

## **MOVING TO A FINAL REPORT: A MEMO TO CASE STUDY TEAMS**

**S. A. O'Connell  
C. C. Soludo<sup>1</sup>**

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### **1. Introduction**

Each of the country teams has the 9-page detailed Terms of Reference. Our purpose here is not to add to the TOR but rather – as we move into the critical stage for the case studies – to communicate some useful clarifications that emerged from the May 2001 mini-conference. To this end, we begin in section 2 with the central questions that should guide the country teams in developing their overall story line. Sections 3 and 4 then briefly discuss the roles of education and income distribution in the growth process and provide suggestions on incorporating these components into the case studies.

### **2. Key questions to guide the story line**

The purpose of the project is to develop a coherent story about the determinants of economic growth within and across African countries in the last four decades of the 20<sup>th</sup> century. With few exceptions, growth in African countries was slow and sporadic. The structural transformation of these economies was therefore limited, both in comparison to other countries/regions and in comparison to expectations that were widely held in the 1960s. Existing generalizations about African growth performance have generally been developed from a highly aggregative perspective. *The purpose of the country case studies is to isolate the trees from the forest, thereby deepening our understanding of the growth process.*

Growth and structural transformation are ultimately driven by investment, learning, and innovation. A case-based analysis of growth performance must therefore answer the WHAT, WHY, and HOW of these key elements of the growth process. WHAT patterns of investment, learning, and innovation were observed? WHY were these patterns chosen by firms, households, and governments (i.e., what features of the incentive structure facing agents were important)? HOW did these choices feed into growth outcomes? Figure 1 gives a flow diagram that shows how these questions are imbedded in the overall terms of reference for the case studies. Each of the four levels of analysis (macro/growth, markets, agents, and political economy) is present in the diagram, which shows how these elements can be woven together into a mutually consistent account of growth experience. As we approach the synthesis stage of the project, it is imperative that case study teams develop a story line that is consistent with the questions suggested here and with the linkages outlines in Figure 1.

A key feature of each case study is the use of microeconomic evidence to illustrate or corroborate central elements of the story line. In this respect the terms of

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<sup>1</sup> Co-coordinators, AERC Explaining Economic Growth Performance project. We thank members of the 'Steering Committee Plus' for their contributions to this memo.

reference owe a great deal to Collier and Gunning 1999, who bring macro and micro evidence together to establish an integrated account of African growth. By *microeconomic* evidence we mean evidence that characterizes the environment and/or behavior of a specific set of agents. For example, firm and/or household survey evidence could be used to demonstrate how economic policies or other determinants of the incentive structure affect investment decisions. Econometric evidence is, of course, desirable, but other types of disaggregated evidence can also make a crucial contribution to the overall story. Sectoral relative price indexes, for example, could be calculated to demonstrate the effect of direct taxation and exchange rate overvaluation on the prices of traded goods. Government documents or interviews with key players could be used to characterize the process that produced a key policy decision. A case history of a key firm could illustrate the evolving relationship between formal sector firms and the state. No single paper can (or should) do everything: country teams will have to be selective in the evidence they pursue. *As we read your final paper, however, we will look for answers to the WHAT, WHY and HOW questions and for the use of microeconomic evidence to corroborate the overall themes of your case study.*

Naturally enough, most of the work-in-progress papers discussed at the May 2001 mini-conference focused primarily on the periodization and macro/growth component of the case study. This analysis was generally convincing and insightful. The next step is therefore to flesh out story line at the level of markets, agents, and political economy. Two cross-cutting themes that are sure to emerge at the synthesis state are (a) the role of policy choices in determining growth performance; and (b) the role of institutional developments. In these key areas, the following questions may help to guide your analysis.

--To what extent is growth performance in your country attributable to policy choices, and to what extent to geography or other “natural” and exogenous factors? How could “good policies” have helped to attenuate or overcome the impact of exogenous factors? If policy choices constitute a major part of the growth story, why were specific policies chosen, and then either sustained or changed? What major interest groups were affected, and did they influence policy choices (if so, how)? What was the relative role of domestic and international interests? In countries or episodes with weak policy: why were inferior policies chosen in preference to better ones? Where policy was strong: what policy alternatives were on the table, and how did the government manage to choose good policy?

--How did market institutions emerge and develop? Did they evolve gradually, in response to developments in the real economy (demand-following), or were they supplied by visionary leadership ahead of demand, thereby leading the growth process (supply-leading)? What has been the impact of any conscious efforts to modernize market institutions and transplant or adapt developed economies’ institutions to your country? Evidence on any one or two of such institutional developments can provide useful lessons for other countries.

### 3. Education and growth

We now turn to the linkages between education and growth and between income distribution, poverty, and growth, issues that are important and to some degree unresolved in the growth literature and that were treated only briefly in the O'Connell and Ndulu 2000 framework paper. Case study teams are encouraged to consult the very useful background papers by Appleton 2000 and Ali and Elbadawi 1999.

Sections 2.2 and 2.4 of the O'Connell and Ndulu 2000 framework paper note that the contribution of education to growth is relatively weak in much of the cross-country growth regression literature and also in the Collins and Bosworth 1996 growth accounting results. It has also sometimes been observed that underemployment is fairly widespread among the educated in some African countries, suggesting that educational capital is not highly socially productive at the margin. These observations are puzzling given (a) the central role attributed to human capital investment in the theoretical growth literature, (b) microeconomic evidence on the substantial private returns to education in African countries, and (c) the widespread view that human capital played a central role in the growth experience of East Asia. Here we briefly suggest two very different interpretations that may be taken up by case study teams as they reconcile their own country's experience with the growth literature.

*Point #1: If micro evidence suggests a high return to education in your country, this is not necessarily inconsistent with cross-country growth evidence, once measurement error and possible nonlinearities are accounted for.*

--Krueger and Lindahl 1998 argue that the very weak performance of education in cross-country growth regressions is the result of measurement error in the educational attainment data. They show that downward bias on the coefficient on the change in educational attainment can be very severe when educational attainment is measured with error. The bias is particularly large when short time periods are used and variables correlated with 'true' attainment are also included in the equation, because these effects lower the signal-to-noise ratio in the educational accumulation variable. Our regressions are subject to these problems, partly because we use short (5-year) periods (as does Hoeffler as reported in O'Connell and Ndulu 2000) and partly because our regressions include a variety of variables that are correlated with educational attainment, including initial income, life expectancy at birth, and dependency rates. The Krueger and Lindahl evidence suggests that when measurement error is accounted for, the change in educational attainment has the expected positive and statistically significant effect on growth. (In fact, increased educational attainment has a somewhat larger effect in their corrected growth regressions than would be suggested by microeconomic evidence. This is consistent with the existence of externalities that raise the social return above the private return measured by return-to-education calculations.)

--Krueger and Lindahl 1998 also find that when initial average educational attainment is used (as in the Hoeffler regression reported in Table 4.1 of O'Connell and Ndulu 2000) and its coefficient is allowed to vary across countries, the pooling restriction fails decisively. This may help explain the weak performance of this variable when the pooling restriction is maintained. When this variable is entered quadratically, the net

impact of educational attainment on growth appears to be positive for low-income (e.g., many African) countries and negative for high-income countries.

*Point #2: However, there are reasons for believing that in some African countries, the social return to educational investment has in fact been low during part or all of the 1960-2000 period. Micro evidence is available to bear this out, and you may be able to document it in your own country case.*

--First, in some countries the quality of education has probably deteriorated over time due to budgetary pressures, which themselves may be related to a combination of rapid population growth and fiscal austerity. In this case the educational attainment data systematically overstate the actual increase in human capital; and we might expect survey data to show some reduction over time in the private return to education.

--Second, human capital may be measured accurately and have highly productive potential uses, but it may be allocated to low-productivity activities because of policy distortions. In some countries, for example, the educational system has tended to channel secondary school leavers into the civil service or state enterprise sector where social productivity may have been low.

--Third, drawing on a classic argument in the agriculture and productivity growth literatures (Schultz 1975 and Nelson and Phelps 1966, respectively), it may be that the return to education is high when new technologies are becoming available and/or the economy is undergoing structural changes, but relatively low when technology is static and when there is little structural transformation. By this argument, the very slow structural transformation of some African economies, both in agriculture and within industry, would lower the contribution of education to growth. The ultimate problem here may be a poor policy environment: Pack and Paxson 1999, for example, emphasize lack of competition and slow growth of manufactured inputs (which, in their view, embody new technologies) as explanations for failing to find any contribution of education to productivity growth among industrial firms in Ghana, Kenya and Zimbabwe. This view suggests that import liberalization and export promotion may raise the return to education, by allowing greater competition and greater inflow of manufactured imports. Similarly, policies that spur innovation in agriculture would raise the contribution of education to growth.

--An alternative technology-based explanation is offered by Galor and Moav 1999, who construct a model in which the marginal return to education (but not to investment in physical capital) is bounded. As a result, in very poor economies, the return to education is relatively low and all investment is optimally in physical capital. That investment raises the return to education, so that in a later phase there is investment in both types of capital. This mechanism may help account for the finding by Bigsten *et al.* 2000 of a low rate of return to human capital in African manufacturing: the education of employees contributes little to their productivity when they don't have machines to work with.

--Finally, it may be that in some countries education is valued more for its "credentialling" effect than for any effect on the individual's productivity. This could occur either when "good" (e.g., formal sector) jobs are rationed due to high minimum wages or other restrictions, or when education is used as a signal for unobserved

productivity. In these cases the private return to education can be high even if the social return, in terms of enhanced productivity, is low.

It is clear from this discussion that the contribution of education to growth is heavily influenced by case-specific features. As with physical investment, case study teams are encouraged to draw on micro evidence in assessing the contribution of human capital accumulation to growth in their country.

#### **4. Income distribution, poverty, and growth**

We can be briefer on the linkages between income distribution, poverty and growth. Where are poverty and income distribution in Figure 1? Large literatures suggest that there is joint causality between distribution and economic growth (see the background paper by Ali and Elbadawi 1999). In Figure 2 we accommodate this by allowing growth outcomes and distributional outcomes to be jointly determined and to feed into the determination of the interests of agents.

In terms of incorporating distributional considerations into the case studies, our advice to case study teams is three-fold.

--First, we are not suggesting that the terms of reference be expanded further. The project is about the determinants of economic growth, not the determinants of income distribution or poverty. Therefore, in assessing the importance of distributional issues, it is appropriate to focus primarily on the impact of distribution on growth, rather than on the impact of growth on distribution.

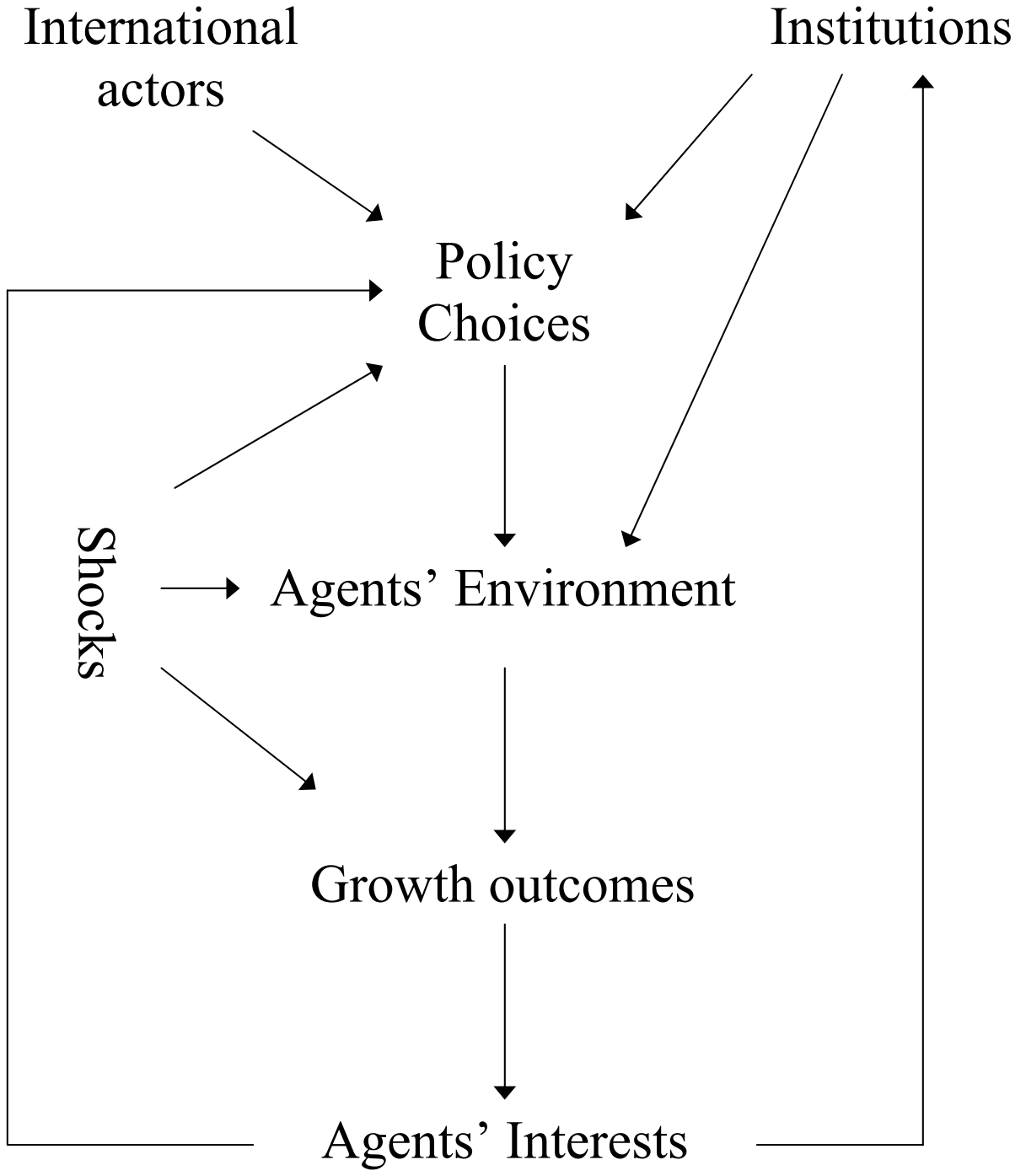
--Second, however, do not take this distinction too far. The distributional impact, or “quality,” of growth can differ a lot across countries. If the “quality” of current growth affects subsequent growth prospects, then distributional considerations may help to explain the sustainability of growth episodes. Moreover, our concern for economic growth is ultimately grounded in a more fundamental concern for human development. *For these reasons, the macro/growth portion of each case study should contain some discussion of trends in poverty/distribution/human development and the relationship, if any, between these trends and growth performance.* Some discussion should be present even if distributional issues do not emerge as an important theme in your case study.

--Third, note that although distributional measures do not appear explicitly on the right-hand side of the O’Connell and Ndulu 2000 regressions, they may have an important indirect influence on growth in these regressions. For example, consider two countries, one of which has higher GDP per capita than the other but a much worse income distribution, resulting in lower life expectancy at birth and a higher dependency ratio (due to high fertility). In the pooled full specification, the country with worse distribution will have slower predicted growth, other things equal, because (a) the higher initial GDP per capita will mean slower convergence, and (b) the lower life expectancy and higher dependency ratio will mean lower steady-state income. Similar arguments may be made for other indirect effects. Direct effects of poverty or income distribution on growth are

the subject of a large literature; see for example Persson and Tabellini 1994 and the background paper by Ali and Elbadawi 1999.

## References

- Ali, A. and I. Elbadawi (1999), "Inequality and the Dynamics of Poverty and Growth," August. [Background paper for the AERC Explaining African Economic Growth project: <http://www.cid.harvard.edu/cidwp/032.htm>]
- Appleton, S. (2000), "Education and Health at the Household Level in Sub-Saharan Africa," CID Working Paper #33, John F. Kennedy School of Government, Harvard University, January. [Background paper for the AERC Explaining African Economic Growth project: <http://www.cid.harvard.edu/cidpeople/bates/research.htm>.]
- Bigsten, A., *et al.* (2000), "Rates of Return on Physical and Human Capital in Africa's Manufacturing," *Economic Development and Cultural Change*: 801-827.
- Collier, P. and J. Gunning (1999), "Explaining African Economic Performance," *Journal of Economic Literature* 37: 64-111.
- Collins, S. and B. Bosworth (1996), "Economic Growth in East Asia: Accumulation versus Assimilation," *Brookings Papers on Economic Activity* 2: 135-203.
- Galor, O. and O. Moav (1999), "From Physical to Human Capital Accumulation: Inequality in the Development Process of Development," Centre for Economic Policy Research Discussion Paper #2037, December. [<http://www.cepr.org/pubs/new-dps/dplist.asp?authorid=110467>]
- Krueger, A. and M. Lindahl (1998), "Education for Growth in Sweden and the World," Working Paper #411, Princeton University Industrial Relations Section, December. [<http://www.wws.princeton.edu/faculty/kruegerpapers/cv.html>]
- Nelson, R. and E. Phelps (1966), "Investment in Humans, Technological Diffusion, and Economic Growth," *American Economic Review* 56: 69-75.
- O'Connell, S. and B. Ndulu (2000), "Africa's Growth Experience: A Focus on Sources of Growth," April. [Framework paper for the AERC Explaining African Economic Growth project: <http://www.cid.harvard.edu/cidpeople/bates/research.htm>]
- Pack, H. and C. Paxson (1999), "Is African Manufacturing Skill-Constrained?" World Bank Policy Research Working Paper #2212, October.
- Persson, T. and G. Tabellini (1994), "Is Inequality Harmful for Growth?" *American Economic Review* 84: 600-621.
- Schultz, T. (1975), "The Value of the Ability to Deal with Disequilibria," *Journal of Economic Literature* 13, September: 827-46.



**FIGURE 1**

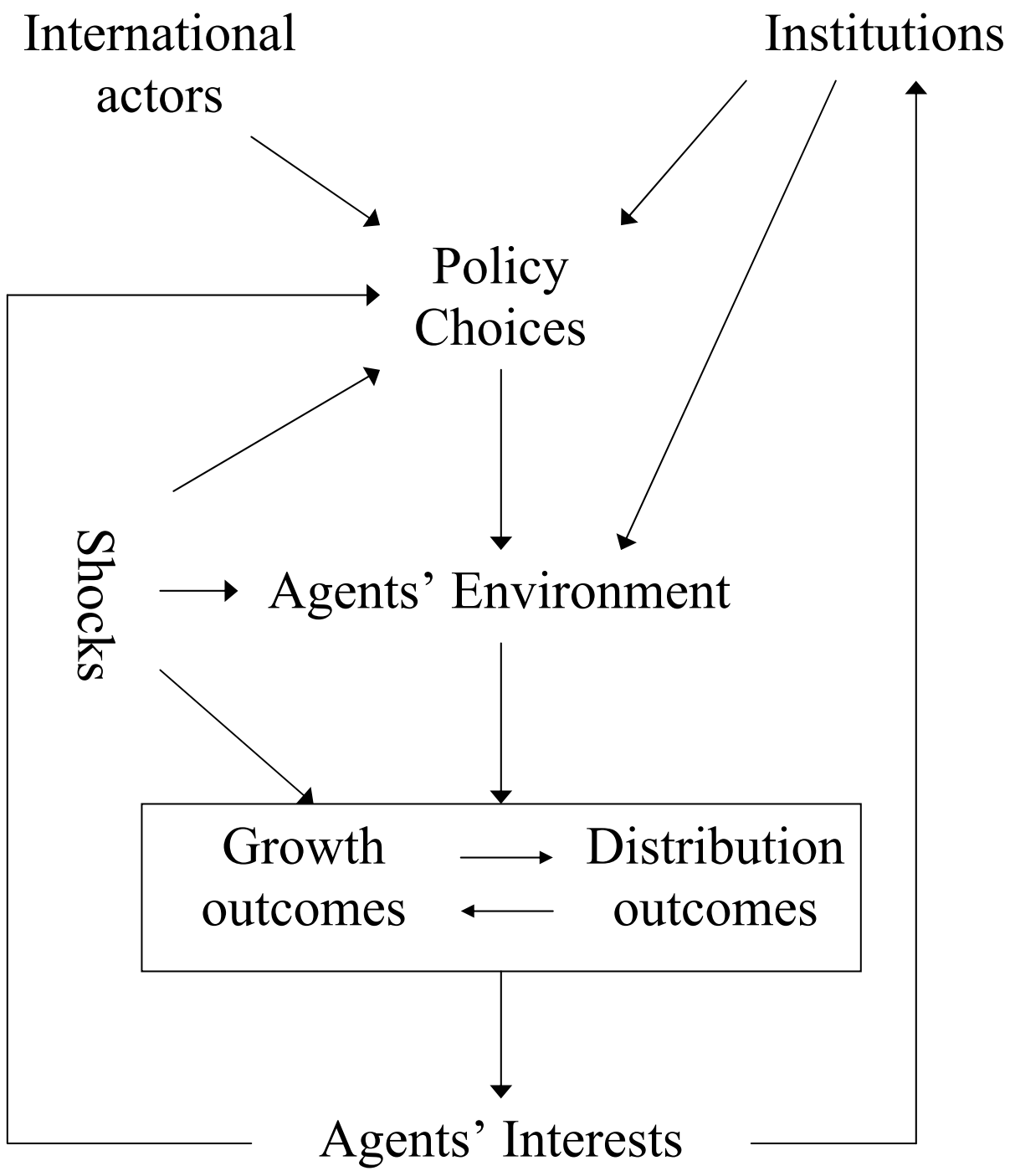


FIGURE 2