Economic convergence in SADC:
towards new empirical checks

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Introduction: economic unions in sub-saharan africa.

Until the nineties, Sub-Saharan Africa was characterized by low economic growth (Cinyabuguma and Putterman, 2010; Sachs and Warner, 1997). Several explanations have been provided to grasp this poor economic performance. Among them, we may consider that Africa is badly affected by low density, long distances and deep divisions (World Bank, 2008). Collier (2006) asserts that agglomeration economies in sub-Saharan Africa are less important than those prevailing in Asia and in OECD countries. Because countries in that region are too small

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and not integrated enough, many African cities tend to be too small compared to the optimum. As shown by Au and Henderson (2006) for the case of Asia, this may have serious impacts in terms of foregone growth. Research on agglomeration economies and international competitiveness further suggests that late-comers to industrialization, such as Africa's natural resource exporters, face a competitive disadvantage linked to the spatial distribution of the global industry (Page, 2008).

Sub-Saharan Africa appears as fragmented and poorly integrated. Intra-regional trade in the region is fairly low comparatively to what is noticed in other areas. Therefore, increasing economic integration in the region appears as one of the best way to foster economic growth. It may help Sub-Saharan Africa achieve greater economies of scale,

widen markets, enhance industrial efficiency, and reduce the sub-region's external dependency and vulnerability of its economy (Jones, 2002). The other benefits that may be expected from an increased regional integration are the following: a greater bargaining power vis-à-vis the outside world; the minimization of duplication, thin spreading of resources and wasteful competition; a cheaper and more efficient transportation system; greater division of labor and specialization in production; greater prospects for technological advances and innovation; expansion of trade, incomes and employment due to free movement of goods, services, labor and capital, etc (Jones, 2002).

Several inter-regional communities are already in motion towards achieving economic integration: UEMOA, ECOWAS, COMESA, EAC, CEMAC and SADC.[1] To this end, those sub-regional groupings have designed formal frameworks to guide the transition process in order to promote harmonization and convergence of national economic structures and macroeconomic policies. Moreover, they have set macroeconomic convergence programs. Those programs are expected to help bring about macroeconomic efficiency, stability and to present a real opportunity for African nations to catch up.

The Southern African Development Community (SADC) gathers 15 Member States, namely: Angola, Botswana, Democratic Republic of Congo (DRC), Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, United Republic of Tanzania, Zambia and Zimbabwe. It is characterized in 2010 by a population size of 257.7 million inhabitants and a GDP of 471.1 US $ billion.[2] It aims to promote sustainable and equitable economic growth and socio-economic development through efficient productive systems, deeper cooperation and integration, good governance, and durable peace and security, so that the region emerges as a competitive and effective player in international relations and the world economy. One of the objectives of the SADC is to achieve macro-economic convergence leading to monetary unification and a single central bank. This goal is aligned with the purpose of the African Union to build a monetary union for the entire continent in stages, starting with each of the subregions (Rossouw, 2006). SADC has agreed to macro-economic convergence criteria and to a set of indicators that will allow monitoring of progress towards convergence. In terms of the initial criteria set for 2008, SADC member states have to

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[1]. UEMOA stands for "Union Economique et Monétaire Ouest Africaine". It includes the following countries: Benin, Burkina Faso, Côte d'Ivoire, Guinea Bissau, Mali, Niger, Senegal and Togo. The Economic Community of West African States (ECOWAS) is a regional group of fifteen countries, founded in 1975. Its mission is to promote economic integration in all fields of economic activity, particularly industry, transport, telecommunications, energy, agriculture etc. COMESA stands for "Common Market for Eastern and Southern Africa". It includes the following nineteen members: Burundi, Comoros, D. R. Congo, Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Swaziland, Uganda, Zambia, Zimbabwe. The East African Community (EAC) is the regional intergovernmental organization of the Republics of Kenya, Uganda, the United Republic of Tanzania, Republic of Rwanda and Republic of Burundi. CEMAC stands for "Communauté Économique et Monétaire de l'Afrique Centrale". It gathers Cameroon, Central African Republic, Congo, Gabon, Equatorial Guinea, Chad..

[2]. Official web site of the SADC http://www.sadc.int/ visited January, 31st 2001.

fulfill the following requirements: having single digit CPI inflation rates; ensuring that the nominal value of public and publicly guaranteed debt, as a ratio of GDP, does not exceed 60 per cent; assuring that the public budget deficit as a ratio of GDP does not exceed 5 per cent; and having sustainable current account deficits – that is 3 per cent of GDP or less.

Two sub-groupings have been defined within SADC community: on the one hand, the Common Monetary Area (CMA) which gathers Lesotho, Namibia, South Africa and Swaziland; on the other hand the Southern African Customs Union (SACU) which includes Botswana in addition to the members of SACU.

1. Constraints on sub-saharan africa economic integration.

Several regional integration arrangements have been elaborated in Sub-Saharan Africa. In West Africa alone there are more than 30 regional integration treaties (McCarthy, 2002). Yet, Sub-Saharan Africa is still noted for its lack of success with this instrument of trade policy. Several constraints may undermine the success of those regional integration arrangements. One of the greatest difficulties encountered in integrating countries of Sub-Saharan Africa may be due to the fact that much of regional integration in Africa arose from a political agenda rather than from an economic agenda (McCarthy, 2002). Indeed, independently of the political vision, regional integration has a specific economic rationale. This implies that the building blocks of regional integra-

tion are essentially economic. Therefore, removing constraints on the intra-regional flow of goods, services and factors in search of political goals can be a difficult exercise.

Another concern with Sub-Saharan Africa regional integration process is that it is mimicking EU. As Dramani (2010), we may wonder whether African countries would not gain by following a process that is more in line with the specific nature of their economies, instead of trying to copy the exact model of the Maastricht Treaty. The European model of economic integration seems to focus on price stability rather than economic growth and employment (Maleleka, 2007; Pesaran, 2007). It is based on policy convergence. Therefore, its success required a close homogeneity of the economies involved. Because of the structurally diverse economies, the level of policy convergence at the SADC level does not appear to be as convincing as the European Monetary Union (EMU). Therefore, it is unlikely that most SADC countries would at any time soon and sustainably meet the devised primary policy convergence indicators as EU members did. Another constraint is that in Sub-Saharan Africa trade is also constrained by a lack of diversification. Exports of Sub-Saharan Africa countries are characterized by a high concentration on similar primary commodities and lack of value added, as well as the exclusion of informal sector trade. Only few countries have the benefit of diversified exports: South Africa, which overwhelmingly dominates intra-regional trade, is one of those exceptions. Those constraints seem difficult to overcome. According to Charles Harvey (1999), as quoted by McCarthy (2002),

they are so powerful that African aspiration towards economic integration appears as an illusion.

One way to check whether African economic communities are successful in achieving economic integration is testing empirically if African countries are converging. There is a huge bulk of literature on empirical methods for testing economic convergence. Some of them have been applied specifically on Sub-Saharan Africa sub-regions. In next section, we perform a quick review of the approaches generally used in the literature to analyze economic convergence.[1]

2. ANALYSIS OF ECONOMIC CONVERGENCE[2]

There is a huge bulk of literature about tests of economic convergence. The approaches used in the myriad of contributions performing empirical analysis of convergence can be classified in two broad categories: the regression approach and the distributional approach of economic convergence (Magrini, 2004). Chronologically, the regression approach has been the first thread of analysis. A variety of methods have been developed within that thread to test the predictions of the traditional neoclassical model of growth.

2.1. Regression approach

2.1.1. Cross-sectional analyses.

Initially, studies used cross-sectional growth regressions to see whether regions are converging towards steady state paths and, if so, at what speed (Baumol, 1986; Barro, 1991; Barro and Sala-i-Martin, 1991, 1992). In those tests a negative coefficient of the initial level income is interpreted as en evidence of convergence. Barro and Sala-i-Martin (1991, 1992) expanded and refined the approach initially adopted by Baumol (1986) by proposing the concepts of *absolute* and *conditional convergence*. Indeed, they pointed out that the traditional neoclassical model predicts that the growth rate of an economy is inversely related to the distance from its steady state. Thus, low-income economies grow faster than wealthy ones only if they all share the same steady state. By contrast, in case of differences in technological levels and attitudes toward saving, these economies are characterized by different steady states and the negative relationship between the growth rate of per capita GDP and its initial level may not hold in a cross-sectional sample.

To test the neoclassical prediction of convergence – i.e. the growth rate of an economy is inversely related to the distance from its steady state[3] – data sets have to be conditioned on the steady state. These authors suggest two possible ways of overcoming the problem. The first is to identify a group of homogenous economic systems characterized by similar technological levels and institutional

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1. Conceptually, there is a difference between macroeconomic convergence which is generally the aim of economic unions and convergence in economic growth rates which is generally the subject of empirical tests. However, those two notions of convergence are not inconsistent. Convergence in growth rate is generally considered as consequence of macro-economic convergence. Therefore, tests of convergence of economic growth rate represent the most widely used empirical strategy to assess the effectiveness of regional economic groupings (Jones, 2002 ; Dramani, 2010).

2. For this section, we refer extensively to Magrini (2004).

3. This is the definition of convergence proposed by Barro and Sala-i-Martin.

environments, thus fulfilling the conditions ensuring convergence towards the same level of steady state income. The second way concerns the case when the group of economies differs in their fundamentals. In that case, the group will display multiple steady states and the neoclassical model invokes the concept of conditional convergence. From an operational point of view, this requires the introduction of additional explanatory variables in the cross-sectional regression, which represent proxies for the different steady states.

There are numerous examples of cross-sectional analyses of convergence especially in a regional context. Evidence of unconditional convergence has been provided for U.S. states, Japanese prefectures and several European countries – Germany, UK, France, Italy and Spain – and of conditional convergence across a group of European regions (Barro and Sala-i-Martin, 1991, 1992 and 1995; and Sala-i-Martin, 1996). Although using a human capital augmented version of the neoclassical growth model, Holz-Eakin (1993), Garofalo and Yamarik (2002) and Vohra (1996) confirm the evidence of convergence within the U.S. Moreover, Cashin (1995) suggests that there exists convergence across the seven states of Australia and several empirical studies confirm the original findings by Coulombe and Lee (1993) that unconditional convergence across Canadian provinces cannot be rejected (Coulombe and Lee, 1995; Lee and Coulombe, 1995; Coulombe and Day, 1996; Coulombe and Tremblay, 2001). Apart from the general support to β-convergence, another empirical regularity seems to emerge from this group of studies: the estimated value of the speed of convergence is rather

small (around 2 per cent per year) and stable across different samples (Magrini, 2004).

Several problems have been identified with cross-sectional regression analyses. The first limitation of the cross-sectional regression approach is that, despite the fact that it is directly derived from the traditional neoclassical model, it does not test the validity of this model against alternative and conflicting ones (Magrini, 2004). A second important line of criticism has focused on the informative content of cross-sectional regressions. Several researchers stress the analogy between regressions of growth rates over initial levels and Galton's fallacy of regression towards the mean. In other words, they demonstrate that a negative relationship between growth rates and initial values does not indicate a reduction in the cross-sectional variance. Moreover, according to them it is also possible to observe a diverging cross-section distribution even when such a negative relationship holds. In other words, standard convergence empirics are, at best, uninformative as they concentrate on the behavior of a representative economy (Magrini, 2004).

2. 1. 2. Panel data methods

Panel data methods represent a second tactic to implement the regression approach by combining cross-section and dynamic information. Proponents of this approach argue that it has a clear advantage over cross-section regressions. As previously noted, conditional cross-sectional convergence analyses must allow for steady state income determinants in order to provide consistent estimates. Given that some of these determinants

might be unknown or immeasurable – and thus constitute nuisance parameters – it is argued that the only way to obtain consistent estimates is to use panel data methods.

For the estimation, the least squares dummy variable estimator (Hsiao, 1986) was initially applied. However, since this estimator is consistent only for a large number of observations over time (Nickell, 1981), the most widely adopted alternative is represented by the 2-step GMM estimator suggested by Arellano (1988) and Arellano and Bond (1991) and introduced into the growth literature by Caselli, Esquivel and Lefort (1996).

Results from convergence analyses using panel data methods generally diverge from those from cross-sectional regression studies. For instance, in contrast with Barro and Sala-i-Martin's findings, Lall and Yilmaz (2001) find no evidence of absolute convergence among U.S. States. In general, estimates of the convergence rate via conventional panel data methods are substantially higher than cross-sectional estimates. Using a sample of European regions, De la Fuente (2000) finds annual convergence rates between 26% and 39% within the five largest E.U. countries, depending on the estimation procedure adopted. Nevertheless, Bond *et al.* (2001) have recently emphasized that lagged levels of the variables are weak instruments for subsequent first-differences. Therefore, first-differenced GMM estimator may be subject to a large finite-sample bias when the time series are persistent. To handle that issue, they suggest using a system GMM estimator (Arellano and Bover, 1995; Blundell and Bond, 1998), i.e. a system combining the usual equa-

tions in first differences with equations in levels in which the instruments are lagged first-differences. Applying this estimator, Bond *et al.* (2001) find a convergence rate of approximately 2% for both the basic Solow model and its human capital-augmented version, reestablishing the low convergence rate common to cross-sectional regression studies.

There is some controversy about the value of panel data methods for assessing convergence. While, from an econometric viewpoint, their advantages over cross-sectional analyses are apparent – unobserved heterogeneities that bias conventional cross-sectional convergence regressions can be controlled for and lags of the regressors can be used as instruments to deal with endogeneity concerns– they are questionable from a conceptual point of view. Indeed, conditioning out economy-specific heterogeneities means giving up any attempt to uncover what happens to the entire cross-sectional distribution as it is exactly these heterogeneities that explain who is rich and who is poor and how this pattern evolves over time (Magrini, 2004).

2.1.3. Time series methods

The last way to implement tests of convergence by the regression approach is to resort on time series methods. In those methods the definition of convergence relies on the notions of unit roots and cointegration. Using a panel data approach combining the information of individual ADF statistics, Evans and Karras (1996 (1) and (2)) find strong evidence in favor of rapid conditional conver-

gence for the 48 contiguous U.S. states over the period 1929-1991. Employing a similar procedure, Funke and Strulik (1999) report evidence of conditional convergence among West German *Länder* between 1970 and 1994.

Bernard and Durlauf (1995) developed another approach purely based on time series. In this method, convergence in output is defined as the equality across economies of long-term forecasts of per capita income taken at a given fixed date. Following this strategy, Tsionas (2001) finds strong evidence against the hypothesis that per capita income in U.S. regions has converged over the period 1929-1997. This result diverges from those obtained by Evans and Karras (1996 (1)). To explain the discrepancies deriving from the application of different time series methods, Nahar and Inder (2001) point out the inconsistencies in the links between the different definitions of convergence and the stationarity of output differences. In particular, as far as the method developed by Bernard and Durlauf (1995) is concerned, they note that certain non-stationary processes can meet their definition of convergence so that a test for stationarity of the process may fail to reject the null hypothesis of unit root and wrongly conclude that there is no convergence. Several authors have emphasized the existing discrepancies in the results obtained from similar datasets using different approaches and methods. Bernard and Durlauf (1996) argue that the differences between cross-sectional and time series analyses could be partly explained by the fact that time series tests are based on a stricter notion of convergence than cross-sectional tests.

2. 2. Distributional approach

The regression approach tends to concentrate on the behavior of the representative economy. Therefore, convergence analyses based on this thread can only shed light on the transition of this economy towards its own steady state whilst giving no information on the dynamics of the entire cross-sectional distribution of income. Several authors have argued that the concept of β-convergence is irrelevant. To address this issue, proponents of the regression approach suggest combining the analysis of β-convergence with an analysis of the evolution of the unweighted cross-sectional standard deviation of the logarithm of per capita income (Barro and Sala-i-Martin, 1991). A reduction over time of this measure of dispersion is then labeled σ-convergence.

Yet, analyzing σ-convergence does not appear to represent an effective solution: analyzing the change of cross-sectional dispersion in per capita income levels gives no information on the intra-distribution dynamics. The distributional approach of convergence analysis has been designed to avoid those drawbacks. It represents a radical departure from the regression approach. This approach, firstly suggested by Quah (1993 (1) and (2), 1994, 1996 (1) and (3)), examines directly how the cross-sectional distribution of per capita output changes over time, putting emphasis on both the change in its external shape and the intra-distribution dynamics. Therefore, it seems generally more informative about the actual patterns of cross-sectional growth than convergence empirics within the regression approach. However, the work just described, while being

able to formalize certain facts about the patterns of cross-sectional growth, does not provide an explanation for them. To address this issue, Quah (1996 (2), 1997 (1) and (2)) proposes the application of a conditioning scheme. This allows him to stress the relevance of trade patterns and geographical spillovers for understanding cross-country patterns of economic growth and convergence (Quah, 1997 (1)).

2. 3. Implications of spatial interaction

The role of geographical spillovers outlines the importance of spatial interaction in convergence analyses. The spatial econometrics literature outlines the impact of spatial dependence in the true value of parameters. In general terms, it may be "considered as the existence of a functional relationship between what happens at one point in space and what happens elsewhere" (Anselin, 1988).

Two broad causes may lead to spatial dependence: substantive spatial dependence and nuisance spatial dependence (Anselin and Rey, 1991). Substantive spatial dependence reflects the existence of spatial interaction effects, such as technological spillovers or factor mobility, which are substantive components of the evolution of income disparities across regions. Nuisance spatial dependence is the byproduct of measurements errors for observations in contiguous spatial units. In several cases data are collected only at aggregate scale. This often implies a poor correspondence between the spatial scope of the phenomenon under scrutiny and the delineation of the spatial units of observations and thus potential measurement errors. Those errors will tend to spill over across the frontiers of spatial entities as one

may expect that errors of observations in one spatial unit are likely to be correlated with errors of neighboring geographical entities (Anselin, 1988).

A first form of substantive dependence can be incorporated into the traditional cross-sectional specification through a spatial lag of the dependent variable, i.e., the spatial autoregressive model. This specification may be grasped as a way of controlling for spatial dependence in regional growth due to the convergence mechanism operating on spatially auto-correlated initial incomes (Anselin and Bera, 1998). It may also be caused by spatial interaction in the data generating process arising when a region's growth rate is related not only to its own starting level of income but, indirectly through the effect on income growth, to those in other regions as well following a distance decay pattern (Anselin et al., 1998). A second form of substantive dependence reflects spatial autocorrelation in the starting levels of income and can be dealt with a spatial cross-regressive model in which a spatial lag of initial per capita incomes is added to the original specification (Magrini, 2004). Nuisance spatial dependence is accommodated by estimating a convergence regression through a spatial error model. Such a model is characterized by spatially auto-correlated error terms. In such models, a random shock affecting a particular region affects the growth rates of all other regions through a spatial multiplier. Therefore, movements away from a steady state growth path may not be a function of region-specific shocks alone, but of shock spillovers from other parts of the system as well.

Cross-sectional regression analyses that allow for the role of spatial effects

are exceptions rather than the norm. Focusing on the experience of 48 coterminous U.S. states between 1929 and 1994, Rey and Montuori (1999) find strong evidence of positive spatial dependence in both levels and growth rates of per capita income, i.e., spatial clusters of states which are homogenous in terms of income levels and growth rates. Moreover, they find that the rich clusters tend to grow more slowly than poor clusters, a pattern that could be explained by the clustering of initial income levels together with a process of unconditional convergence. In studying convergence among European NUTS regions, Armstrong (1995), López-Bazo et al. (1999) and Rodríguez-Pose (1999) report the presence of significant spatial autocorrelation both for income levels and growth rates. Thus, these studies also provide evidence that, in the European context, traditional convergence analyses may suffer from a misspecification due to omitted spatial dependence.

Yet, despite being able to substantially eliminate the presence of spatial autocorrelation in the error terms, these specifications seem questionable for two reasons: they are too restrictive, excluding spatial effects across borders, and they overlook the possibility of spatial structures within each member state. Employing a more disaggregated regional data set, López-Bazo *et al.* (1999) detect strong intra-national local spatial association in per capita income levels. Focusing on West German planning regions, Niebuhr (2001) provides further strong evidence of spatial dependence both in levels and growth rates of per capita Gross Value Added. In contrast to Rey and Montuori (1999) who find evidence of nuisance spatial dependence,

spatial dependence in Niebuhr (2001) appears to be of the substantive form. Niebuhr interprets this difference as a consequence of the different choice of observational units. U.S. states are large administrative areas. Therefore, using them may imply measurement errors. This is not the case of German planning regions which are smaller functional regions taking commuting patterns into account.

3. EVIDENCE ABOUT ECONOMIC CONVERGENCE IN SUB-SAHARAN AFRICA AND SADC

Convergence analyses focusing on SADC or even Sub-Saharan Africa are quite sparse in the economic literature (Jones, 2002). Moreover, the few available studies provide mixed results. Asiama and Kugler (2005) check out the hypothesis that Sub-Saharan Africa forms a convergence club. Using a dynamic panel data method, they explore three concepts of convergence — absolute, conditional and convergence in income distribution. Their findings suggest that Sub-Saharan Africa is not an example of a convergence club. Rather, countries conditionally converge to their own steady states, and this could explain the increasing heterogeneity in economic conditions across the sub-region. While this result is not intuitively surprising because of the strong disparities prevailing in the sub-region, several authors have suspected the existence of clubs of convergence within Sub-Saharan Africa. This has prompted some researchers to check out empirically whether the prevalence of such convergence clubs is backed by empirical evidence.

With an econometric validation based on cross-sectional and panel data, Dramani (2010) tests the hypothesis of the convergence of the economies of the UEMOA and CEMAC zones. His findings show that the convergence and the integration processes have not been carried out uniformly in the Franc Zone. Indeed, they have been given greater emphasis in UEMOA than in CEMAC. Furthermore, the conditional convergence model highlights the existence of key variables that help to maximize the convergence speed: public development aid, stock of human capital, rate of investment and inflation. Dramani (2010) does not bear out the hypothesis of a common convergence path in the Franc Zone. He rather highlights the presence of convergence clubs: cotton-producing countries, coffee-producing countries and coastal countries. Jones (2002) uses cross-sectional and time series methods to assess convergence in ECOWAS countries. He finds out that ECOWAS countries form a convergence club. Using nonlinear least squares in his cross-sectional regression, he obtains, for the sample period (1960–90), an estimated speed of unconditional convergence of about 1.7 % per annum, which is approximately the same as the 2 % convergence rates found in Barro and Sala-i-Martin for a group of more homogenous countries. However, Pesaran (2007) cautioned that the conclusion of the existence of a convergence club might be spurious results, reflecting inconsistency in model structure, choice of sample period and data generation problems.

No clear evidence is provided about convergence in SADC. Departing from the econometric literature, Malekela (2007) analyze the performance of CMA, SACU, and SADC with respect to a set of primary policy convergence indicators (inflation rate, budget deficit, public debt, and current account deficit) and to real GDP growth as a secondary indicator. He, therefore, assesses the performance of those sub-groupings in terms of policy and output convergence. He finds that, by 2006, CMA countries met the primary targets on the four indicators, though all countries did not meet the secondary target. He suggests that their poor performance with respect to the secondary criterion may be an indicator of the underlying structural factors that drive the growth of the respective countries. Therefore, while CMA and SACU countries have on average been stable and shown resilience in macroeconomic management, this did not result in output convergence. The rest of SADC does not show any overall pattern towards policy convergence and output convergence.

Mabunda (2009) performed a convergence test at more disaggregated level. On the basis of the conceptual scheme of Barro and Sala-i-Martin (1992), he uses cross-sectional data to perform a test of convergence across 9 provinces of South-Africa. He concludes that there is no convincing evidence that the real per capita income of South Africa provinces are converging. The explanation that he provides for this lack of convergence is that South African provinces are not economically homogeneous. He suggests that these findings underline the need of effective economic policies to narrow the socio-economic imbalances existing between provinces. Sachs and Warner (1995) summarized three domi-

nant reasons offered in the literature for the absence of convergence. First, productive technology tends to dominate in the developed economy. Second, convergence holds among countries with sound human capital base and use of modern technology. Third, poor countries generally have low long-term potential. It is nonetheless noted that countries tend to grow faster when the gap between their current income and their own long-run potential is greater. This does not aid to form an optimistic view to the potential of Southern Africa in the convergence paradigm.

While Malekela and Mabunda' studies lead to suspect the poor performance of SADC countries in terms of convergence, it is important to consider that more has to be done to effectively assess economic convergence in Southern Africa. A set of more advanced methods, dynamic panel data methods, time series and distributional approaches of convergence analysis are still to implement for the convergence analysis of the sub-region. They would yield a more credible diagnostic about the convergence process. Moreover, the specific situation of SADC with the leading role of South Africa suggests that geographical spillovers may play an important role in its convergence process. Indeed, one may suspect countries nearer to South Africa to converge more quickly because of their stronger spatial interaction with South Africa. Therefore, there is room for the implementation of further empirical investigations about economic convergence in Sub-Saharan Africa and in SADC. An interesting investigation strategy is to account for spatial dependence and heterogeneity in convergence regression or to implement

the distributional approach in those specific areas.

Considering all the efforts made by Sub-Saharan Africa and more specifically SADC countries to foster economic integration through the design and the working of economic unions, assessing convergence properly is worth some focus from African researchers. This also entails moving towards a harmonization of statistical indicators in Sub-Saharan Africa and in SADC. Indeed, in order to assess the economic and social integration process within their zone, African economic unions need convergence and surveillance statistical indicators, including indicators of population, external trade, public finance, prices, income, employment and national accounts. Some unions have created statistical units aimed at strengthening the harmonization of national statistics and building sustainable capacities in member states (Mouyelo-Katoula and Nshimyumuremyi, 2007). Yet, the quality of statistics in the majority of African countries remains poor and needs improvement. To tackle this problem, the African Development Bank has launched a major statistical capacity building program aimed at addressing these problems through the provision of financial and technical support under the framework of the International Comparison Program for Africa (ICP-Africa). The aim of this program is to produce internationally comparable price and expenditure levels to facilitate cross-country comparisons of Gross Domestic Product (GDP) and its sub-aggregates in real terms and free of price and exchange rate distortions. In order to be able to monitor effectively economic convergence within SADC, it is critical to achieve those goals.

CONCLUSION

Following the EU example, several inter-regional communities have been designed throughout Sub-Saharan Africa to achieve greater economic integration. Characterized by the paramount role of South-Africa, SADC is an interesting example of such inter-regional groupings. Several constraints seem to impede those integration processes and many specialists have raised concerns about their effectiveness. Therefore, assessing economic convergence is critical to check out whether the strategies currently adopted are appropriate. The econometric and empirical literature proposes several methods for evaluating income convergence. While the application of those techniques is well documented for US, Canada, Japan and Europe, there are only few convergence analyses focusing on Sub-Saharan Africa, and even less dealing with SADC. Concerning the specific case of SADC, there is definitely room for further empirical investigations. The dominant role of Sub-Saharan Africa and the spatial interaction it may imply raise the issue of the relevance of spatial econometrics. We wish to tackle this issue in the near future.

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