Economic Growth and Income Inequality: Empirical Evidence from North African Countries

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Abstract

This paper examines the empirical relationship between economic growth and income inequality for 3 countries of North Africa (Tunisia, Morocco and Egypt) over the period 1970-2004. The results of this paper indicate that the long-run growth elasticity of income inequality is negative and significant implying that keeping other factors constant; more income inequality reduces economic growth. Moreover, this paper finds evidence that more physical and human capital investment and higher openness to trade have statistically significant impact on enhancing economic growth and reducing poverty.

Keywords: Economic Growth, Income Inequality, Panel cointegration

JEL Classification: O4, I3, O15

Introduction

Economic growth is considered to be a powerful force for reducing poverty. High and sustained economic growth increases the labor demand and wages which in return will reduce poverty. Similarly, better earnings as a result of reduction in poverty lead to increase productivity and growth. But the extent of poverty reduction as a result of economic growth depends on how the distribution of income changes with economic growth and on initial Inequalities in income. If income inequality increases, then economic growth does not lead to a significant poverty reduction.

A large number of empirical studies have attempted to explore the relationship between income inequality and economic growth. But there are only few studies that discuss the role of credit market imperfections in growth inequality relationship. Most of earlier studies that highlight the role of credit market imperfections in growth inequality relationship used Ordinary Least Squares to estimate the cross-country growth regression, which has a problem of omitted variable bias. Secondly, due to limited availability of comparable inequality statistics, sample selection remained a problem in most of earlier studies. The resulting estimates of most of these studies found a negative coefficient on inequality suggested that countries with a more equal income distribution (that is a lower Gini index) tend to have higher levels of income.

No country has achieved rapid economic growth by closing themselves off to international trade. Trade openness is defined as the degree to which foreigners and domestic citizen can transact without government imposed costs that are levied on a transaction between them. For example, tariff, non tariff

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Kuznets’ hypothesis. Kaldor (1957) and Pasinetti (1962) assumed that income inequality affected economic growth through the saving-investment mechanism. Because individuals with different income levels will choose different savings rate, the income inequality leads the agent to increase the savings and investment, which in turn increases the growth rate.

Deininger and Squire (1996) using the data for 108 countries over the period 1960-1974 found no systematic relationship between growth and changes in aggregate inequality. According to their analysis, periods of aggregate growth were associated with increased inequality in forty-three cases and with a decrease in inequality in forty-five cases. Similarly, periods of economic decline were associated with increased inequality in five cases and with a more equitable distribution of income in two cases. The simple relationship between current as well as lagged income growth and the change in the Gini coefficient is insignificant for the whole sample as well as for sub samples defined in terms of country characteristics like rich or poor, equal or unequal, fast-growing or slow-growing economies, suggesting no strong relationship between growth and changes in aggregate inequality.

Deininger and Squire (1998) use new cross-country data on income and asset (land) distribution to show that (i) there is a strong negative relationship between initial inequality in the asset distribution and long-term growth, (ii) inequality reduces income growth for the poor, but not for the rich, and (iii) available longitudinal data provide little support for the Kuznets hypothesis. Policies that increase aggregate investment and facilitate acquisition of assets by the poor might thus be doubly beneficial for growth and poverty reduction.

Forbes (2000) found positive effects of income inequality on growth. The author argued that country-specific effects and omitted variables are the cause of a significant negative bias in the estimations of the effects of inequality on growth. She also concluded that fixed-effect estimations yield the consistent result of a
positive short and medium term correlation between inequality and growth.

Smith (2001), examined empirically two hypotheses – subsistence consumption and credit market imperfections – of specific channels of inequality to affect private saving rates, he found that there is econometric evidence that especially at low per capita income levels, income inequality may be associated with higher aggregate saving. Garbis (2005) examines the empirical relationship between inequality and growth, and analyzes the impacts of growth, inequality, and government spending on poverty reduction. A panel dataset for 82 countries for the period 1965–2003 has been assembled with the data averaged over periods of three to seven years, depending on the availability of inequality and poverty data. The empirical results challenge the belief that income inequality has a negative effect on growth and confirm the validity of the Kuznets curve. Credit market imperfections in low and medium-income countries are identified as the likely reason for the positive link between inequality and growth over the short to medium term. In the long term, inequality may have an adverse impact on growth.

In a neoclassical growth framework with a typical political-economy mechanism, Yin and al. (2006) reexamines the relationship between the income inequality and economic growth by introducing government spending into the production function and the utility function. It demonstrates that Kuznets’ famous inverted-U shape relationship between inequality and economic growth will hold - the growth rate will be first increasing with the income inequality before the growth rate decreases with inequality.

Penalosa and Turnovsky (2006) develop an endogenous growth model with elastic labor supply, in which agents differ in their initial endowments of physical capital. In this framework, the growth rate and the distribution of income are jointly determined. The key equilibrating variable is the equilibrium labor supply. It determines the rate of return to capital, which in turn affects both the rate of capital accumulation and the distribution of income across agents. Then they examine the impact of various structural shocks on growth and distribution. They found that faster growth is associated with a more unequal, contemporaneous distribution of income, consistent with recent empirical findings.

The results could be summarized in three points. First, initial inequality in the distribution of land appears to be associated with lower subsequent growth. Second, there is no support for a redistributive median-voter based explanation of initial inequality's effect on growth. Third, imperfections in financial markets for credit appear to be more relevant for investment in human capital rather than physical capital. However, data on land inequality was very limited and it could not be used in the panel data model to check if cross sectional results hold after controlling for omitted variable bias.

Role of Credit Market Imperfections
The income approach emphasizes the effect of income inequality on savings and on physical capital accumulation. Credit market imperfections approach considers the effect of income inequality on the accumulation of human capital (Galor and Zeira, 1993). In a model by Galor and Moav (2004), the engine of economic growth changes from physical capital to physical and human capital in the process of economic development. The process of economic development is divided into two regimes, which have their own steady-state growth paths.

Economies in the first regime are underdeveloped, aggregate physical capital is small, and the rate of return to human capital is lower than the rate of return to physical capital (Galor and Moav, 2004). There are two types of individuals in the economy: those who own the physical capital (the rich) and those who do not (the poor). The poor consume their entire income (wages) and are not engaged in saving and on capital accumulation. Thus, there is temporary steady-state equilibrium where the poor are in poverty trap and the rich get richer. Inequality increases aggregate savings by increasing the income of the rich and greater
In modern less developed economies, it is possible that also human capital drives growth, if the capital and skill-biased technology is imported. In this case, the effect of inequality on growth would be mixed or negative (Galor and Moav, 2004).
income inequality affects growth rates. Kaldor (1957) suggests that marginal propensity to save of the rich is higher than that of the poor, implying that that a higher degree of inequality will yield higher aggregate savings, higher capital accumulation and growth. In contrast, Persson and Tabellini (1994) and Alesina and Rodrick (1994) emphasize the four main channels through which income inequality lowers growth rates. First, the impact of inequality on encouraging rent-seeking activities that reduce the security of property rights, second, unequal societies face more difficulties in collective action possibly reflected in political instability, a propensity for populist redistributive policies, or greater volatility in policies - all of which can lower growth, third, the median voter in a more unequal society is relatively poorer and favors a higher (and thus more inefficient) tax burden, fourth, to the extent that inequality in income or assets coexists with imperfect credit markets, poorer people may be unable to invest in their human and physical capital, with adverse consequences for long-run growth.

Galor and Zeira (1993) argued that income distribution plays an important role in the determination of aggregate economic activity and economic growth. In contrast to the representative agent approach that has dominated the field of macroeconomics for several decades, this study analyzes the role of heterogeneity in the determination of macroeconomic behavior. The research demonstrated that in the presence of capital markets imperfections and local non-convexities in the production of human capital, income distribution affects aggregate output in the long run as well as in the short-run. The research developed the hypothesis that equality in sufficiently wealthy economies stimulates investment in human capital and in (individual specific projects) and enhances economic growth, whereas inequality promotes growth in a sufficiently poor economies, a prediction that was confirmed by initial empirical studies.

Galor's (2000) argues that the classical approach holds at low-income levels but not at later stages of development. In the early stage of development, inequality would promote growth because physical capital is scarce at this stage and its accumulation requires saving. Inequality in income would then result in higher savings and rapid growth. In later stages of economic development, however, as the return to human capital increases owing to capital-skill complementarily, human capital becomes the main engine of growth. Credit constraints, however, become less binding as wages increase, and the adverse effect of income inequality on human capital accumulation subsides, and thus the effect of inequality on the growth process becomes insignificant.

The unified approach complements the research of Galor and Weil (1999, 2000) who developed unified models that encompasses the transition between three distinct regimes that have characterized the process of economic development: the Malthusian Regime, the Post-Malthusian Regime, and the Modern Growth Regime, focusing on the historical evolution of the relationship between population growth, technological change, and economic growth.

Galor and Moav (1999) argue that inequality has a positive effect on capital accumulation but negative effect on human capital accumulation in the presence of credit constraints. In the early stages of development physical capital is scarce, the rate of return to human capital is lower than the return on physical capital and the process of further development is driven mainly by capital accumulation. In the early stages of development, the positive effect of inequality on aggregate saving more than offsets the negative effect on investment in human capital and, since the marginal propensity to save is an increasing function of the individual's wealth, inequality increases aggregate savings and capital accumulation, enhancing the process of development. In the later stages of development, however, the positive effect of inequality on saving is offset by the negative effect on investment in human capital.

Based on theoretical literature on economic inequalities and some other potential factors that determine economic growth, we develop the following model, which is also in lines with Garbis (2005).
\[ GR_{i,t} = \beta_1 GINI_{i,t} + \beta_2 y_{i,t-1} + \beta_3 INV_{i,t} + \beta_4 SCH + \beta_5 TRADE_{i,t} + \mu_t + \eta_i + \varepsilon_{i,t} \]

(1)

Where:

- \( GR \) = Growth rate of GDP per capita,
- \( GINI \) = Gini index in the current period,
- \( y_{i,t-1} \) = Initial GDP per capita,
- \( INV_{i,t} \) = Gross fixed capital formation as a % of GDP,
- \( SCH_{i,t} \) = Secondary school enrolment rate,
- \( TRADE \) = Sum of exports and imports of goods and services as a % of GDP,
- \( \eta_i \) represents unobserved country-specific factors and \( \mu_t \) is a period specific effect.

\( \varepsilon_{i,t} \) represents the disturbance term.

Data
We use Gini coefficient to measure income inequality, which is one of the most popular representations of income inequality. It is based on Lorenz Curve, which plots the share of population against the share of income received and has a minimum value of 0 (case of perfect equality) and maximum value of 1 (perfect inequality). Missing values in Income inequality data are the major problem in cross country analysis. Many of developing countries have only one or two observations. Therefore, we expanded the existing database by including the comparable data on poverty and inequality from recent household surveys included in World Bank, IMF Staff reports and Poverty Reduction Strategy Papers.

The human capital indicator measured by secondary school enrolment rate (SCH) and the other independent variables - the GDP per capita, the physical capital (INV), the openness rate (TRADE) and the growth rate of GDP per capita (GR) - are taken from the World Bank Development Indicators (WDI, 2009).

Unit Root Testing
To test for the presence of unit roots on panel data, we use the Im, Pesaran and Shin (2003) - IPS thereafter. IPS using the likelihood framework, suggest a new more flexible and computationally simple unit root testing procedure for panels (which is referred as \( t – bar \) statistic), that allows for simultaneous stationary and non-stationary series. Moreover, this test allows for residual serial correlation and heterogeneity of the dynamics and error variances across groups. The IPS test is based on the estimation of the following equation:

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\[ 4 \] Bénabou (2005) has actually suggested that endogeneity of income inequality in growth regressions is the primary reason for the observed controversy in empirical growth studies.
\[ \Delta y_{it} = \rho_i y_{i,t-1} + \alpha_{m,t} d_{m,t} + \sum_{j=1}^{p} \lambda_{i,j} \Delta y_{i,j-1} + \varepsilon_{i,t} \]

where \( T \) is the number of observations over time, \( N \) denotes the number of individual members in the panel and \( d_{m,t} \) contains deterministic variables. The null hypothesis is defined as \( H_0: \rho_i = 0 \) for all \( i = 1, ..., N \) and the alternative hypothesis is \( H_a: \rho_i < 0 \) for \( i = 1, ..., N_1 \) and \( \rho_i = 0 \) for \( i = N_1 + 1, ..., N \), with \( 0 < N_1 \leq N \) that allows for some (but not all) of individual series to have unit roots.

IPS (2003) compute separate unit root test for the \( N \) cross-section units and define their \( t-bar \) statistic as a simple average of the individual ADF statistics, \( t_{it} \), for the null as:

\[ t-bar = \frac{1}{N} \sum_{i=1}^{N} t_{it} \]  

IPS (2003) argues that \( t_{it} \) are i.i.d. and have finite mean and variance.

Therefore, the standardized \( t-bar_{N,T} \) statistic converges to a standard normal distribution as \( N \to \infty \) under the null hypothesis. In order to propose a standardization of the \( t-bar_{N,T} \) statistic, the values of the mean and the variance have been computed via Monte Carlo methods for different values of \( T \) and \( p_i \)'s and tabulated by IPS (2003). The results of each one of our five variables are reported in table 1, where all the tests have a unit root under the null hypothesis.

As indicated in table 1, the tests of panel unit root of according to IPS (2003) confirm that all variables are no stationary in levels but stationary in first differences. We now test for the existence of a long-run relationship between the income inequality and economic growth.

**Cointegration Tests**

The possible cointegration between inequality and GDP is tested with panel cointegration test developed by Pedroni (1999, 2004). Pedroni proposes a residual-based test for the null of cointegration for dynamic panels with multiple regressors in which the short-run dynamics and the long-run slope coefficients are permitted to be heterogeneous across individuals. The test allows for individual heterogeneous fixed effects and trend terms and no exogeneity requirements are imposed on the regressors on the cointegrating regressions.

Specially, the tests ask for the residuals estimation from static cointegrating long-run relation for a time series panel of observables \( y_{it} \):

\[ y_{it} = \alpha_i + \delta_i t + \beta_{1,i} x_{1,it} + \beta_{2,i} x_{2,it} + \ldots + \beta_{K,i} x_{K,it} + \varepsilon_{it} \]

where as usual \( T \) is the number of observations over time and \( N \) is the number of units in the panel. It is possible to interpret the model (3) as \( N \) different equations, each of which has \( K \) regressors. The variables \( y_{it} \) and \( x_{it} \) are assumed to be I(1), for each member \( i \) of the panel, and under the null of no cointegration the residual \( \varepsilon_{it} \) will also be I(1). \( \alpha_i \) and \( \delta_i \) are scalars denoting fixed effects and unit-specific linear trend parameters, respectively and \( \beta_{ij} \) are the cointegration slopes; note that all this coefficients are permitted to vary across individuals, so that considerable heterogeneity is allowed by this specification.

Pedroni considers the use of seven residual-based panel cointegration statistics, four based on pooling the data along the within-dimension (denoted ‘panel cointegration statistics’) and three based on pooling along the between-dimension (denoted ‘group mean cointegration statistics’).

Another distinction between the two sets of test is based on the alternative hypothesis specification. In fact, even if both sets of test

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verify the null hypothesis of no cointegration: \( H_0 : \rho_i = 1 \quad \forall i \) where \( \rho_i \) is the autoregressive coefficient of estimated residuals under the alternative hypothesis \( (\hat{e}_{i,t} = \rho_i \hat{e}_{i,t-1} + v_{i,t}) \), alternative hypothesis specification is different:

- the panel cointegration statistics impose a common coefficient under the alternative hypothesis which results: \( H^w_a : \rho_i = \rho < 1 \), \( \forall i \) - the group mean cointegration statistics allow for heterogeneous coefficients under the alternative hypothesis and it results: \( H^b_a : \rho_i < 1 \quad \forall i \).

It is straightforward to observe that the first category of four statistics includes a type of non-parametric variance ratio statistic, a panel version of a non-parametric Phillips and Perron (1988) \( \rho \) -statistic, a non-parametric form of the average of the Phillips and Perron \( t \) -statistic and an \( ADF \) type \( t \) -statistic.

The second category of panel cointegration statistics is based on a group mean approach and includes a Phillips and Perron type \( \rho \) -statistic, a Phillips and Perron type \( t \) -statistic and an \( ADF \) type \( t \) -statistic. The comparative advantage of each of these statistics will depend on the underlying data-generating process.

After the calculation of the panel cointegration test statistics the appropriate mean and variance adjustment terms are applied, so that the test statistics are asymptotically standard normally distributed:

\[
\frac{\chi_{N,T} - \mu \sqrt{N}}{\sqrt{V}} \Rightarrow N(0,1)
\]

where \( \chi_{N,T} \) is one of the seven statistics of Pedroni, \( \mu \) and \( V \) are the functions of moments of the underlying Brownian motion functional. The appropriate mean and variance adjustment terms for different number of regressors and different panel cointegration test statistics are given in Table 2 in Pedroni (1999).

Pedroni (2004) explored finite sample performances of the seven statistics. He showed that in terms of power all the proposed statistics do fairly well for \( T > 100 \). Moreover Pedroni’s (1996) simulations showed that for small time span \( (T < 20) \), the between dimension \( (group \ t\ - \ statistic) \) is the most powerful. Given our relatively short time span \( (T = 29) \), we will pay a particular attention to the group parametric-\( t \) statistic \( (ADF - stat) \) when testing for cointegration. The result of panel cointegration tests are displayed in table 2.

Since simulations made by Pedroni (2004) show that, in small samples, the group-mean parametric-test is more powerful than the other tests, we can conclude that the null hypothesis of no cointegration is rejected in our study, and now turn to the estimation of the long run relationship between the income inequality and economic growth.

**Estimation of the Cointegrating Coefficient of Inequality**

Our estimation technique addresses issues of endogeneity and unobserved country characteristics. Therefore, to account for endogeneity and country-specific unobserved characteristics, we use the System GMM dynamic panel estimation method. The option to use System GMM is based on the argument that the existence of weak instruments implies asymptotically that the variance of the coefficient increases and in small samples the coefficients can be biased. To reduce the potential bias and inaccuracy associated with the use of Difference GMM (Arellano and Bond, 1991), Arellano and Bover (1995) and Blundell and Bond (1998) develop a system of regressions in differences and levels. The

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5 This table contains the mean and variance values for the cases when there is no heterogeneous intercept, or when there is a heterogeneous intercept or/and a time trend in the heterogeneous regression equation. \( k \) is the number of regressors without taking the heterogeneous deterministic terms into account.
instruments for the regression in differences are the lagged levels of the explanatory variables and the instruments for the regression in levels are the lagged differences of explanatory variables. These are considered as appropriate instruments under the assumption that although there may be correlation between the levels of explanatory variables and the country specific effect, there is no correlation between those variables in differences and the country specific effect.

The consistency of the System GMM estimator is assessed by two specification tests. The Sargan test of over identifying restrictions tests the overall validity of the instruments. Failure to reject the null hypothesis gives support to the model. The second test examines the null hypothesis that the error term is not serially correlated. Again, failure to reject the null hypothesis gives support to the model.

In Table 3 we report our regression estimates using the System GMM estimation technique. Before we describe our results, we should mention that the specification tests - both the Sargan test of over-identifying restrictions and the test for higher order correlation - validate our regressions for inference. That is, our instruments are not correlated with the error term and the latter does not display higher order serial correlation.

The panel regression results regarding growth inequality relationship given in Table 3 confirms the negative relationship between growth and inequality in North Africa economies. The cointegrating coefficient of inequality is negative and statistically significant at the 5% level when panel GMM estimator is used. With respect to the different empirical studies (Alesina and Rodrick (1994), Garbis (2005) and Yin and al. (2006)), we find that income inequality has a substantial negative impact on economic growth. On the other hand, an increase of the Gini coefficient level (say, 10%) would imply a growth decline of approximately 0.65 percentage points.

We introduce the level of initial GDP per capita (the natural logarithm) as independent variable according to the conditional convergence hypothesis. The initial GDP per capita coefficient is negative, meaning that the conditional convergence hypothesis is evidenced: holding constant other growth determinants, countries with lower GDP per capita tend to grow faster. The initial position of the economy is thus a significant determinant of growth, as recognised by the neoclassical theory. The initial income has a negative effect on economic growth coherent to the theoretical study and statistically significant at a 1% level.

The estimated coefficient of secondary school enrolment is positive and statistically significant at a 10% level. This result is consistent with common findings of theoretical literature that suggests a positive relation between human capital and economic growth and of empirical literature (Romer (1990), Mankiw and al. (1992) and Benhabib and Spiegel (1994)).

The investment variable has also the right sign since there found a positive relationship between capital accumulation and growth. Trade openness also positively affects growth. Thus, the more countries are outward-oriented the more this contributes favorably to economic growth. These results are in line with those found by Aguire and Calderon (2005) and Dufrenot and al. (2009), and, more generally with the neoclassical approach according to which the positive impact of trade on growth is explained by comparative advantages, be they in resource endowment or differences in technology.

Conclusion

This study attempts to examine the empirical relationship between growth and income inequality for 3 countries of North Africa over the period 1970-2004. The results of this paper clearly indicate that the long-run growth elasticity of income inequality is negative and significant when panel GMM estimator is used. The results also show negative and highly significant relationship between growth and initial income per capita. Physical capital investment has positive effect on economic growth. The results also suggest that
coefficients of openness to trade and human capital investment are positive and robustly significant indicating that both factors have strong impact on economic growth.

A pro-poor economic growth leading to a rapid and sustainable poverty reduction depends upon the interaction of a wide range of policy measures. First, a pro-poor growth strategy does not have to only focus on economic growth, but could also be combined with an active policy of income redistribution. Then, the higher the level of both physical and human capital investment, the higher is the level of output per capita. A better-educated labor force can improve productivity and technological level in the economy, which have a long-run positive effect on economic growth. Finally, governments must create an environment that is conducive to growth. Macroeconomic policy should aim at stability, and openness towards the rest of the world. For all these efforts to be effective, the government must develop good institutions, and provide good governance.

Table 1. Panel Unit Root Tests of IPS

<table>
<thead>
<tr>
<th>Variables in levels</th>
<th>Variables in first differences</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Constant</td>
</tr>
<tr>
<td>Per capita GDP</td>
<td>3.22</td>
</tr>
<tr>
<td>Gini index</td>
<td>3.6</td>
</tr>
<tr>
<td>Trade</td>
<td>1.52</td>
</tr>
<tr>
<td>Investment</td>
<td>-0.75</td>
</tr>
<tr>
<td>Secondary School Enrol.</td>
<td>1.42</td>
</tr>
</tbody>
</table>

Notes: * (resp.**,***): rejection of the null hypothesis at 10% (resp. 5%, 1%) significance level. Lags selected according to the SIC with a maximum lag length of 3.

Table 2. Pedroni’s Panel Cointegration Tests

<table>
<thead>
<tr>
<th>Test Statistic</th>
<th>p-values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel cointegration tests</td>
<td></td>
</tr>
<tr>
<td>$v − stat$</td>
<td>0.06</td>
</tr>
<tr>
<td>$rho − stat$</td>
<td>1.31</td>
</tr>
<tr>
<td>$PP − stat$</td>
<td>-0.12</td>
</tr>
<tr>
<td>$ADF − stat$</td>
<td>-2.36***</td>
</tr>
</tbody>
</table>

Group mean cointegration tests
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<table>
<thead>
<tr>
<th>Statistic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>rho – stat</td>
<td>-4.25***</td>
</tr>
<tr>
<td>PP – stat</td>
<td>-1.06</td>
</tr>
<tr>
<td>ADF – stat</td>
<td>-2.12**</td>
</tr>
</tbody>
</table>

Notes: *(resp. **, ***): rejection of the null hypothesis at the 10% (resp. 5%, 1%) significance level. Lags selected according to the SIC with a maximum lag length of 3.

Table 3. GMM Estimates of the Cointegrating Coefficient of Inequality

<table>
<thead>
<tr>
<th>Dependant variable: Growth rate of GDP per capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial GDP per capita</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Inequality (Gini index)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Trade</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Investment</td>
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<tr>
<td></td>
</tr>
<tr>
<td>Secondary School Enrolment</td>
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<tr>
<td></td>
</tr>
<tr>
<td>Constant</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Observations</td>
</tr>
<tr>
<td>Specification Tests (p-values)</td>
</tr>
<tr>
<td>- Sargan Test</td>
</tr>
<tr>
<td>- 2nd order correlation</td>
</tr>
</tbody>
</table>

Notes: t-stat in parentheses. *, ** and *** indicates significance at 10%, 5% and 1% respectively.

References


World Bank (2009) “World Development Indicators Database”.