Impacts of economic variables and the corruption perception index on human development

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ABSTRACT

This study aims to find the effects of economic variables which affect the level of human development. Since increasing human well-beings, human development was become the international goal after UNDP launched Human Development Index (HDI). Many countries attempt to raise their standard of livings. But most of nations around the world are facing the corruption problem which is totally obstructs the procedure of development. Thus, the purpose of this study is to assess the impacts of economic variables and corruption on human development and to study their relationships. The data are from statistic yearbooks provided by international organizations with the sample size of 79 countries around the world and range from 2000 to 2010. The study analyzes the data using GMM estimator. The result shows that some of economic variables are significant with corruption such as tax revenue which has a positive relationship with the level of corruption, i.e. higher tax revenue leads to more corruption. Surprisingly, the increase in Human Development Index leads to higher corruption. However, corruption and economic variables do not significantly affect human development.

Keywords: Human development, Corruption, HDI, CPI, Economic
              Variables, UNDP

1. Introduction

After discovering that humans are the key factors that drive the economy forward, the country has turned to focus more on human development. Development prospects among countries have changed from a growth in numeric of GDP to focus on human development or People Centered (ul-Haq 1990, UNDP 1994).

Since the initiative by the United Nations Development Programme (UNDP) to focus on human development there have been many international development goals launched in order to raise the standard of living and reduce inequality mostly in the least developed and developing countries. Human development can raise economic growth in Southeast Asian countries (Sawatdirakpong and Osathanunkul, 2012). It might also yield better income distribution which leads to poverty reduction afterward (Techanan and Suriya, 2012; Kuson et al, 2012).

As government is an important institution for providing public goods, the basic needs for people within country, or investing for the necessary infrastructure, they require a large budget to support their projects. One source of revenue for the government is taxation. Therefore, the amount of taxes levied becomes part of the government budget. To illustrate more, if a government has a huge budget (revenue), they are able to plan policy with a great project on public investment in order to raise human welfare and standard of living (G Duff, 2004).

To recognize the chronic problem which has obstructed national development in developing country is corruption for a century. Public sector corruption is commonly defined as the misuse of public office for private gain (USAID 1999). Many empirical studied show that there is a surprised relationship between corruption and level of government spending that a huge government project which requires a lot amount of government expenditure induces more corruption (Shleifer and Vishny, 1993). This makes the real amount of money spent on that project less than the actual amount and this is the cause of the poor quality in goods and services provided by government through the citizen (Muaro 1996).

There probably are some factors that cause the failure for achieving the development goal in some countries. Thus, this research aims to study the effects on the level of human development from various causes of economic variables by including the effect of corruption. Tanzi and Davoodi (1997) founded that corruption negatively effects growth by increasing public investment while reducing productivity of the investment, increasing public investment that is not accompanied by its current expenditure, and reducing quality of existing infrastructure and finally corruption lowers government revenue used to finance productive projects. Moreover, growth effects in the role of public spending which has the corruption behind it. Corruption increases public investment, and corruption reduces the returns to public investment and has a negative impact on economic growth (Haque 2007).

According to human development structure, people can have better education and health through government investment on health care services and on public education. Thus,

government has a role to improve human capital in order to make national potential and productivity human capital and lead to economic growth outcome.

The relationship of variables in this research, there are many factors related to each other and that impact on human development. A demonstration of how a government effects human development; A government plans a good policy and creates projects to promote welfare in the society then finances expenditure through government budget which comes mainly from taxation. So lines from population to Government are flows of taxes. And the line from government to population represents government's spending in three projects of health, education, and income. Thus, the success in government projects may lead to higher quality of life, the goal of human development.

2. Theory

1) The New Growth Theory of Externalities

Romer (1986) stated that the definition of capital should include the following result from investigate that capital stock. For instance, the new innovation of product, leads to create the new capital in the form of knowledge that can be accumulate from the past. The accumulate of capital stock including knowledge cause the externalities (positive externalities) to the economic growth.

2) The New Growth Theory from Human Capital

Lucas (1988) the technological accumulate of human capital can be separated in 2 characteristics. The first one, There is no externalities from human capital accumulation. Second, there is the externalities impact from human capital accumulation.

3) The Theory of Human Capital

Human capital corresponds to any stock of knowledge or characteristics the worker has (either innate or acquired) that contributes to his or her "productivity". This definition is broad, and this has both advantages and disadvantages. The advantages are clear: it enables us to think of not only the years of schooling, but also of a variety of other characteristics as part of human capital investments. These include school quality, training, attitudes towards work, etc. Using this type of reasoning, we can make some progress towards understanding some of the differences in earnings across workers that are not accounted by schooling differences alone.

4) The Pure Theory of Public Expenditure (Paul A. Samuelson)

There is a maximal utility frontier representing the Pareto-optimal points which there are an (s-1)fold infinity, with the property that from such a frontier point you can make someone better off by making some other worse off.

Then, consider in the sense of a social welfare function which represents a consistent set of ethical preferences among all the possible states of the system. The restriction that placed on the social welfare function is that it will be increase or decrease when any one person's ordinal preference increase or decrease, all others staying on their same indifference levels.

5) Theory of Benefit Taxation (David G. Duff)

Although it is possible to discern a benefit rationale for almost any tax, including taxes on income, consumption or wealth (Tomas Hobbes, 1962), tax scholars and policy makers have found it useful to distinguish between general taxes on broad measures of each taxpayer's economic capacity and more targeted charges. The basic general definition can be defined as mandatory levies that are not related to any specific benefit or government service (Richard M. Bird, 1997), whereas benefit taxes and user fees constitute mandatory or voluntary levies imposed on persons deriving particular benefits from specific categories of publicly provided goods and services.

- Efficiency

Economic efficiency is one of the goals of tax policy and a central objective of public policy more generally. In normative principle, efficiency promotes the allocation of scare resources for the most valued uses in order to maximize aggregate welfare.

6) Corruption

Tanzi (1999) believes that the direct cause of corruption comes from the governmental control of social resources, such as the examination and approve of managerial permit, the subjective disposition made by the revenuer and the decision-making authority of the public investment item. Meanwhile, the indirect cause may be the shortcomings of civil servant evaluation system

- Humanity weakness

The saying that "Gold cannot be pure and man cannot be perfect" is a right attitude and standard of a private. In fact, the whole mankind does also it. From a view of morality, human common weakness is selfish trend, which is born and coexisted with a person's life.

- Government's control of social resource

Government is a public agency. It is to maintain social order and basic tools to protect the rights of all citizens. To achieve its functions, the government must control the part of social resources. This control ability is public power in another point. The corrupt persons no matter they are officials or other participants. Their main objective is to seek a final material or spiritual interests.

3. Literature Review

Paolo MauRo (1995) this paper analyzes about assembled data sets consisting of subjective indices of corruption, red tape, the efficiency of the judicial system and various categories of political stability for a cross section of countries.

Vito Tanzi and Hamid Davoodi (1997) they studied about corruption and public investment effect on economic growth. The corruption problem distorts the decision - making process relating to public investment projects.

Stehen J. H. Dearden (2000) this paper is the discussion about the economic costs of corruption. The result of corruption in tax evasion reduce government tax revenues but may also lead to increased government costs through the allocation of contracts to higher priced contractors.

M. Emranul Haque (2007) the study of this paper is about the growth effects in the role of public spending which has the corruption behind it. His assumption stated that, corruption increases public investment, and corruption reduces the returns to public investment and has a negative impact on economic growth.

4. Methodology
Simultaneous Equations Models

A system of linear simultaneous equations for the population can be written as:

$$y_1 = y_1\gamma_1 + z_1\delta_1 + u_1$$
$$\vdots$$
$$y_G = y_G\gamma_G + z_G\delta_G + u_G \tag{1}$$

where y_h is $1 \times G_h$, γ_h is $G_h \times 1$, z_h is $1 \times M_h$, and δ_h is $M_h \times 1$, $h = 1,2,...,G.$ These are structural equations for endogenous variables $y_1, y_2,...., y_G.$

Multiple – Equations GMM Estimator

Suppose there are m equations, the system can be written as follows:

$$y_{1i} = X'_{1,i}\delta_1 + u_{1i},$$
$$\dots$$
$$y_{mi} = X'_{m,i}\delta_m + u_{mi}$$

where for all $j = 1,...,m, \delta_j \in R^{k_j}, k_j = m_j + l_j$, and the random $l - vectorZ_t$ is such that

$$rank(EZ_i X'_{j,i}) = k_j,$$

$$EZ_i u_{ji} = 0.$$

Equivalently, the system can be re-written in the matrix notation as

$$y_1 = X_1\delta_1 + u_1,$$
$$\dots$$
$$y_m = X_m\delta_m + u_m,$$

Whereas there are two equations in the system as following model:

$$CPI_{i,t} = \beta_0 + \beta_1 HDI_{i,t} + \beta_2 EXPG_{i,t} + \beta_3 GCPF_{i,t} + \beta_4 TAXREV_{i,t} + \beta_5 GNIG_{i,t} + \varepsilon_{i,t} \tag{2}$$

$$HDI_{i,t} = \beta_6 + \beta_7 CPI_{i,t} + \beta_8 HEXG_{i,t} + \beta_9 IPSFG_{i,t} + \beta_{10} LIFE + \beta_{11} MYS_{i,t}$$
$$+ \beta_{12} RGBG_{i,t} + \beta_{13} UBPG_{i,t} + \beta_{14} UMG_{i,t} + \beta_{15} ODACG_{i,t} + \varepsilon_{i,t} \tag{3}$$

where

$CPI_{i,t}$	is Corruption Perception Index of ith
	(0 = high corruption) (10 = low corruption)
$HDI_{i,t}$	is Human Development Index of ith
	(1 = high human developed)(0 = low human developed)
$EXPG_{i,t}$	is growth rate of government expenditure of ith
$GCPF_{i,t}$	is gross capital formation of ith (% of GDP)
$TAXREV_{i,t}$	is tax revenue of ith (% of GDP)
$GNIG_{i,t}$	is growth rate of Gross National Income of ith
$HEXG_{i,t}$	is growth rate of health expenditure of ith
$IPSFG_{i,t}$	is growth rate of improved sanitation facilities of ith
$LIFE_{i,t}$	is life expectancy at birth of ith (years)
$MYS_{i,t}$	is mean years schooling of ith (years)
$RGBG_{i,t}$	is growth rate in ratio of girls boys in education of ith
$UBPG_{i,t}$	is growth rate of urban population of ith
$UMG_{i,t}$	is growth rate of unemployment of ith
$ODACG_{i,t}$	is growth rate in net Official Development Assistance per capita of ith

5. Data

HDI (Human Development Index) represents to human development (the quality of life or represent human well - being). Collected from Human Development Report which published by United Nations Development Program.

CPI (Corruption Perception Index) collected from Transparency International Corruption Perception Index.

Others economic variables are collected from World Bank (world development indicators)

And collect all data annually 10 years 2000 - 2010.

Size of the population is the selected 79 countries from around the world ranked from HDI based year 2000, starting from the highest score.

6. Results and Discussion

Accordance with equation (2) Corruption Perception index is a function of economic variables including human development represents by HDI and equation (3)

Human Development Index is a function of development indicators including Corruption which represents by CPI

The result from GMM estimator has shown in Table 1 below.

Table 1. Result from Generalized Method of Moments

Estimation: Generalized Method of Moments			
Variable	Coefficient	t-Statistic	Prob.
C	-4.522193	-3.812311	0.0002
HDI	11.44386	6.353601	0.0000
EXPG	0.014157	1.218015	0.2261
GCPF	-0.077447	-4.306269	0.0000
TAXREV	0.148709	4.731251	0.0000
GNIG	0.047164	1.781518	0.0779
C	-0.245601	-1.829417	0.0704
CPI	0.010149	2.223369	0.0285
HEXG	0.000484	0.925617	0.3569
IPSF	-0.006022	-1.98163	0.0503
LIFE	0.010424	5.149966	0.0000
MYS	0.0162	10.33827	0.0000
RGBG	-0.002109	-1.343084	0.1823
UBPG	0.003721	1.806208	0.0740
UMG	4.97E-05	0.17017	0.8652
ODACG	-2.18E-05	-1.662966	0.0995

Source: Estimation

New equation can be written as

$$CPI = -452.2193 + HDI - 7.7447GCPF + 14.8709TAXREV \qquad (4)$$

$$HDI = 1.0424LIFE + 1.62MYS \qquad (5)$$

or

$$CPI = F(HDI, GCPF, TAXREV),$$
$$HDI = F(LIFE, MYS)$$

As shown by the results, at the significance level of 0.01, the study found that HDI has a positive effect on CPI, or increase in human development trend to raise corruption. And increase in gross capital formation (formerly gross domestic investment) 1 percentage lead to a reduction in Corruption Perception Index 7.7447%. Notwithstanding, an increase in tax revenue in 1 percentage of GDP directly raise corruption in 14.8709%

However, CPI and other variable does not impact on HDI except life expectancy at birth and mean years of schooling that play role directly on human development, 1 years increase in life expectancy 1.0424% increase in HDI, and 1 years increase in mean years of schooling 1.62% increase in HDI. There are positive relationship between human development, health and education as following Theory of Human Development and following Human Development Index structure.

7. Conclusions

This study assesses the impacts of economic variables and corruption on human development and to study their relationships. The data are from statistic yearbooks provided by international organizations with the sample size of 79 countries around the world and range from 2000 to 2010. The study analyzes the data using GMM estimator. The result shows that some of economic variables are significant with corruption such as tax revenue which has a positive relationship with the level of corruption, i.e. higher tax revenue leads to more corruption. Surprisingly, the increase in Human Development Index leads to higher corruption. However, corruption and economic variables do not significantly affect human development.

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