pacific, with 3.7 million people as a whole, which have an average Gdp per inhabitant of 7477 dollars in 1999: Brunei, Fiji, Guam, Kiribati, Marshall Islands, Micronesia, Nauru, New Caledonia, Palau, French Polynesia, Salomon Islands, Samoa, Timor East, Tonga, Tuvalu and Vanuatu. The highest levels of income per inhabitant in this group for year 1999 correspond to Brunei with 17868, Guam with 22204, New Caledonia with 21127 and French Polynesia with 22204.

Tables 8 and 9 present a summary of the evolution of Gdph in the large areas of Asia-Pacific. Although some Asia-Pacific countries, such as Japan, Australia and New Zealand, have levels of production per inhabitant clearly higher than world averages, the large areas of Asia-Pacific are, in almost all the columns of these tables, below world averages.

Table 8. Production per head in large areas of Asia-Pacific:  
Agriculture and Total (dollars at 1999 prices and PPPs)

Area	Agriculture		Total	
	1980	1999	1980	1999
1. Western Asia	610	541	9463	7020
2. Central Asia	372	628	2375	2988
3. India and South	489	628	1169	2285
4.China and N. East	348	630	2539	6209
5.Indochina	461	645	1399	3022
6.South Pacific	592	645	3295	5061
Total Asia-Pacific	430	629	2324	4389
World	462	591	5434	7031

Source: Own elaboration based on World Bank, and other statistics.

During the period 1980-99, Asia-Pacific experienced an increase of 46% in real value of production per inhabitant in Agriculture, 123% in Industry, 82% in Services and 89% in Total, while the corresponding percentages of increase at World level were much lower: 28% in Agriculture, 32% in Industry, 28% in Services and 29% in Total. All the areas, with the exception of Western Asia, experienced a positive evolution during the period 1990-99, and several of them also during 1980-90.

Table 9. Production per head in large areas of Asia-Pacific:  
Industry and Services (dollars at 1999 prices and PPPs)

Area	Industry		Services	
	1980	1999	1980	1999
1. Western Asia	4600	2940	4252	3538
2. Central Asia	1006	880	998	1480
3. India and South	248	575	431	1082
4. China and N. East	917	2736	1273	2843
5. Indochina	310	999	628	1378
6. South Pacific	1091	1819	2605	2597
Total Asia-Pacific	761	1695	1133	2065
World	1732	2285	3240	4154

Source: Own elaboration based on World Bank and other statistics.

We can see that the countries and areas with the highest levels of production in industry usually have the highest levels of production in services, because both sectors have important interrelationships.

#### **4. Education, fertility and development in Asia-Pacific countries**

Table 10 presents a summary of the evolution of Population, Pop, during the period 1980-99, in Asia-Pacific areas, together with the values of the following variables:

Eduh = Public expenditure on Education per inhabitant, in 1995 in dollars at that years prices and PPPs.

Tyr99 = Total average years of schooling per adult in 1999.

Fer00 = Fertility rates, average number of children expected per woman during her life, corresponding to population of year 2000.

Tables 11 to 16 present the data at country level for each area. Totals per area include also the estimations for small countries, and big countries with unavailable data in the main statistical sources, based on our own estimations from several sources.

The figures are based on Barro and Lee(2000) for Tyr99, Barro and Lee(1996) and our own estimations for the variable Fer00, Guisan(1997) for the value of Eduh and United Nations and other international statistics for population.

In the short term of two decades, from 1980 to 1999, the Asia-Pacific population has increased by nearly 1000 million people, which is almost 39% of its population in 1980, and 2/3 of the total increase in world population during that period.

Table 10. Population, Education and Fertility in areas of Asia-Pacific

Area	Pop80	Pop90	Pop99	Eduh	Tyr99	Fer00
Western Asia	53	75	102	245	4.6	5.3
South Central	137	187	223	128	3.3	4.7
India + South	804	996	1169	46	4.5	3.4
China + N.E.	1143	1308	1433	149	6.2	1.7
Indochina	179	220	245	99	4.7	2.8
South Pacific	236	288	341	157	6.0	2.8
Asia-Pacific	2554	3073	3513	112	5.3	2.7
World	4429	5262	5971	258	5.8	2.8

The average fertility rate of Asia-Pacific is slightly lower than world average in the year 2000, due to its recent moderation but it

was much higher during the period 1950-95. This reduction is important for the increase of investment and production per inhabitant. The improvement of the educational level in Asia-Pacific during the latter decades of the 20th century was substantial, with an increase of the variable Tyr from approximately 2.6 in 1970 to 5.3 in 1999. The countries with the higher increases are also the most prominent in terms of their increases of production per inhabitant.

The figures of educational level of population and fertility rates in 1999-2000 are clearly more favourable than two decades ago in the majority of Asia-Pacific countries, signifying that education is higher and fertility is lower than before.

Table 11. Population, Education and Fertility in Western Asia

Country	Pop80	Pop90	Pop99	Eduh	Tyr99	Fer00
Iraq	13.1	18.0	22.4	174	4.3	5.2
Israel	3.9	4.7	6.1	910	9.2	2.9
Jordan	2.2	3.3	4.7	197	7.4	4.7
Kuwait	1.4	1.6	1.9	1494	7.0	2.9
Lebanon	3.0	3.0	4.3	47	5.8	2.3
Saudi Arabia	9.4	15.1	21.4	89	3.7	6.1
Syrian A.R.	8.7	12.1	15.7	232	5.7	4.0
Yemen	8.5	12.5	17.0	114	1.8	7.6
Total Area 1	53.3	75.0	102.4	245	4.6	5.3
Asia-Pacific	2572	3097	3542	112	5.3	2.7
World	4429	5262	5971	258	5.8	2.8

Table 12. Population, Education and Fertility in South Central Asia

Country	Pop80	Pop90	Pop99	Eduh	Tyr99	Fer00
Afghanistan	15.5	18.6	25.4	12	1.1	6.9
Iran	39.1	55.8	63.0	251	4.7	3.2
Pakistan	82.7	112.3	134.8	60	2.5	5.5
Total Area 2	156.2	211.0	252.5	128	3.3	4.7
Asia-Pacific	2572	3097	3542	112	5.3	2.7
World	4429	5262	5971	258	5.8	2.8

Table 13. Population, Education and Fertility in India and South

Country	Pop80	Pop90	Pop99	Eduh	Tyr99	Fer00
Bangladesh	86.7	108.3	127.7	31	2.4	3.8
India	687.3	849.5	997.5	48	4.8	3.3
Nepal	14.5	19.4	23.4	31	1.9	4.8
Sri Lanka	14.7	17.0	19.0	98	6.1	2.1
Total Area 3	804.5	996.0	1168.7	46	4.5	3.4
Asia-Pacific	2572	3097	3542	112	5.3	2.7
World	4429	5262	5971	258	5.8	2.8

Table 14. Population, Education and Fertility in China, and N. East

Country	Pop80	Pop90	Pop99	Eduh	Tyr99	Fer00
China	981.2	1133.7	1249.7	48	5.7	1.8
H-K China	5.0	5.7	6.9	646	9.5	1.2
Japan	116.8	123.5	126.6	1003	9.7	1.4
Korea South	38.1	42.9	46.8	443	10.5	1.5
Mongolia	1.7	2.2	2.6	172	5.2	2.7
Total Area 4	1142.8	1308.0	1432.6	149	6.2	1.7
Asia-Pacific	2572	3097	3542	112	5.3	2.7
World	4429	5262	5971	258	5.8	2.8

Table 15. Population, Education and Fertility in South East

Country	Pop80	Pop90	Pop99	Eduh	Tyr99	Fer00
Cambodia	6.8	9.1	11.8	29	3.3	5.2
Laos	3.2	4.1	5.1	34	3.2	5.3
Myanmar	33.8	42.3	45.0	16	2.4	3.3
Thailand	46.7	56.3	61.7	275	6.1	2.1
Vietnam	53.7	67.6	77.5	23	5.2	2.5
Total Area 5	179.3	219.6	245.0	99	4.7	2.8
Asia-Pacific	2572	3097	3542	112	5.3	2.7
World	4429	5262	5971	258	5.8	2.8



Table 16. Population, Education and Fertility in South-Pacific

Country	Pop80	Pop90	Pop99	Eduh	Tyr99	Fer00
Australia	14.7	17.0	19.0	1051	10.6	1.8
Indonesia	148.3	178.2	207.0	48	4.7	2.6
Malaysia	13.8	17.8	22.7	439	7.9	3.3
New Zealand	3.1	3.4	3.8	1222	11.5	2.0
Papua-N.Guinea	3.1	3.9	4.7	180	2.3	4.6
Philippines	48.3	61.5	76.8	67	7.6	3.6
Singapore	2.3	2.7	3.2	729	8.1	1.6
Total Area 6	236	288	341	157	6.0	2.8
Asia-Pacific	2572	3097	3542	112	5.3	2.7
World	4429	5262	5971	258	5.8	2.8

The outlook for Asia-Pacific countries is generally very good as the majority of these countries are experiencing important progress in the process of development due to improvements in the educational level of population and industrialization. Nevertheless, there are still some areas with very low educational level of population which need international cooperation if they are going to improve their situation and eradicate poverty. The case of Afghanistan with only 1.1 year of average schooling of adult population is highly unacceptable and is the consequence of the lack of goodwill and international cooperation from many countries.

Although some special demographic policies can influence the reproductive patterns of population in some countries, it has been proved that the main variable which accounts for the reduction of excessive fertility rates is educational level of population, as demonstrated in Guisan, Aguayo and Exposito(2001) and other studies.

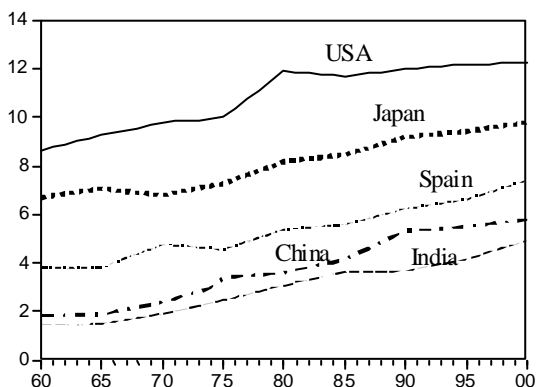
The following graphs show the evolution of the educational level of population and the increase in population of three major Asian countries: India, China, Japan, in comparison with the USA and Spain, as examples, respectively of high and middle levels of education

among American and European countries. We can notice that India with a low level of the average Total Years of Education of population, Tyr, is the country with the highest levels of population increase. China has experienced an important diminution in the percentage of increase of population due not only to the increase of education but also to special and controversial demographic rules.

The best solution to the problem of excessively high rates of fertility in India, and in other countries, is to increase the educational level of female and male population, so the regulation would be automatic and volunteer, according to the international experience. Besides that the increase of the educational level has other beneficial effects on economic development.

Graph 3 presents an international comparison of Total Years of Schooling, Tyr, of 3 Asian countries, China, Japan and India, with 2 Euro-American countries, the USA, representing a high standard of educational level and Spain as representative of a middle one.

Graph 3. Total years of schooling of adult population

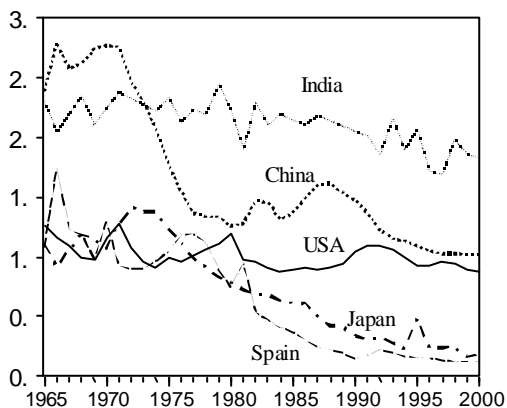


We can notice that Japan showed already in 1960 a high educational level of population, much higher than Spain although below the USA. India and China presented very low educational levels in 1960, but both countries have experienced an important

increase during the period 1960-2000, specially China. In spite of that increase the average total years of education is yet very low and with problems due to the low levels of expenditure on education per inhabitant, and we would like to insist upon the priority that educational expenditure should receive in socio-economic policies.

Graph 4 present a comparison of population growth in those 5 five countries. Population growth depends on fertility rates and migration movements. It is important to make the distinction between both situations, because the causes and consequences are very different. In the case of India for example population growth is due to high fertility rates, while in the USA it is mainly due to immigration.

Graph 4 . Percentage of yearly increase in population



The effect of immigration also affects to the fertility rate because the average educational level of immigrants is generally lower than the USA average, and thus it implies higher average levels of fertility for those groups of population. In the year 2000 the fertility rate of the USA was 2, while in Japan and many European countries was 1.4. China with 1.8 is near these figures but India with 3.3 had yet an excessively high fertility rate.

The case of Spain with a very low value of fertility rate, 1.2, lower than Japan, in spite of its lower educational level, is explained for special circumstances of previous decades, including the effects of the low rates of births during the civil war of 1936-39 and emigration movements during 1940-1970, which have had demographic consequences at the end of the 20<sup>th</sup> century and also to some particular socio-economic circumstances which lead to a higher average age of women with a first child.

As several authors have pointed out India has shown a very slight decrease in population growth due not only to the low educational level of population in general, but particularly to the low educational level of female population.

The proposals by Jayachandran(2002) and other authors, for improving the average level of education of female population, should have in our opinion the highest priority in economic policies of India.

## **5. Foreign trade in Asia-Pacific countries**

Exports of goods and services are generally needed in all countries in the group, and especially in the small ones, in order to bring about the necessary increase in imports of goods and services for economic development. Foreign trade is usually important both from the demand and the supply side.

The majority of less developed countries, LDCs, and newly developed countries, NDCs, need to export in order to improve their capacity for imports. In many cases imports consist mainly of raw materials and the machinery necessary to improve industrial development, although in a few cases the main activity of some small countries is just to trade, without any significant degree of industrial transformation in their territory.

Tables 17 to 22 show the data corresponding to the levels of exports of goods, in the years 1990 and 1998 in Asia Pacific

countries, elaborated from World Bank statistics expressed in dollars at current prices and exchange rates. In a few cases, with unavailability of data, we include our own provisional estimations. Current prices in dollars for that period were similar to constant prices because the price index of the exports of goods changed very little during that period.

Table 17. Exports of Goods in Western Asia  
(dollars per inhabitant at current prices)

Country	1990	1998
Iraq	1942	705
Israel	2592	3881
Jordan	325	368
Kuwait	4420	5171
Lebanon	164	166
Saudi Arabia	2951	1938
Syrian A.R.	348	188
Yemen	55	91
Total Area 1	1341	1149
Asia-Pacific	269	421
World	657	917

Table 18. Exports of Goods and Services in Central Asia  
(dollars per inhabitant at current prices)

Country	1990	1998
Afghanistan	40	54
Iran	302	204
Pakistan	50	64
Total Area	134	110
Asia-Pacific	269	421
World	657	917

We notice that the value of exports of goods per inhabitant is high in this area, mainly due to oil production, although in some countries, the value of exports was unable to increase at the same high rate as population leading to a decrease in the value of exports

per inhabitant during the period 1980-99. Although some small Asia-Pacific countries have levels of exports per inhabitant which are the highest in the world, the average value of this variable in total Asia-Pacific is rather low, with only 314 dollars per inhabitant in 1990 and 497 in 1998, while world averages were, in both years respectively, 810 and 1141.

Table 19. Exports of Goods and Services in India and South  
(dollars per inhabitant at current prices)

Country	1990	1998
Bangladesh	15	30
India	21	34
Nepal	11	20
Sri Lanka	117	251
Total Area <sup>3</sup>	22	37
Asia-Pacific	269	421
World	657	917

Table 20. Exports of Goods in China, Japan and North East  
(dollars per inhabitant at current prices)

Country	1990	1998
China	55	148
Hong-Kong China	14442	26012
Japan	2328	3073
Korea South	1517	2857
Mongolia	301	145
Total Area 4	380	617
Asia-Pacific	269	421
World	657	917

Table 21. Exports of Goods in Indochina  
(dollars per inhabitant at current prices)

Country	1990	1998
Cambodia	9	28
Laos	19	73
Myanmar	8	23

Thailand	409	888
Vietnam	35	122
Total Area5	145	328
Asia-Pacific	269	421
World	657	917

Table 22. Exports of Goods in South-Pacific  
(dollars per inhabitant at current prices)

Country	1990	1998
Australia	2332	2979
Indonesia	144	240
Malaysia	1656	3323
New Zealand	2821	3232
Papua-NG	295	390
Philippines	131	394
Singapore	19502	34915
Total Area 6	585	1002
Asia-Pacific	269	421
World	657	917

There is generally an important relationship between foreign trade and industrialization. Many authors such as Karras(2003) have analysed the effects of foreign trade in development and found that the effect of openness on economic growth is positive. Guisan and Cancelo(2002) analyse the positive effects of manufacturing production and other variables, including the educational level of population, on the evolution of exports of goods in OECD countries. Also some countries and areas have a relatively high level of exports per inhabitant due to oil production or other special resources.

Finally table 23, shows the exports of goods and services in large areas of Asia-Pacific, during the period 1990-98, in US dollars per inhabitant at current prices and exchanges.

Western Asia is the most prominent area of Asia-Pacific with the highest value of total Exports per inhabitant in 1990 and 1998, with a value of 1426 dollars in 1998. The countries with the highest values within this area in both years were Kuwait, Israel and Saudi Arabia. Central Asia has values of exports per inhabitant below the Asia-Pacific average, with only 122 dollars per inhabitant in 1998, and the same is the case for India and South, with only 48 dollars per inhabitant. All the countries in this areas are below the Asian average, Iran and Sri Lanka being two of the highest.

Table 23. Exports of Goods and Services in large areas, Asia-Pacific

Area	1990			1998		
	Goods	Services	Total	Goods	Services	Total
Western Asia	1341	218	1559	1149	277	1426
South Central	134	9	143	110	12	122
India+South	22	5	27	37	11	48
China+N.E.	380	57	437	617	101	718
Indochina	145	37	182	328	82	410
South-Pacific	585	121	705	1002	185	1187
Asia-Pacific	269	45	314	421	76	497
World	657	154	810	917	224	1141

The North East area has an average value of exports per inhabitant higher than the Asia-Pacific average but below world average. Some countries in this area are above world average, such as Japan and South Korea, with more than 3000 dollars each in the year 1998. The case of Hong-Kong (China) is an example of a small territory which is highly specialized in international trade, and whose activities have a positive impact on neighbouring regions.

In South-Pacific the case of Singapore is remarkable as a small country with a high level of education, highly specialized in international trade and with a value of exports per inhabitant higher than 40000 dollars, placing it in the top position at world level. New



Zealand, Malaysia and Australia present also high values of exports per inhabitant which are clearly above world average.

## **6. Conclusions**

During the last decades of the twentieth century many important Asian countries experienced an obvious rapid development which led to higher rates of growth of Gross Domestic Product per inhabitant than many other areas of a similar starting level, and higher rates than world average.

Despite this positive general trend there are some important Asian areas which have not evolved positively due to the negative consequences of a general failure in the education process of the population. International organizations such as World Bank and the United Nations should improve cooperation with a view to increasing the educational level of the population of those areas.

In highly populated countries such as China, India and Indonesia, there is a great need for the promotion of regional development in order to ensure opportunities of development for the whole territory and to avoid many human and social problems derived from excessive migration movements to over-crowded urban areas.

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