ABSTRACT

This paper studies growth performance in the world between 1960 and 1995, with special attention to East Asia and Africa, with the objective of ascertaining the role of convergence in determining growth rates. It starts by reviewing neoclassical and endogenous growth theories and their position towards convergence. It then goes on to undertake an empirical study on growth rates using cross-country regressions. It is concluded that there is convergence in growth rates conditional on variables such as investment, quality of markets and democracy, and level of human capital, and that these explain East Asia and Africa's disparate growth performance. Finally, it is suggested that governments can promote growth and benefit from convergence by adopting measures that enhance performance in these variables.

The Role of Convergence in the Economic Growth Performance of East Asia and Africa

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Introduction

Although it is generally accepted that development is more than high incomes, it is now agreed that, at least with a long-run perspective, the level of income is an important condition for further advancement in a wide range of aspects of human well-being. This becomes evident when we look at East Asia and Africa. After four decades of very disparate economic growth records these two regions present the most extreme cases of development performance in the world. In order to understand their situation and their policy options, it is of extreme importance to study the determinants of their economic growth and the process by which it takes place.

After some years in which growth economics remained dormant, the appearance of the new endogenous growth theories 15 years ago triggered a renewed interest in the discipline. Since then, the enhancement of the old neoclassical models along with the development of the new ones and the availability of reliable long-run cross-country data, have brought about a dynamic dialogue between empirical data and theory that has proved to be very fruitful.

One of the main issues in the debate has been the so called convergence controversy. Convergence refers to the outcome predicted by some theories that poorer countries

should grow faster than richer ones. This essay is grounded on the belief that assessing the existence of this mechanism and, if so, its workings, is a key element in understanding the growth record of East Asia and Africa. If the East Asian experience can proof that convergence takes place and ascertain its preconditions, policies could be applied to Africa to try to follow the same path and benefit from this phenomenon.

Hence the purpose of this paper is to try to explore convergence in growth patterns in the world and to assess its role in the growth performance of East Asia and Africa.

This will be done in three stages. First, I will start by outlining the theoretical background of economic growth and convergence. Second, I will sketch a methodology that will allow me to test this phenomenon in the data. And finally, I will undertake an empirical study using such methodology.

Growth Theory and Convergence[1]

As a broad generalisation it can be said that nowadays economic theory considers two main explanations of growth: neoclassical and endogenous. Let us examine each of them and their relationship to convergence in turn.

Neoclassical Theory

Neoclassical growth models were born in 1956 when Solow expanded the old Harrod-Domar specification in order to introduce one of the main assumptions of neoclassical

[1] The discussion presented in this section is based on Ray (1998), Thirlwall (1999), Jones (1998), and Barro and Sala-i-Martin (1995). Other references used are cited explicitly.

theory: diminishing returns to capital. The model is based in perfect competition and sets capital accumulation as the engine of growth. It assumes that the economy accumulates capital by investing a fixed proportion of output every year, but at the same time depreciation and population growth erode the amount of capital per worker. Hence whenever capital per worker growth is higher than capital erosion, there is a net increase in capital per worker, and thus a proportional growth in output per worker: there is economic growth. However, because of the introduction of diminishing returns to capital, the higher the ratio of capital per worker, the less productive capital is. Therefore, there is a point in which the productivity of capital is not enough to compensate its erosion due to depreciation and population growth, and hence capital per worker accumulation and growth per worker stop. So the model predicts no long-run per capita growth (GDP growth equals population growth). In the long run the economy is in a steady state in which capital per worker accumulation is equal to its erosion.

However, in the short run, if for any reason the capital-labour ratio is not in the steady state value, transition dynamics come into place and, through the same mechanism that I have just outlined, there is per capita growth (which can be negative if the economy is in a level of capital per worker which is higher than the steady state) to bring the economy back to its steady state. Thus in the short run, transitional dynamics imply that growth per worker can differ from the rate of population growth, and this rate is higher the further down from the steady state the capital-labour ratio of the economy. How can this model be reconciled, then, with the evidence of sustained economic growth in the world? Further developments of the theory state that long-run economic growth is due to technological progress, which by making capital more productive slows down the pace at which diminishing returns set in. Hence, better technology keeps making capital productive enough, even if its ratio to labour is high, to outweigh capital erosion, and

thus capital per worker accumulation continues and there is economic growth. Technological progress in this model, though, is taken as an exogenous, and thus unexplained, variable that grows at a constant rate.

Convergence in Neoclassical Theory

The existence of a steady state –and the fact that the further down from it the faster the economy grows– implies convergence. Poorer countries, which have a lower capital-labour ratio, can accumulate capital per worker faster than richer countries and hence grow faster towards the steady state. It is important to note that this reasoning implies that both poor and rich countries have the same steady state. If that is the case, poorer countries grow faster than richer ones, and this is what is called absolute convergence. Yet if countries have different steady states, it is possible for a poor country to grow more slowly than a rich one because the former is closer to its steady state than the latter. Hence, a correct interpretation of neoclassical theory must recognise that it predicts not absolute but conditional convergence, which takes place only after controlling for the steady state. Now, what determines the steady state? In the original Solow model the savings rate and population growth do. In more recent specifications that incorporate the effect of (exogenous) technological change, such as the one proposed by Mankiw, Romer and Weil (1992), other variables that proxy the level of technology –that is how productive the inputs in the production process are– are also considered.

Endogenous Growth Models

The endogenous growth models, triggered by an article written by Romer in 1986, came into place in order to respond to two basic flaws of neoclassical theory. First, the fact that technological progress, the engine of long-run growth, was exogenous and thus not explained by the model. Second, the realisation that, contrary to the predictions of the neoclassical model, growth did not seem to decrease through time as economies converged to their steady states. Therefore, this line of thought tries to incorporate and explain technological progress in the growth process by paying particular attention to the fact that this makes long-run growth possible. The first endogenous models, called AK models, implied constant returns to reproducible factors, and thus they allowed for increasing returns to scale. This entails the abandonment of perfect competition, and means that diminishing returns to capital never set in, making long-run growth possible. Moreover, a theory to determine technological change (A) makes it possible to explain this long-run growth within the model, and thus the label 'endogenous growth'. The main consequence of this specification is that policy measures not only change the steady state, and thus provoke a level effect in long-run income per capita (as was the case in neoclassical theory) but can also have growth effects, changing the growth rate permanently.

However, empirical evidence pointed to the inadequacy of AK models. There are diminishing returns to capital and new data available since the late 1980s showed some support for conditional convergence, so further developments were made to incorporate this fact along the endogeneity of technology. The result is a collection of complicated models whose main asset is their modelling of the technological change process according with the regularities found in the data. Romer's model of technological

spillovers (1994) or Barro and Sala-i-Martin's (1992) theory of diffusion of technology are examples of this kind of work.

Convergence in the Endogenous Growth Models

What are the consequences of endogenous growth models for convergence? The first AK models predicted no convergence. If policies have growth effects, incomes not only do not have to converge through time, but they can also diverge. However, newer models with technological spillovers or diffusion of technology are compatible with convergence, but with one main difference. Whilst convergence in neoclassical theory is due only to diminishing returns to capital and depends on the relative level of capital per worker to the steady state, this does not have to be the case in endogenous models. The idea behind technological spillovers and diffusion of technology, for instance, is that there is a technological frontier in which the most advanced economies are situated. These economies innovate through research and development (R&D) at a high cost, and that is what allows them to grow beyond their population growth rate. Yet less advanced economies are far from the technological frontier, and although they cannot adopt the latest technology immediately, they do so progressively and, what is more important, at a lower cost than R&D would entail. Thus the technological distance between advanced and less advanced economies sets a space for catch-up that, depending on their policies and other conditions, poorer nations can travel through faster or slower (or not at all).

Conclusions on growth theories and convergence

There are three main conclusions to be drawn from this exposition: 1) there are different plausible models and explanations of economic growth that conform to the data, and each of them has its own insights and assumptions; 2) both neoclassical theory and (late) endogenous growth models can be consistent with convergence; 3) in both theories and *irrespective of the theoretical justification for this*, the appearance of convergence is conditional on a set of policies and circumstances of each economy.

Methodology

In the next section I will undertake an empirical study to try to assess the existence of convergence in growth rates in the world, the extent to which this can be seen in the cases of Africa and East Asia, and the role that different variables can have in providing this explanation.

This study will consist of two steps. First, I will analyse the basic patterns of economic growth in the world for the period 1960-1995, with special attention to Africa and East Asia.

Second, I will run some ordinary least squares (OLS) cross-country regressions using variables drawn from growth literature to try to explain the growth patterns observed. I will use what the literature calls *ad-hoc* regressions, which are not grounded in a specific theory, but aim to find the relationship that some policy outcomes and economy features have on growth (Temple 1999). Although this methodology has been criticised because of its important statistical problems, it has proved to be very valuable in the

advancement of knowledge in the field and can still provide worthy insights. Some recent developments have tried to avoid these problems by using complicated statistical techniques. However, given the restricted character of this essay I will use OLS while taking into account its drawbacks. These are summarised by Temple (1999) as problems of parameter heterogeneity, outliers, model uncertainty, endogeneity, measurement error, error correlation and regional spillovers.

Empirical study

Exploratory analysis

Table 1 presents the data for the best and worst performing economies in the period 1960-1995.

It is striking to realise the very disparate paths that different countries have followed. We can see that in 1960 the average GDP per capita was almost identical in both groups of countries. However, 35 years later we find that the top 10 performers have grown at an annual (unweighted) average of 5.4% to multiply their income by 7, while the bottom 10 performers have seen their GDP per capita reduced a 1.8% yearly until almost half its original value on average.

Another important fact to note is that 7 of the top 10 performers are East Asian countries, while 9 of the bottom 10 are located in Africa. We have, then, countries with similar initial income showing disparate growth rates. In order to introduce the notion of convergence to this analysis it is necessary to compare the situation of these countries with that of the most advanced economies.

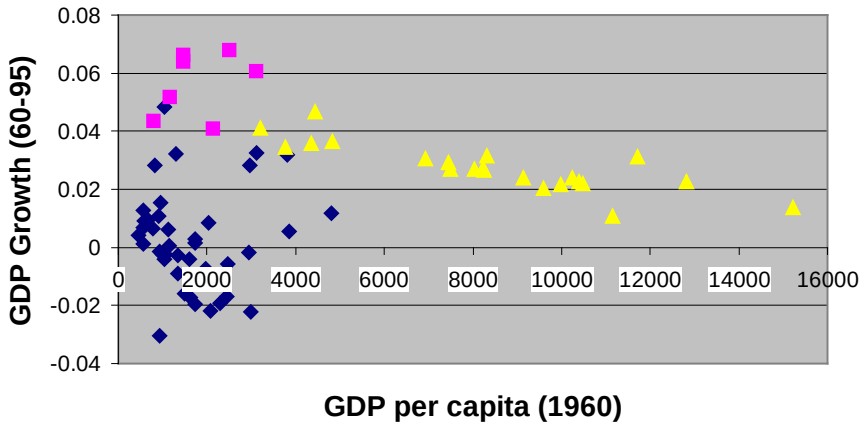
TABLE 1
10 Best and Worst Growth per Capita Performers
1960-1995

Country	GDP 1960	GDP 1995	Growth 60-95	GDP95/ GDP60
Top 10 Performers				
Singapore	2,514	27,020	6.8%	10.75
Taiwan	1,466	14,897	6.6%	10.16
Korea, Republic of	1,474	13,773	6.4%	9.34
Hong Kong	3,110	25,915	6.1%	8.33
Thailand	1,159	7,074	5.2%	6.10
Botswana	1,030	5,611	4.8%	5.45
Cyprus	3,090	16,475	4.8%	5.33
Japan	4,441	22,740	4.7%	5.12
Indonesia	798	3,655	4.3%	4.58
Romania	1,127	5,014	4.3%	4.45
Group average	*2,021*	*14,217*	*5.4%*	*7.04*
Bottom 10 Performers				
Chad	1,339	981	-0.9%	0.73
Nicaragua	3,171	2,219	-1.0%	0.70
Madagascar	1,490	851	-1.6%	0.57
Angola	2,447	1,357	-1.7%	0.55
Niger	1,618	880	-1.7%	0.54
Central African Rep.	2,293	1,170	-1.9%	0.51
Zambia	1,725	869	-2.0%	0.50
Mozambique	2,072	968	-2.2%	0.47
Equatorial Guinea	2,985	1,377	-2.2%	0.46
Congo, Dem. Rep.	934	321	-3.1%	0.34
Group average	*2,007*	*1,099*	*-1.8%*	*0.55*

Note: GDP is expressed in 1996 PPP US$
Source: Penn World Tables 6.0 – 2001

This can be seen in Figure 1, which portraits GDP per capita in 1960 against GDP growth from 1960 to 1995 for African, East Asian, and OECD countries. If we look only at the East Asian and OECD countries there seems to be a negative trend which would suggest the existence of absolute convergence. Countries which had a low GDP per capita in 1960 have experienced high growth from 1960 to 1995.

FIGURE 1
GDP Growth (60-95) vs. GDP per capita 1960



Source: Elaborated by the author with Penn World Tables 6.0 data (2001)

When the African countries are added to the analysis, though, all prospects of finding absolute convergence disappear. 1960 GDP per capita levels for Africa did not differ from those of East Asia, and nonetheless the former has grown much slower than the latter. Moreover, Africa also shows slower growth than OECD countries, so in this case not only absolute convergence does not seem to take place, but focusing only in these two groups would suggest divergence.

This exploratory analysis shows that taking OECD countries as a benchmark, East Asia seems to have been converging in the last four decades, while Africa seems to be diverging.

Cross-country regression analysis

Since the early 1990s growth economics has seen a proliferation of empirical work based on cross-country regressions.[2] The main goal of most of these works has been the identification of a new variable that is shown to be significant in explaining growth. This has led to dozens of them, which allow for so many specifications that some have run literally millions of regressions in trying to find the underlying patterns in the data (see Sala-i-Martin 1997). The approach that I will follow here, though, will be to select only a few variables which appear to be sensible according to the literature and the theory and regress growth on them in a few specifications.

Variables

The dependent variable of the model, growth of GDP per capita, is calculated from the annual real GDP per capita (in constant 1996 PPP US$) for the period 1960-1995, obtained from the Penn World Tables (PWT) in its version 6.0.

If convergence is the main focus of this paper, it is necessary to have a measure of initial GDP in order to assess the existence of this phenomenon, and thus the first regressor of the model is GDP per capita in 1960 (logged to correct the skewness of its distribution), also extracted from PWT.

As for the other regressors, they can be of two types: choice variables –the result of public policies or private decisions– and environmental variables –not affected by public

[2] For a summary of the major findings of such works see Sala-i-Martin (2001) and Temple (1999)

or private choices (Barro 1997, p.8). The focus here will be on choice variables, because of their implications for policy-making.

One variable that is consistently used in the literature is investment as a percentage of GDP (Temple 1999, p.152; The World Bank 1993, p.342; Sachs and Warner 1997, p.5). Moreover, economic theory identifies investment, which allows for capital accumulation, as the basis for growth, so it makes sense to use it in the regression. Data for this variable also comes from PWT, and in order to avoid endogeneity it is calculated as the average of the period 1960-1965.

Another regularity in the literature is the use of political variables that proxy the stability and protection of rights of the environment in which markets take place, and hence determine the latter's success (Temple 1999; Sala-i-Martin 2001). In this respect, I will use a variable that points to the degree of democracy based on Gastil's index of political rights. This index ranges from 0 to 7, where lower numbers imply better democracy and protection of rights. I will also use another institutional variable that looks at the effectiveness of markets: the black market premium (logged to be linearised) –the price differential of buying goods in the black market. Both variables are taken from Easterly and Levine (1995), and present annual averages for the span of their study, 1960-1989.

There is also much work that focuses on human capital, which is seen as a kind of investment because labour is an input in the production process and its quality determines the level of productivity (Barro 1991 and 1997). Human capital is usually proxied by health and education variables, which can be easily thought of as determinants of the quality of labour. For the present model I will use one very common health variable, life expectancy at birth (logged to correct the skewness of the

distribution), and one education variable, gross enrolment rate in primary schooling. Both are extracted from Barro and Lee (1994) and present the annual average for 1960-1995 in order to reduce the risk of endogeneity.

As for environmental variables, I will use an index called ETHNIC that measures ethnolinguistic fractionalisation in 1960 (which ranges between 0 = no fractionalisation and 1 = maximum fractionalisation). This variable is also taken from Easterly and Levine (1995), who use it following the argument that heterogeneity in social composition is a source of conflict, which in turn hinders growth.

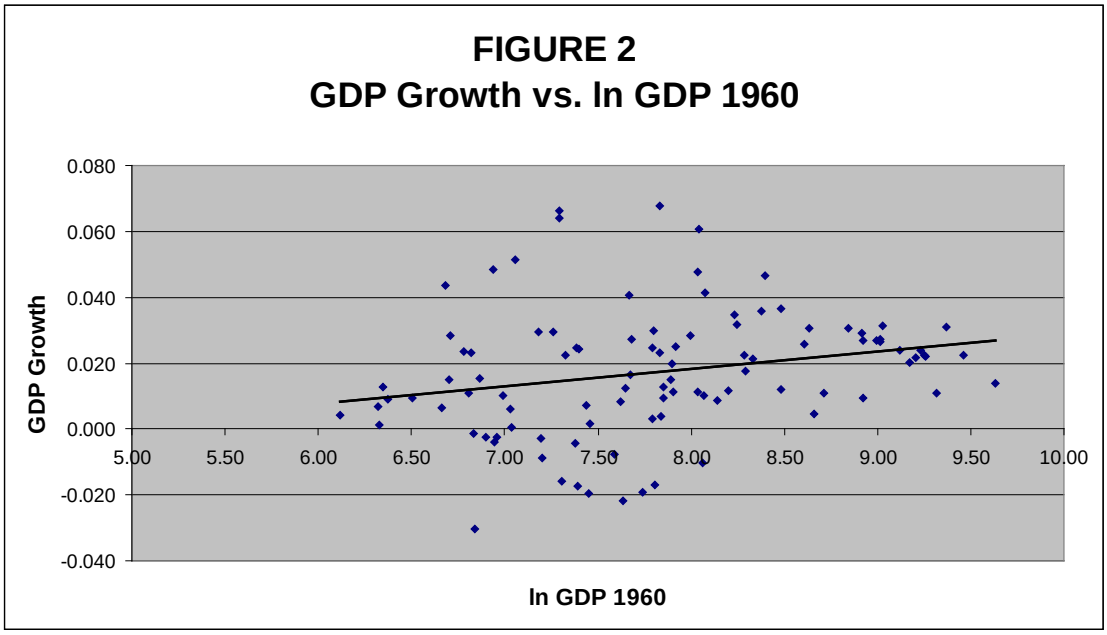
Finally, I will also introduce two dummy variables for Africa and East Asia.

The main equation for the model then, will be:

$$\text{GDPGrowth} = \text{Cons.} + \beta_1 * \ln(\text{GDP60}) + \beta_2 * \text{Investment/GDP} + \beta_3 * \text{Democracy} + \beta_4 * \ln(1+\text{Black Market Premium}) + \beta_5 * \text{Primary Enrolment} + \beta_6 * \text{African Dummy} + \beta_7 * \text{East Asian Dummy}$$

Results

Following the exploratory study at the beginning of this section, the first step in the regression analysis is to look for absolute convergence.



Source: Elaborated by the author with Penn World Tables 6.0 data (2001)

Figure 2 plots GDP growth versus ln(GDP 1960). This is basically the same as Figure 1 but with all the sample data and the fact that the GDP of 1960 has been logged in order to correct the skewness of its distribution. Moreover, here we can see the regression line, that, as confirmed from the regression results in Table 2, is positively sloped.

TABLE 2
OLS Regression with Growth of GDP (1960-1995)
As dependent variable

No. Observations	100
Constant	-0.0246 (0.0171)
ln GDP 1960	0.0053** (0.0021)
Adj. R^2	0.048

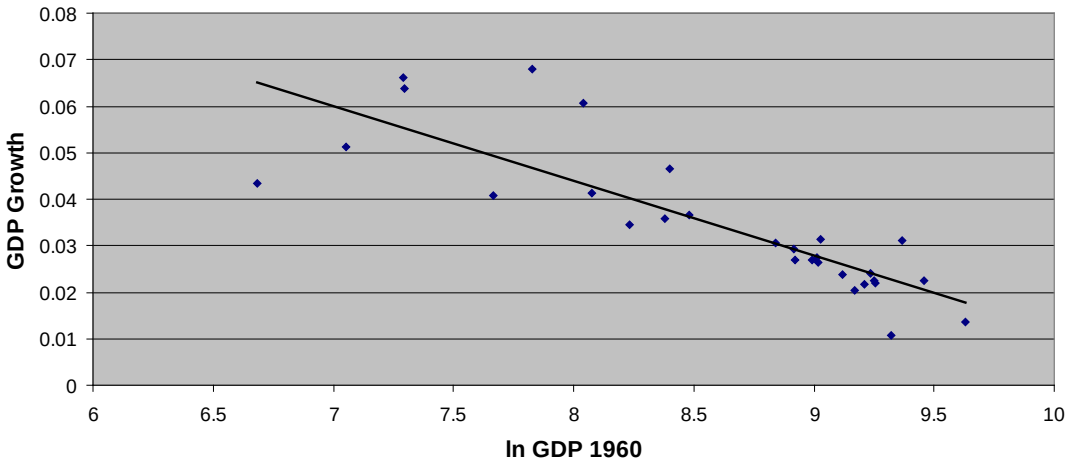
Note: Standard errors are in parentheses
** - significant at the 5% level
* - significant at the 10% level

Moreover, the positive coefficient of the regressor is significant at the 5% level. This certainly rejects the idea of absolute convergence. This analysis, as it appears in the literature, usually shows that the coefficient is not significant. The difference here could

be due to the use of a very recent data set which has data until 1995. In the late 1980s and early 1990s the differences in growth rates between the poorer (mainly African) and the richer countries have augmented, and thus this is reflected in the regression showed here by a higher slope of the line and the significance of the coefficient.

However, we saw in Figure 1 that although absolute convergence did not seem to exist when the African countries were taken into account, graphically it seemed plausible for East Asia and OECD countries. Figure 3 and Table 3 repeat the analysis made in Figure 2 and Table 2 but only for the East Asian and OECD economies.

FIGURE 3
GDP Growth vs. ln 1960 GDP (East Asia + OECD)



Source: Elaborated by the author with Penn World Tables 6.0 data (2001)

TABLE 3 OLS Regression with Growth of GDP (1960-1995) as dependent variable (East Asia and OECD)	
No. Observations	29
Constant	0.1726 (0.0175)
ln GDP 1960	-0.0161** (0.0020)
Adj. R^2	0.689
Note: Standard errors are in parentheses ** - significant at the 5% level * - significant at the 10% level	

Now it can be seen that the slope is negative, and the coefficient that proxies for it in the regression is significant at the 5% level. Thus if we look only at the East Asian and OECD countries there is absolute convergence. Furthermore, the adjusted R^2 value for both regressions is also interesting. While in the first case the 1960's GDP variable explains only 5% of growth, in the second it rockets up to almost 69%. This can be interpreted as the fact that the economies that seem to experience absolute convergence share certain characteristics that allow them to do that, and hence their growth experiences are in a large proportion explained by their different initial GDP per capita. On the other hand, the results obtained when all the sample is used show that in order to understand the growth experiences of economies other factors should be considered. This is the objective of the regressions in four different specifications shown in Table 4, which introduce other variables.

TABLE 4
OLS Regressions with Growth of GDP (1960-1995) as dependent variable

Especification	(1)	(2)	(3)	(4)
No. Observations	100	96	100	96
Constant	0.1167**	0.1121**	0.1074**	0.0972**
	(0.0202)	(0.0211)	(0.0195)	(0.0206)
Log GDP 1960	-0.0153**	-0.0188**	-0.0131**	-0.0159**
	(0.0022)	(0.0027)	(0.0024)	(0.0026)
Investment/GDP (60-65)	0.0005**	0.0003	0.0004**	0.0002
	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Democracy Index	-0.0036**	-0.0027*	-0.0025**	-0.0014
	(0.0012)	(0.0014)	(0.0012)	(0.0013)
Black Market premium	-0.0244**	-0.0222**	-0.0231**	-0.0204**
	(0.0059)	(0.0058)	(0.0054)	(0.0026)
Primary Enrolment 1960	0.0394	0.0251**	0.0274**	0.0159**
	(0.0063)	(0.0079)	(0.0061)	(0.0072)
Log Life Expectancy 1960		0.0008**		0.0007**
		(0.0003)		(0.0003)
ETHNIC		-0.0048		-0.0027
		(0.0050)		(0.0047)
African Dummy			-0.0119**	-0.0091**
			(0.0035)	(0.0037)
East Asian Dummy			0.0129**	0.0144**
			(0.0042)	(0.0042)
Adjusted R^2	0.552	0.578	0.651	0.668

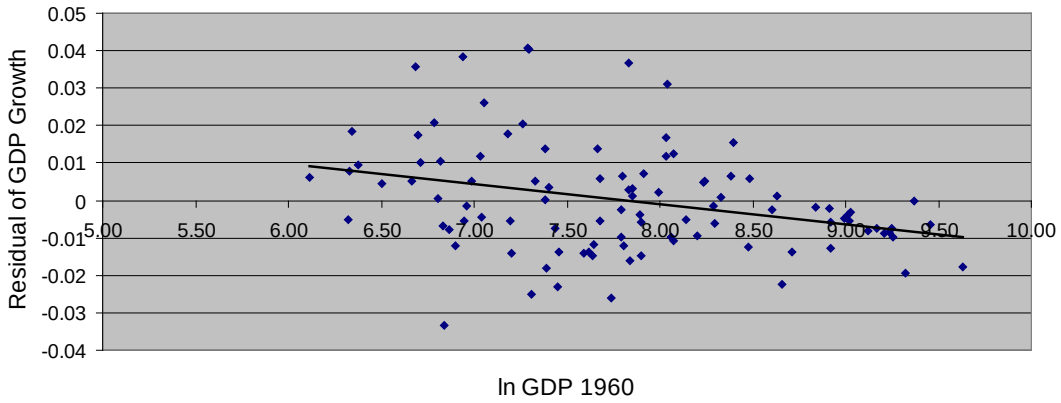
Note: Standard errors are in parentheses
** - significant at the 5% level
* - significant at the 10% level

In order to interpret the results of the tests in these regressions it is necessary to ensure that there is homoscedasticity of the residuals. I have used White's test for specification (1), which regresses residuals with all the variables, their squares and all the cross products, and I have obtained an F-statistic of 1.313, which implies a p-value of 0.196. This means that the hypothesis that there is no trend in the residuals cannot be rejected, and thus we accept that there is homoscedasticity.

Specifications (1) and (3) show that the basic 5 variables chosen for the model are significant at the 5% level and with the expected sign. Thus, investment is positively related to growth, democracy negatively (a lower number of the democracy index means

better democracy), the black market premium negatively (the more distorted is the market the lower growth), and primary enrolment positively. When these variables are introduced, the log of GDP in 1960 shows a negative and significant coefficient, which means that once we have controlled for the other significant variables poorer countries tend to grow faster than richer ones. This implies conditional convergence and can be seen graphically in Figure 4, which plots the log of GDP in 1960 versus the residuals of GDP growth after controlling for the investment, democracy, black market premium and primary enrolment variables.

FIGURE 4
Residual of GDP growth after controlling for 4 variables vs. ln GDP 1960



Source: Elaborated by the author with Penn World Tables 6.0 data (2001)

One striking finding in these results is the very high R^2 that can be found in all the regressions (from 55% in specification (1) to 66% in specification (4)). This is unusual for cross-country growth regressions and can be due to the use of a very large period for the calculation of GDP growth, which can improve the fit by avoiding short term fluctuations.

When in specification (3) dummy variables are introduced in the regression, we can see that both of them are significant, and contribute to increase the R^2. This has to be interpreted as a sign that, even though the model is valid, the variables included cannot fully capture the conditions that have led to the specific growth patterns of East Asia and Africa, which are 1 percentage point higher and lower respectively, for any combination of variable values, than the rest of the world.

As for specifications (2) and (4), the variables analysed up to now are robust, although investment and democracy become slightly insignificant after the introduction of the life expectancy and ETHNIC variables, which can account for some multicollinearity of the regressors. 'Life expectancy' is significant in both specifications and its positive value seems to reinforce the importance of human capital for growth. On the other hand, the ETHNIC variable, although it shows an expected negative coefficient (the more fragmentation the lower growth) is clearly insignificant in both specifications, and thus cannot be taken as a valid determinant of growth according to this analysis.

Going back to the idea of convergence, it is important to note that, as Barro and Sala-i-Martin show (1995, p.422) the coefficient of the log of 1960 GDP in the regression represents the speed of convergence, that is the responsiveness of the growth rate to a proportional change in the GDP in 1960. Hence, in specification (3) we see that the speed of convergence is –0.0131, so the model would predict that, taking any two countries A and B and given that, in 1960, A's GDP was half that of B, from 1960 to 1965 A would have grown, on average, 1.31 percentage points faster every year than B. It also implies that it would take 53 years for country A to reach the level of B's GDP per capita. If we took the value of the coefficient of log of GDP for specification (2), -0.0188, it would take 37 years. The speed of (absolute) convergence found in the regression

shown in Table 3, only for East Asia and OECD, was inside this range, -0.0161, that implies 43 years to catch up with a country with twice as much initial GDP per capita.

Although 50 years can be seen as not too much time in order to reduce some very important differences, we have to remember that, for instance, the United States had in 1995 a GDP per capita that was 48 times that of Ethiopia. It would take 206 years for this gap to be closed even at the higher convergence speed found in this study (specification (2)), or 169 to close half the gap.

However, the truth is that, as we have shown, Africa is not converging, and many of its countries are not even growing. The variables presented in the regressions, and which appear to be important for growth, can be a possible explanation for this, as Table 5 shows. In all of them, Africa performs much poorly than fast growing countries, and the difference is very evident in investment and education. It seems, then, that Africa is not growing and is thus not able to converge as East Asia is doing because it performs poorly in the variables that are crucial for growth. However, it is important to bear in mind that, in the 1990s, African economies have tried to follow market-friendly policies consistent with this analysis, and their growth performance does not seem to have improved. This calls for further study on other issues that potentially curtail growth.

TABLE 5
Averages for variables included in the regressions

Region	All	Africa	East Asia	OECD
Investment/GDP (60-65)	15.32	8.89	24.57	24.05
Black Market Premium	0.19	0.26	0.12	0.04
Democracy	2.57	3.74	3	1
Primary Enrolment 60	0.72	0.43	0.9	0.99
Life Expectancy 60	53.25	41.36	56.83	70.12

Conclusions

The analysis presented here shows that empirical data supports the existence of conditional convergence, which is compatible with both neoclassical and endogenous growth models, irrespective of their specific theoretical underpinning. This would explain that Africa has in fact not converged because there are some variables on which growth is conditional in which this region performs poorly. I have shown that high investment, high levels of education and health of the population, and a democratic political environment in which basic rights are protected and markets are able to function efficiently are characteristics of economies that permit and promote growth. Countries with a good performance on these variables have been able to grow. When this happens, convergence takes place and poorer countries are able to catch up with richer ones, which seems to have been the case in East Asia. Africa has not even been able to grow, and thus convergence has not occurred.

This analysis is relevant not only in explanatory terms but also for policy-making. The variables that have been used in the regressions and appeared significant can all be affected by public policies. It is in the hands of governments, at least to some degree and provided that they have enough resources, to take measures that improve their performance in these variables. This essay predicts that if that happens, poorer countries will grow and benefit from convergence, with which they will be able to reduce the inequalities that separate them from richer economies. However, African weak growth performance in the 1990s, after adopting many market friendly measures, makes us consider that there might be other determinants of growth that do not appear in this study that must also be identified and considered.

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