Improving the Distribution of Education for Self Reliance

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October 18, 2007

Human Capital

- The main asset of most poor people is their *knowledge* and *skills*. This we call *human capital*.
- Investing in the human capital of the poor is an effective way to help them and reduce poverty.

Distribution

- For economic growth to have an impact on poverty the principal asset, human capital, needs to be distributed equally
- To be sustained, development must be equitable and inclusive.

Our view

We believe that inadequate attention has been given to the distributive effect of public investments in education.

Where has all the education gone?

Research shows a weak relation between public spending on education and outcomes such as student learning or mastery of the curriculum. (Filmer and Pritchett 1999)

Why is this?

Reasons

1. Public resources subsidize education for the comparatively wealthy.
2. The way we have looked at the quantitative expansion of education has masked the distribution of education.

Why do the better off capture the resources aimed at the poor?

1. **Public resources subsidize education for the wealthy.**

Reasons

- Vietnamese demand higher quality education and are willing to pay for it.
- Money begins to pour into physical capital—e.g. the construction of new universities and schools in urban centers. This works against primary and lower secondary education of the poor in rural areas.

Gini Coefficients

- Enter the education Gini—a superior measure of quantitative coverage.
  - Gini coefficients are familiar measures of income inequality.
  - Within a given population, Gini coefficients indicate the distribution of a particular characteristic.
  - Gini coefficients vary from 0 (total equality) to 1 (total inequality).

Lorenz Curves

- Gini coefficients can be understood graphically by reference to the Lorenz curve.
- The Lorenz curve displays a diagonal representing perfect equality.
  - The closer the curve is to the diagonal, the more equally the characteristic is distributed in the population. The further the curve from the diagonal, the larger the inequality in the population.

The Gini Coefficient

- The Gini coefficient is the area between the curve and the diagonal as a percentage of the triangular area below the diagonal.

$$E_{gini} = \left(\frac{1}{\mu}\right)\sum_{a=1}^{9}\ \sum_{b=1}^{a-1} x_a\left|z_a - z_b\right|x_b$$

- The higher the Gini, the more unequal the distribution.

The Education Gini Coefficient

- Acknowledged as the best distributive measure of education.
- Makes explicit both absolute coverage and the distribution.
- Is negatively correlated with mean years of schooling at -.84
- Does not tell us where (at what education level) inequality is located.
- Does not tell us about the *quality* of education.

The Education Gini Coefficient

- The total number of years of education in the labor force and the equality of distribution of education in the labor force are highly related, but not identical.

- Although the education Gini coefficient may be used for children of school age we believe it is most appropriate as a measure of the quality of the labor force.

Conclusions

- Investments in education have failed in many cases to produce planned economic growth because the distribution of human capital was unequal.

- Exclusive reliance on enrollment rates as a measure of quantitative expansion or system coverage has desensitized planners to the issue of inequality.
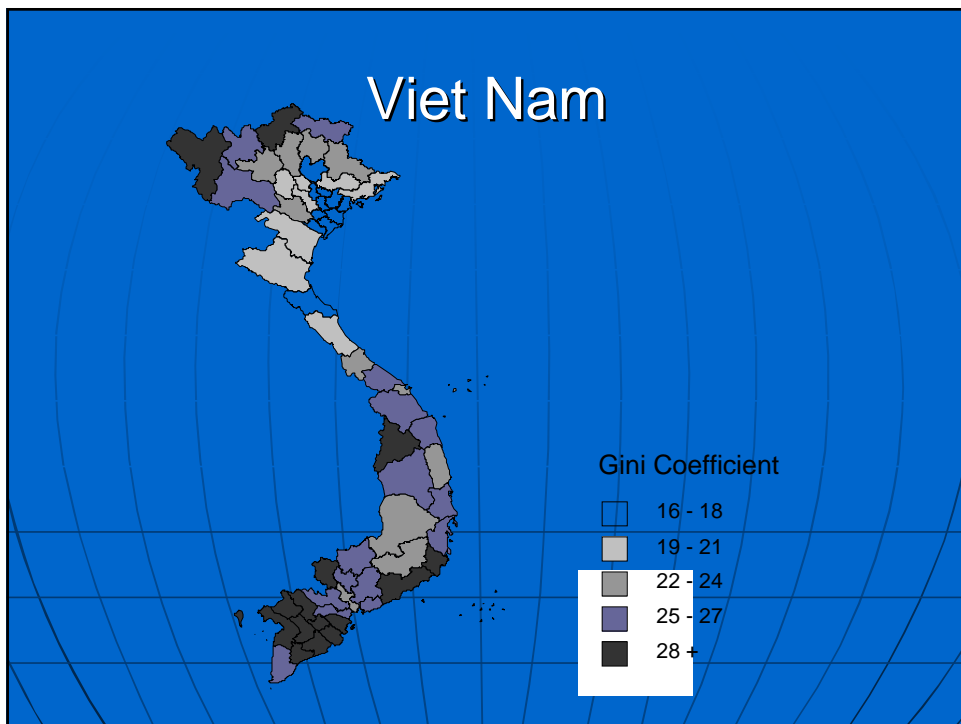
Conclusions

- The education Gini coefficient is a useful tool for examining the distribution of education in the labor force (or in student-age populations).

Conclusions

- Public policy for education should make use of the education Gini for planning and progress evaluation purposes.
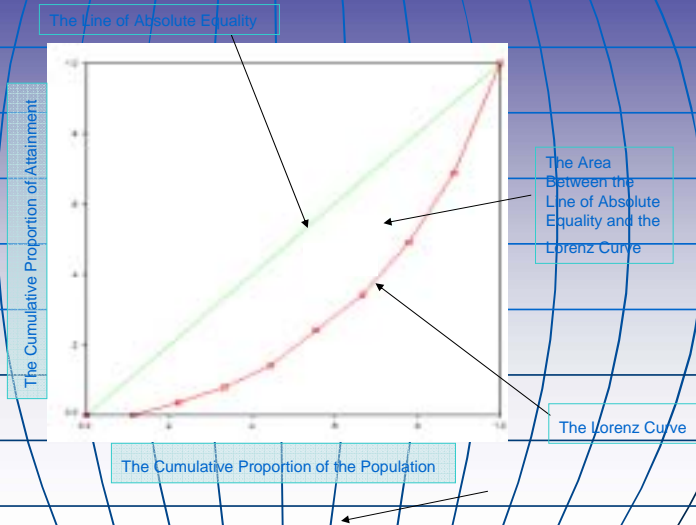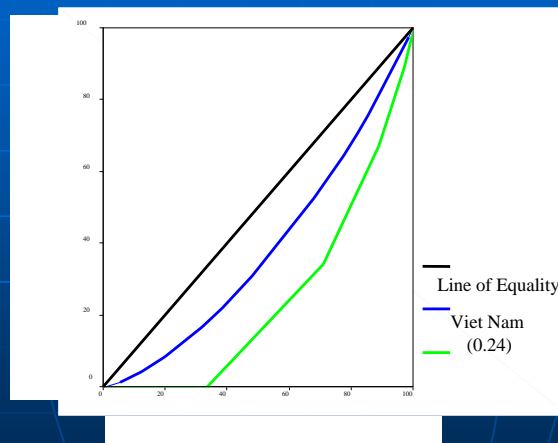
Viet Nam

The Distribution of Education in Southeast Asia and GDP per capita.

Country Name	Mean Years Schooling	Gini Coefficient	GDP per capita
Cambodia[*1]	3.29	0.51	253
Hong Kong	8.86	0.32	23095.38
Indonesia	4.6	0.41	979.86
Japan	8.98	0.25	43817.87
Korea	10.04	0.22	12174.05
Malaysia	6	0.42	4540.67
Philippines	6.93	0.33	1132.93
Singapore	5.64	0.44	26294.36
Thailand	5.48	0.39	2720.76
Viet Nam[*2]	7.34	0.24	211.18
Mean	6.716	0.353	11522.01

Lorenz curve and Gini coefficient

The Line of Absolute Equality

The Cumulative Proportion of Attainment

The Area Between the Line of Absolute Equality and the Lorenz Curve

The Lorenz Curve

The Cumulative Proportion of the Population

Comparing Viet Nam and Cambodia Lorenz curves

Line of Equality

Viet Nam

(0.24)

Education Inequality and Academic Achievement

- What impact do efforts to achieve an equal distribution of primary school completion rates have on student learning?

- This question has rarely been asked and never satisfactorily answered.

Evidence from Viet Nam

- Viet Nam presents an unusual opportunity to examine the relationship between education inequality and student learning.

- Data for the education Gini were calculated by Holsinger and students

- Achievement data came from a World Bank supported study of fifth grade math and science achievement.

Theoretical Considerations

- If by a theory we mean, for every X, if Y, then Z, we would have for every Vietnamese fifth grade student, if s/he lives is a province with an equal distribution of education, then her/his score will be higher.

- There is very little analytical work in support of this proposition.

A moderately strong relationship

- The simple bi-variate correlation is r=-.54
- It has a negative sign because of the way inequality is measured ("0" is equal and "1" is unequal)
- The correlation of -.54 means that Vietnamese provinces with high equality also have students who achieve higher exam scores.

Compare this correlation to the Human Development Index (HDI)

- The Human Development Index (HDI) is a comparative measure of life expectancy, literacy, education, and standards of living for countries worldwide. It is a standard means of measuring well-being, especially child welfare.

- A rival or alternative explanation is that provinces with high education equality are also high on the broader HDI and that this fact, not equality of the distribution of education attainment, is behind the relationship with learning achievment.

Education Gini and 5th grade achievement controlling for HDI level

Variable	Combined score	Education Gini	HDI rank province	Math score	Reading score
Combined Reading and Math Benchmark	1	-.54	-.46	1	.92
Education Gini (inequality score)	-.54	1	.40	-.54	-.62
Human Development Index provincial score	-.46	.40	1	-.46	-.48
Math Independent Benchark	1	-.54	-.46	1	.92
Reading Independent Benchmark	.92	-.62	-.48	.92	1

Equality Promotes Learning

- The results for Viet Nam are promising but we need to compare them to other countries.
- Equality of the distribution of education appears to be related to student achievement but the reasons for that relationship are still unclear.

Equality and Social Justice

- Traditionally we have argued that equal access to education opportunity is an inherent good.
- The demands of social justice, as a development objective, require efforts to equalize completion rates at the basic education level.
- Completion rates are much superior to enrollment ratios.

Education Gini

- But even primary school completion rates are averages at the country or provincial levels.
- All statistical measures of central tendency have an inherent weakness in that they cover or hide variation.
- The education Gini exposes variation in the distribution and should be routinely used to measure progress in education.