Growth or development: experience from Latin America

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by

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Abstract

The purposes of this study were to present the current situation of poverty, economic growth, and economic development for five selected countries in Latin America and to examine the relationship between poverty, economic growth, and economic development through traditional log-linear regression model for panel data analysis. The result from fixed effect model suggested that economic development is more effective and preferable than economic growth in eradicating of poverty. Policy issued aimed at raising citizen's living standard should shed on income, health, and education simultaneously instead of standard improvement in income level merely.

Introduction

Even though economic growth was founded by Dreze & Sen (1990) to have no automatic force in improving health and education level, it was still recognized as the main tool in reducing poverty (Adams, 2003). However, the problem called "Growth without Development" has recently prevailed in Bangladesh and Brazil. Their Gross Domestic Product (GDP) was impressively high relative to other countries but people, by majority, were still deprived in health, lived in bad environment, and unable to read and write. Moreover, this problem occurred in Oil-exporting countries, for example, Iran or Dubai. Top-quintile people enjoyed their increasing sales (revenue) accrued from their asset while living standard among the rest (bottom-quintile) were relatively low. Of course, income inequality was the main culprit. Unfortunately, there were no effective tools ever to solve this problem. Every strategies were likely to undermine the social cohesion on and off, especially the populism policies aimed at winning representative election, for example, Thailand.

For stylized device, economic growth itself was the problem. It was always measured from Gross Domestic Product (GDP) proposed by Kuznet (1934). However, this indicator told us nothing about the distribution among population (Stiglitz, 2009). GDP was normally low in developing countries due to uncountable commodities which lead to the problem of underestimation. Also, this monetary indicator could not explain some countries that money was not accepted as general. For example, you argued that people spent less than $2 a day were the poor. However, supposed he or she had her own land for planting her rice, wheat, or did small farm. He or she needed spent zero dollar but he or she could sustain his or her life and family. Should he or she was defined as the poor? Of course, happiness was another new concern. GDP really told welfare level of individuals. It is only the barometer of economic performance, rough and over-and-under estimating.

To the extent of economic growth, the United Nations Development Programme (UNDP) was, in 1990, issued the new indicator measured income, health, and education together so called Human Development Index (HDI). It gave us more clear and broad picture about economic condition in nation. Unfortunately, the different ranking in GDP and HDI was critical. Some countries enjoy their top twenty nation of GDP but medium score of HDI. For research question, what is the most effective tool in eradicating of poverty between economic growth measured by GDP or economic development measured by HDI?. For case study in consideration, countries from Latin America were selected due to their emerging economic performance and outstanding deprivation.

Literature Review

The relationship between economic growth and economic development was widely accepted as Growth Elasticity of Poverty (GEP). GEP was derived through the log-linear model. Dependent variable was poverty headcount ratio while independent variable or regressor was economic growth measured by GDP per capita. GEP was firstly derived by Squire (1993). It was developed further by Ravallion & Chen (1996), Kalwij & Verschoor (2004). Income inequality was also taken into account by Kakwani (1993), Ravallion (2001), Son & Kakwani (2004), Suryadarma, Artha, Suryahadi, & Sumarto (2005), Jamal (2006), Techanan & Suriya (2012). Political pattern and economic crisis were included through the paper of Perrotta (2007) and Takeda (2009), respectively. Besides poverty headcount ratio, poverty gap was also considered by Ferreira, Leite, & Ravallion (2007). In addition, even though econometric method was widespread implemented to derived growth elasticity of poverty, direct estimation was also used by Adigun, Awoyemi, & Omonona (2011) and Ram

(2012). For HDI, it was founded by Fruin, Peneva, and Ram (2013) that an increase in income yielded positively impact an improvement in HDI.

Objective

There are two main purposes of this study including to review/display the situation of poverty, economic growth, and economic development in 5 selected countries in Latin America and to estimate economic growth elasticity of poverty (GEP) and economic development elasticity of poverty (DEP).

Methodology

There are 5 selected countries in Latin America including Dominican Republic, Ecuador, El Salvador, Peru, and Venezuela. Strong balanced panel data was ranged between 2005 to 2012. Human Development Index (HDI) was collected from UNDP. Poverty headcount ratio at national poverty line was collected from the World Bank.

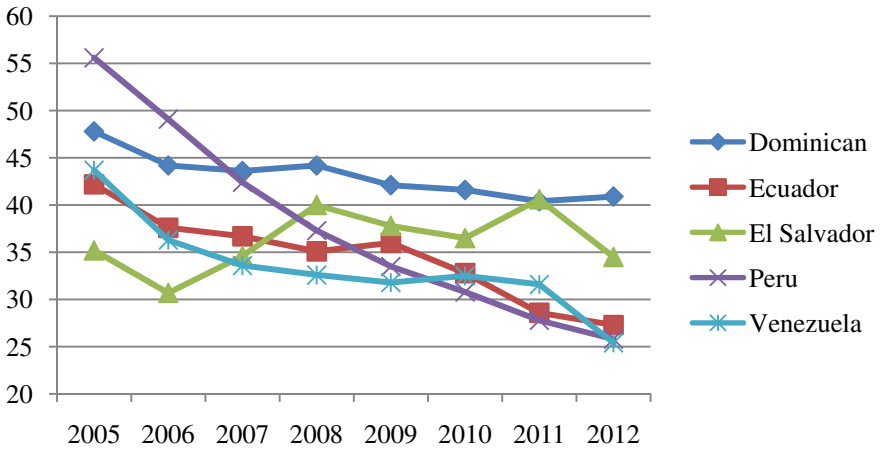
For the first objective, the data was described by mean and percentage change. For the latter, log-linear regression model was implemented to estimate the relationship. There are two basic methodologies in analyzing balanced panel data including stationary test (Unit Root Test) and regression model (Fixed Effect (FE), Random Effect (RE), and Pooled OLS). There are many tests for panel data including Fisher, Levin-Lin-Chu (LLC), Im-Pesaran-Shin (Ipshin), Hadri, and etc. For regression, Hausman Test will be implemented for selecting between FE or RE. Breusch-Pagan Lagrange Multiplier test will be implemented for selecting between RE and Pooled OLS.

After considering the most proper model, the problem of Autocorrelation and Heteroskedasticity will be test for avoiding the problem of result's overestimation. If autocorrelation occurs, cluster will be optioned while the problem of Heteroskedasticity will be corrected through robust distribution.

Results

Situation of poverty among five selected countries from 2005 to 2012 measured by each national poverty line is shown by figure 1.

Figure 1: Situation of poverty



Source: World Bank

Figure 1 shows the situation of poverty measured by national poverty line in five selected countries. Almost all countries enjoyed a decrease in poverty. However, there is a period that poverty is undermined, for example, El Salvador between 2006 and 2008, Ecuador between 2008 to 2009. The sharp decreasing trend is Peru which poverty decreased by 54 percent which means that the living standard in Peru was raised. Poverty in Venezuela also reduced from 47.3 percent in 2005 to 25.4 percent in 2012 which make Venezuela enjoy the lowest poverty rate. The poverty rate is shown by table 1.

Table 1: Poverty rate in each country (percent of total population)

Country	2005	2006	2007	2008	2009	2010	2011	2012	% △ 2005 - 2012
Dominican	47.8	44.2	43.6	44.2	42.1	41.6	40.4	40.9	-14.44
Ecuador	42.2	37.6	36.7	35.1	36	32.8	28.6	27.3	-35.31
El Salvador	35.2	30.7	34.6	40	37.8	36.5	40.6	34.5	-1.99
Peru	55.6	49.1	42.4	37.3	33.5	30.8	27.8	25.8	-53.59
Venezuela	43.7	36.3	33.6	32.6	31.8	32.5	31.6	25.4	-41.88

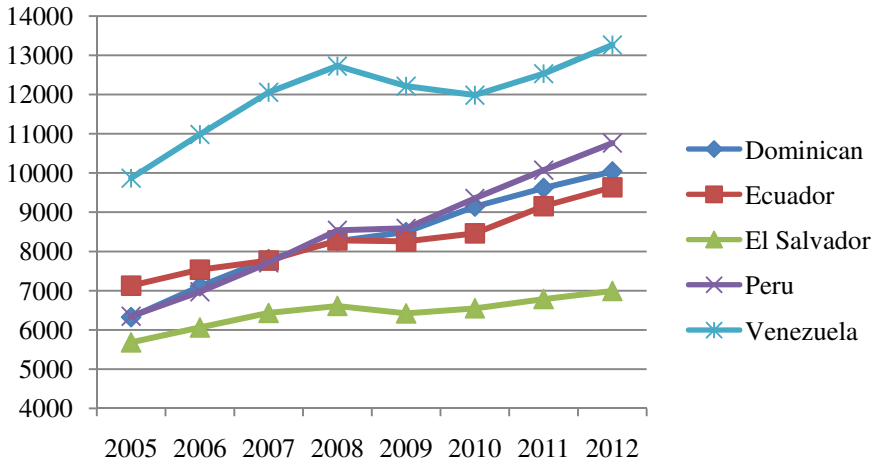
Source: World Bank

According to table 1, Peru enjoyed the highest decrease in poverty and it was followed by Venezuela and Ecuador. For Venezuela, poverty was decreased dramatically between 2005 to 2007 with 10 percent decreased. Poverty rate in Peru between 2006 to 2007 was decreased about 7 percent. However, there is some interesting thing to avoid misleading about the result. This kind of poverty was measured by national poverty line which was typically calculated from an average income level. If the country has only small economic growth measured by GDP, of course poverty line tend to rise. Supposed income inequality happens which means that the top quintile people merely are those who enjoy national prosperity while the bottom quintile people get the same level of income, poverty rate measured by national poverty line tend to be lower. This situation can be occurred in case

that there are many different group of people enjoy economic growth and they together leave some group of people behind this glory. However, if there is only one group of people whose income dramatically rises, poverty rate measured by national poverty line will be higher. In addition, this type of poverty rate can be used to compare only the change in poverty rate. Due to the different poverty line, it should not be used to compare the value among countries in consideration. For example, due to a higher level of income, by average, in Venezuela, if poverty in El Salvador is measured by Venezuela's poverty line, poverty rate in El Salvador may be increasing to 60% or more. Or if poverty in Venezuela is measured by El Salvador's poverty rate, poverty in Venezuela may be lower to only 10% or less.

Situation of economic growth measure by per capita GDP is shown by figure 2.

Figure 2: Situation of economic growth



Source: World Bank

Figure 2 shows economic growth among five selected countries from 2005 to 2012. Almost all countries enjoyed an increase in per capita GDP which can be expected an improvement in citizen's living standard. For the economic crisis originated in the U.S. in 2008, the infected syndrome was welcomed by many countries in consideration. GDP between 2008 to 2009 decreased in El Salvador, Venezuela and Ecuador. Dominican's GDP was seemed not to be affected by this crisis. Even though Ecuador's GDP did not decrease in that period but this crisis is likely to retard the pace of economic growth. Table 2 shows the per capita GDP for these five countries.

Table2: Per capita GDP (U.S. Dollar)

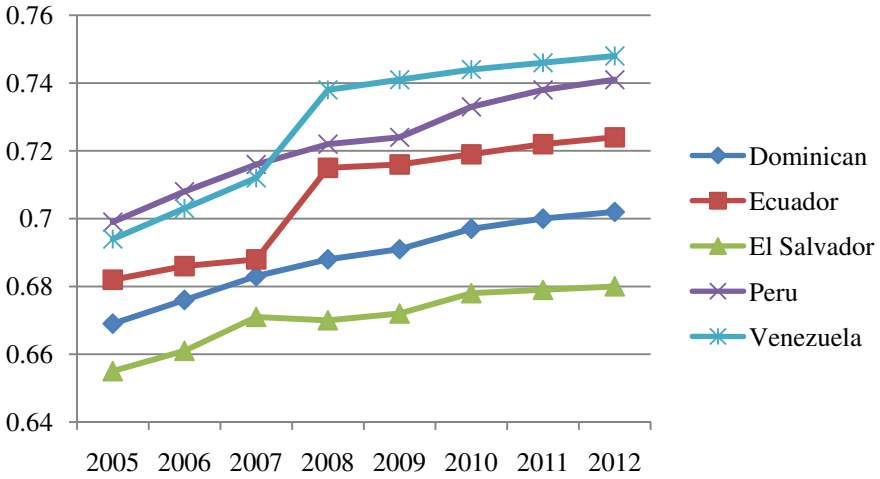
	Dominican	Ecuador	El Salvador	Peru	Venezuela
2005	6326.357	7128.62	5681.51	6349.06	9869.17
2006	7113.218	7536.55	6061.14	6973.46	10985.68
2007	7808.984	7770.30	6433.20	7711.48	12058.15
2008	8263.779	8284.05	6611.32	8540.03	12728.82
2009	8498.162	8256.27	6420.39	8592.48	12215.04
2010	9145.094	8462.67	6550.02	9354.80	11985.84
2011	9617.132	9155.14	6785.20	10075.84	12534.27
2012	10038.06	9637.08	6991.04	10765.40	13266.67
%△	58.67	35.19	23.05	69.56	34.43

Source: World Bank

Table 2 displays per capita GDP in all five selected countries from 2005 to 2012. The highest value of per capita GDP is Venezuela while the lowest value of per capita GDP is El Salvador. For the percentage change, Peru enjoyed the highest economic growth with almost 70 percent increased while there was only 23.05 percent increased for El Salvador.

Situation of economic development measured by HDI is shown by figure 3.

Figure 3: Situation of HDI



Source: UNDP

Figure 3 shows the situation of HDI in all five selected countries located in Latin America from 2005 to 2012. Almost all countries enjoyed an improvement in human development. However, HDI was decreased in El Salvador in the period of 2007 to 2008 by 0.001. In this period, poverty in El Salvador increased referred that a low quality of health, education, and income together causes the degradation of citizen's living standard. The sharp trend of HDI is Venezuela which HDI was dramatically increase from 2007 to 2008. In

addition, in initial period (2005 to 2007), Dominican's HDI was likely to be relatively highest among this selected group. However, with a critical improvement in Venezuela, its HDI outpaced Dominican and became the highest HDI country. Soon, Peru's HDI may outpace Dominican for the next two or three years if the situation of HDI in Dominican is still too much serene. The value of HDI is shown by table 3.

Table 3 Human Development Index (HDI)

Country	2005	2006	2007	2008	2009	2010	2011	2012	△
Dominican	0.669	0.676	0.683	0.688	0.691	0.697	0.7	0.702	0.033
Ecuador	0.682	0.686	0.688	0.715	0.716	0.719	0.722	0.724	0.042
El Salvador	0.655	0.661	0.671	0.67	0.672	0.678	0.679	0.68	0.025
Peru	0.699	0.708	0.716	0.722	0.724	0.733	0.738	0.741	0.042
Venezuela	0.694	0.703	0.712	0.738	0.741	0.744	0.746	0.748	0.054

Source: UNDP

According to table 3, HDI was increased the most by in Venezuela and it was followed by Ecuador and Peru. HDI was increased by small unit in Dominican which HDI was highest in 2005 to 2009. A small improvement in HDI in Dominican may not be enough to sustain the leader of nation's development among this selected group of country. What was required for Dominican may be to create new policy to encourage economic development or to revise or reconsider the current economic development plan aimed at fitting with the situation.

After displaying the situation of poverty, economic growth, and economic development in all selected countries, the next result was the relationship among this variable through log-linear regression model. First and the foremost, Stationary test was implemented. The Unitroot test, due to seemingly narrow time range (only 8 years) in 5 countries, the result from stationary was different. For Fisher, poverty rate and HDI were stationary at 95% lag (0), and GDP was stationary at 90% lag(0). For LLC, poverty rate and GDP was stationary at 95% lag(1) and HDI was stationary at 95% at lag 0. For Ipshin, poverty rate was not stationary at any level, HDI and GDP were stationary at 95% lag (2. Even though the results from all tests are not in the same direct but Fisher, for this study, was selected at 90% due to small time range.

After stationary test, the next is to estimate the GEP and DEP. The result of GEP and DEP for five countries is shown in table 4.

Table 4: The elasticity of poverty to growth and development

	FE
logGDP	-1.0251**
logHDI	-5.2079***

Source: Author's own calculation

Note: ** p<0.05, *** p<0.01

Table 4 shows the GEP and DEP in Latin America. The problem of heteroskedasticity and autocorrelation was treated already by cluster which means that this coefficient was not overestimated. With Hausman test, both model was more proper in using FE instead of RE or pooled OLS. The results suggests that GEP is -1.0251 which means that an increase in GDP by 1 percent can lead to a decrease in poverty by 1.0251 percent or a decrease in GDP by 1 percent can lead to an increase in poverty by 1.0251 percent. The R-squared was 64.71%. On the other hand, DEP is -5.2079 which means that an increase in HDI by 1 percent can lead to a decrease in poverty by 5.2079 percent or a decrease in HDI by 1 percent can lead to an increase in poverty by 5.2079 percent.

Conclusion and policy suggestion

For five selected countries in Latin America, all enjoyed an output expansion. Poverty was dramatically reduced in all regions, especially in Peru which poverty was reduced by 54 percent in only 8 years in consideration. It was followed by Venezuela with 42 percent reduction. While in El Salvador, the situation of poverty was worse off due to an increase in poverty from 30.7 percent in 2006 to 40.6 percent in 2011 (almost 10 percent of population). For the case of El Salvador, there is an increasing concern. In the period of an increasing poverty, per capita GDP was increased but HDI from 2007 to 2008 was decreased. It gives us some ground that poverty moves in the same tone with human development while it is uncertain for economic growth. Even though economic growth occurs, people can be poorer. For the poverty measured by national poverty line, a higher income on average may be borne by the rich in society (the top quintile people). Society has left the poor behind the national prosperity. Then, income inequality may be undermined in El Salvador. According to the data from World Bank database, Gini Index for El Salvador in 2006 was 46.19 and increased to 46.97 in 2007 and 48.33 in 2009. It is reasonably correspondent to what I've explained about the scenario in El Salvador. It was concluded that income inequality can be another factor which affects GEP and DEP.

For HDI, there was a small change in this indicator for all countries. The highest improvement in HDI is Venezuela with 0.054 unit increased. It was followed by Ecuador and Peru with 0.042 unit increased. The lowest increase in HDI is El Salvador with 0.025 unit improved. However, Peru is the second highest value of HDI among five selected countries followed Venezuela. The lowest value of HDI is El Salvador that HDI is equal to 0.68 unit. For economic growth, a growth was highest in Peru and followed by Dominican and Ecuador. With the value of per capita GDP, the highest per capita GDP was Venezuela while the lowest per capita GDP was El Salvador.

The experience in poverty, economic growth, and economic development empirically revealed that economic development is more effective in reducing poverty. To eradicate of poverty requires an increase in income level and an improvement in human capital including health and education. Income level among citizens can increase from effective level of minimum wage (different in each country dependent on economic condition). Job training can make people more productive which refers to an increase in income (basic macroeconomic concept).Healthy and literate labor can enjoy a higher return for his or her force. He or she can work longer a day or learn new innovation/technology that make him or her competitive to unhealthy and illiterate worker. Healthy and education system should be reformed as well to be universal which refers to free access for all kind of individuals. With the concept of welfare state, universal health and education system requires a lot of revenue and effective administration (revenue collection and distribution) which can be used to finance many welfare programs and government can collect revenue through a highly

progressive tax. A reform in individual/personal income tax is thus unavoidable. However, most in developing country, the problem of corruption always causes derailment in national prosperity. Population normally do not trust government to allocate their sacrificed income. The duty of government in this group of country is to create trustful environment to make administration more credible.

Also, education system should be aimed at poor student which lack of access to standard program. Well-trained teachers should be provided to children lived in rural area or the indigent. The main duty of teacher should be to study, not make any statement to committee for school quality measurement. To distribute teacher among many state is also important because new teacher may prefer to stay in town instead of rural area which causes the unequal quality between institutions. In addition, health system should be recognized as development priority. The old, disabled, and HIV infected should be subsidized in medical treatment. New graduated medical student should be distributed to rural area because there is a case that the number of doctor is insufficient with the caseload. R&D in developing countries should be financed or supported by international agencies, for example WHO or more developed country aimed at reducing cost of imported medicine. When the form of development (income, health, and education) are well organized, national improvement will be beyond basic growth, to development and the pace of development will shed light on zero percent poor society.

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