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**THE CONTRIBUTION TO ECONOMIC
GROWTH BY HUMAN CAPITAL**

**THE COMPARISON AMONG EMERGING
COUNTRIES**

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THE MAIN OBJECTIVES

- Which factors of human capital contribute to economic growth among emerging countries?
- How the quality and the stock side of human capital are effective?

INTRODUCTION 1

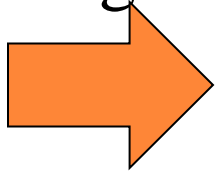
Approaches to educational attainment in developing countries

- Education for All (EFA): Goal 2 of MDGs (Millennium Development Goals) aims to “enable children everywhere, boys and girls alike to achieve universal primary education by 2015”.
- EFA conference: in Jomtien, Thailand in 1990.
- Dakar Framework for action: in 2000, in Dakar, Senegal to improve and promote EFA.

INTRODUCTION 2

Why Education ?

bring the high human capital



both benefits of an individual and a society

- For an individuals: be able to enhance his/her own productivity and to get more income in the future (in long-term) .
- For a society, implement new technologies devised by others and enhance the possibility of economic growth.

INTRODUCTION 3

What is human capital?

- The factor estimating the rate of return to education, pioneered by Schultz (1961).
- The contribution to the innovative capacity of the economic knowledge for new technologies and products.
- The important factor to promote economic growth.
- Investments in education can enhance the human capital.

LITERATURE REVIEW 1

Relationships between education and economic growth

- Measurement of returns to education by cost-benefit analysis:
a systematic process for calculating and comparing benefits and costs of a project to have a priority to the project being the most benefit.
- Most exact measurement of cost-benefit analysis:
the internal rate of return (IRR) having two definitions of private rate and social rate of return to education.

LITERATURE REVIEW 2

Limits to Applying the IRR method

- The risk of overestimation and underestimation.
- Narrow viewpoint explaining economic growth by only the schooling.

LITERATURE REVIEW 3

Recent outcome from IRR estimation

- The rate of returns to education has declined with a significant increase in average schooling years.
- Changes in technology could increase the demand for schooling, then this may lead to an increase in the returns to schooling.
- Returns to education at all level depend on his/her ability rather than school background.

MODEL QUALIFICATION

Focus 1

The relationships between economic growth and **quality side** of human capital should be considered.

Focus 2

The **stock side** of human capital must be included in the analysis.

Focus 3

The differences in income levels and growth rates across the countries must be focused.

DISCUSSION ON MODEL

The analysis beyond IRR method

- Analyze the quality and stock side of the human capital → only the quantity side doesn't bring some effect to the economic growth.
- Focus on the emerging countries with the high GDP growth rate → consider the differences across countries with different economic background.

MODEL FORMULAE 1

The quality of human capital:

$$\text{GDP} = a_0 + a_1 \text{PTR} + a_2 \text{EXP}$$

- GDP: the growth rate of net GDP (2001-2010)
- (a1) PTR: the pupil / teacher ratio
- (a2) EXP: the rate of education expenditure



MODEL FORMULAE 2

The stock side of human capital

Trade: $GDP = b_0 + b_1 EXPO + b_2 MANU$

- (b1) EXPO: the share of export to GDP (2001-2010)
- (b2) MANU: the rate of manufactured products to whole export

Distribution of income: $GDP = c_0 + c_1 Gini$

- (c1) Gini: distribution of income: the Gini coefficient (around 1990-94)

Population growth: $GDP = d_0 + d_1 LF + d_2 PG + d_3 GDP\ per$

- (d1) LF: the rate of labor force
- (d2) PG: the rate of population growth
- (d3) GDP per: the growth rate of GDP per capita.



STUDY AREA

The selected 14 emerging countries with high growth rate of GDP (net)

- The countries in NICs (Newly Industrializing Economics): Hong Kong, Malaysia, Singapore, South Korea, Taiwan and Thailand
- The countries in Next 11: Indonesia, the Philippines, Turkey and Vietnam
- BRICs countries: Brazil, Russia, India and China

DATA SOURCE

- (a1) the pupil / teacher ratio and (a2) the rate of education expenditure:
UNESCO; Data Centre (2005-2010)
- the growth rate of net GDP (2001-2010), (b1) the share of export to GDP (2001-2010) and (b2) the rate of manufactured products to whole export (2006-2010):
JETRO; country Data
- (c1) the Gini coefficient (around 1990-94) (d1) the rate of labor force, (d2) the rate of population growth (2001-2010) and (d3) the growth rate of GDP per capita(2001-2010):
World Bank; Statistics

Result

Table 1. Economic growth and human capital

	The quality of human capital		The stock of human capital		
explanatory variable	(a1)(a2) All 14 countries BRICs		Trade (b1)(b2) 12 countries(1)	Distribution of Income (c) All 14 countries	Population growth (d1)(d2)(d3) All 14 countries
R square	0.587835	0.963357	0.735515	0.594568	0.42383
Constant term	1.064469	13.92031	2.25081	12.00544	-6.24337
Partial regression coefficient	(a1)-1.3124 ** -2.02694*		(b1) 0.05999*	(c1)-0.1448**	(d1) 0.22509 (d2) -0.65372 (d3) -0.06969
	(a2) 0.001289	0.04177	(b2) 0.114036**		
R square (Adjustment)	0.484794	0.890072	0.669394	0.557711	0.175901

(1): Singapore and Hong Kong are dropped, because the shares of export to GDP in Singapore and Hong Kong are over 150% as intermediate goods are often double-counted.

* and ** represent P value under 0.05 and 0.01 respectively.

FOCUS 1

Correlation between Economic Growth and Quality of Human Capital

- Pupil / teacher ratio:

Lower ratio improves the quality of education: Teachers can provide more effect to one student.

- Rate of education expenditure of government to GDP:

It is not conclusive that high rate could enhance economic growth (the quality of education such as improving facilities, materials on school and the wage of teachers).

FOCUS 2

Correlation between Economic Growth and Stock of Human Capital

Trade

- The higher rate of export to GDP and manufactured products give a positive impact on the economic growth.
- The more increase their export, the more skilled is their human capital.

Distribution of income

- The low Gini coefficient (during 1990-1994) on the initial stage of the economic growth has developed the country's economy more rapidly.

Population growth

- There is no specific relationships between the population and the economic growth.
- The relationships between the population growth and the economic growth may be evident through the long term analysis (from the literature review).

FOCUS 3

The differences in income levels and growth rates across the countries must be focused.

- BRICs countries showed the significant result on pupil/teacher ratio.
- The rate of the education expenditure of government to GDP in BRICs countries, which is not extremely high compared with other countries, is less likely to contribute the economic growth.
- BRICs countries showed insignificant result on the stock side of human capital including trade, distribution of income, and population growth, while they showed the significant result on the quality side of human capital.

SOME OF FINDINGS

- The quantity side of education is not the only measure to enhance the human capital and develop the economic growth. The quality and the stock side of education must be considered in addition to the quantity side.
- Emerging countries such as BRICs are likely to have more quality side effect on the economic growth rather than stock side.

POLICY IMPLICATIONS

- Effective educational strategy for development should focus not only on sending more children to school, but also on maintaining or enhancing the quality of schooling.
- A wide range of factors such as migration, which could have a positive impact to economic development, must be analyzed.

Thank you

