Lucas Critique, Time Inconsistency, and Economic Integration in Africa

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As far as the African Union, AU, is concerned, the continent should move, inexorably, towards a peaceful, prosperous, and integrated continent. The paper faults the [intellectual] minds on which the movement, behavior and decision of the continent toward a united continent has been built. We draw on the Lucas Critique as an explanation for the gap between the predictions of models and policy implementation success in Africa. Agent's preferences do change over time: the optimality behaviors on which economic integration were constructed are now violated. Political pressures arising from proto nationalism and external colonial ties often sway member countries to take measures that are different from those agreed upon earlier. A policy rule as opposed to discretion in critical aspects of integration is supported.

INTRODUCTION

Every casual observer would wonder why, in spite of regional integration efforts all through Africa, and in spite of years of meetings, programming and deadlines, there is yet to be a single fully accomplished regional economic community, REC, on the continent. None, despite the existence of more than ten established or approved RECs by the African Union. A fulfilled REC will be one in which its member nations operate under the final stages of economic integration, manifested, for instance, by the use of a common currency, the practice of free trade and the free movement of people and labor within the region. The paper faults the *failure to act posture* of regional authorities and heads of state and government of these countries. Intellectually, this is couched in the Lucas Critique, whereby policy formulation and implementation is drenched in the inconsistency between decisions taken today and decisions taken in the future. The inconsistency arises because of the inherent systematic variations in the structure of the relevant variables available to the decision maker. So, that when policies regarding integration efforts change, the underlying realities on the ground in the communities also change with these policies.

Elements of the Lucas Critique

A typical economic policy formulation states that a vector of chosen macroeconomic variables, y_t moves across time and is dependent on a vector of forcing variables x_t and a vector of independently, identically distributed, iid, random disturbances, ε_t. In a difference equation formulation (Lucas, 1976), we have

$$Y_{t+1} = f(y_t, x_t, \varepsilon_t) \quad (1)$$

Translating (1) into empirical work requires us to state a set of fixed specified parameters Θ to be estimated. This makes the right-hand side of (1) identical to

$$F((y, x, \Theta, \varepsilon) \quad (2)$$

Implying F is known and Θ are fixed. Then, since the sequence [xt] are forcing exogenous variables, one can see that Θ can be estimated from past values of x_t. Forecasting is then easy to accomplish by inserting values of x_t into our F. For policy purposes, we give some present and future values of x_t, such as policy instruments, including prices, wages, interest rates and common currency. This will allow us to follow the stochastic path of $f(y_t, x_t, \varepsilon_t)$, because the other components are already hypothesized. Econometricians proceed to make the task of policy makers an easy one by just tweaking values and magnitudes of x_t to arrive at desirable state variables y_t.

But in a withering criticism of this approach, by Robert Lucas:

> "To this point, I have argued simply that the standard, stable-parameter view of econometric theory and quantitative policy evaluation appears not to match several important characteristics of econometric practice, while an alternative general structure, embodying stochastic parameter drift, matches these characteristics very closely. This argument is, if accepted, sufficient to establish that the "long-run" implications of current forecasting models are without content, and that the short-term forecasting ability of these models provides no evidence of the accuracy to be expected from simulations of hypothetical policy rules" (Lucas, 1976, p.24).

Theoretical Solutions to the Lucas Critique

Obviously, since the problem was the specification that Θ is fixed or stable, solutions would involve allowing this parameter vector to drift, involving dynamic stochastic modelling. "The point is simply that, econometrics textbooks notwithstanding, current forecasting practice is not conducted within the framework of the theory of economic policy, and the unquestioned success of the forecasters should not be construed as evidence for the soundness or reliability of the structure proposed in that theory" (Lucas, 1976, p.23).

1. Adaptive Forecasting

The parameter vector Θ is no longer assumed constant but follows a variability of the random walk type. i.e.

$$\Theta_{t+1} = \Theta_t + \eta_{t+1} \quad (3)$$

and η_t is a sequence of iid random variables. Maximum likelihood method can then be used to execute the estimation. In Lucas' view, the optimality of the adaptive method will likely improve the short-term reliability of (2). In the long run, the stochastic changes, arising from drifts in the structural models and inherent in Θ will not be adequately captured by the adaptation implied in (3). Thus, quantitative policy evaluation in the long run is problematic.

2. Long Run (Rules versus Discretion)

Since the sequence of x_t is assumed to be arbitrary in (1), a correction to the ensuing large errors in the long run simulations of (2) will suggest the vector of x policy variables be stochastically drifting, i.e.

$$X_t = G(y_t, \lambda, \eta_t) \quad (4)$$

And the law of motion in the economy now becomes,

$$y_{t+1} = F(y_t, x_t, \Theta(\lambda), \varepsilon_t) \quad (5)$$

In a model of this sort, a policy is viewed as a change in the parameters λ, or in the function generating the values of policy variables at particular times. A change in policy in λ affects the behavior of the system in two ways: first by altering the time series behavior of xt; second by leading to modification of the behavioral parameters Θ(λ), governing the rest of the system. In other words, (5) allows Θ to vary systematically with λ, consistent with the long run assumption of a drifting x_t sequence. If the policy changes are anticipated i.e. based on rules, then it is possible to estimate the new sequence of y_t based on the changes in the structure of the economy conveyed through the stochastically drifting x_t

(policy instruments like prices, taxes and the like) by estimating $\Theta(\lambda)$ from previous info or data. Of course, if the policy is unanticipated, then, we are back to square one, without solving the problem implied in the specifications of (1) and (2), in as far as the theory of economic policy goes.

Examples of Lucas Critique in Time Inconsistent Preferences

Probably the most well understood and well cited case of time inconsistency is the hostage taking problem. It is well known that many governments announce well ahead of hostage taking cases that they would not negotiate with terrorists because it is reasoned that democracies must never accede to violence and terrorists must not be rewarded for promising the use of it. The import of such announcements is to influence would be terrorists before they even think of taking hostages (Mankiw, 2006). If, in fact, governments or patrons of hostages keep their vows not to pay ransoms, then hostage taking by terrorists would be unprofitable. It is the experience in many cases that once hostages are taken, it is not irrational to agree to pay ransom. Here, Lucas Critique identifies a problem whereby the present decision not to negotiate conflicts with the future decision to negotiate. But reneging in the future decision, this way, makes the decisions of governments and patrons of hostages inconsistent with their original pledges not to negotiate. The inconsistency arises because the decision to negotiate or not depends on time and time changes only. Because the problem of hostages has taken a dynamic change, realizing the threat to harm the hostages, government now may be acting rationally but creating inconsistent decisions with its earlier position. One historical example of negotiating with terrorists is the case with the Irish Republican Army whereby the British government had established a back-line contact with the IRA at a time the IRA launched a mortar attack in 1991 that almost wiped out the entire cabinet at 10 Downing Street (Foreign Affairs, 2007).

An example from economics is the unemployment – inflation trade off, otherwise known as the Phillips Curve. When monetary authorities are inclined to promote low inflation, they use the tradeoff between inflation and unemployment. So, a policy stance of low inflation is sold to the public and whence the public had based their behavior on the *expectation* of low inflation, monetary authorities can now embark on [discretionary] expansionary policy, which is expected to bring about low unemployment per the Phillips Curve. But this goal becomes illusory because the public, rationally, does not trust the central banks to fulfil its promise of low inflation. The result is that the public now changes its mind by basing its behavior on high inflation, arising from expansionary monetary policy by seek higher wages, for instance. Hence, the tradeoff between inflation and unemployment does not happen. The way policy can achieve its goal in both examples above is to make decision makers commit to a fixed policy rule that both the public and the authority will expect to be adhered to or to be carried out (Mankiw, 2006). This way, time inconsistency problem is solved!

Implications for African Regional Integration – Failure to ACT

In West Africa, the Committee of Governors of the central banks in ECOWAS just announced the postponement of the adoption of a single currency to 2020. This is in anticipation of such decision expected from the ECOWAS Heads of State and Government meeting currently going in Abuja, Nigeria (Premium Times, July 4, 2016). The adoption of the common currency itself has been postponed too many times in recent memory. It was first proposed for adoption in the West African Monetary Zone, WAMZ countries in 2003 to be merged with the West African CFA franc at a later date, thereby creating a common currency for the whole of 15 nation ECOWAS regional bloc, in having fixed the final date of adoption previously to be January 1, 2015.

Reasons given for the postponement have been the inability of member states to satisfy their stated preconditions for monetary union, expressed as four Primary Convergence Criteria and six Secondary Convergence Criteria. The currency to be circulated, the Eco, was first billed to start in 2003, but this date has been put off several times to 2005, 2010, 2014, 2015 and now 2020. It is known that only Ghana has once fulfilled all of the 10 criteria in any single year (Wikipedia, 2016). A more plausible explanation is to see the failure of policy as an example of the Lucas Critique in time inconsistency.

Political leaders of ECOWAS, like their counterparts in the rest of the regional integration efforts in Africa, believe in their longevity and in the fact that there is more time to make adjustments in the future and pronounce more dates – the failure to act. But the theory of rational choice shows that the amount of time the decision maker has now is representative of the time that was available to her before and in the future. By postponing the beginning date of the Eco currency, ECOWAS leaders are exhibiting that now is more precious or scarce than the future. In other words, that ECOWAS leaders reasoned that now, say, 2015, has more value than the future, say 2020. Hence, their current political life has more value than their political lives in the future. This creates a failure to act and it is a convenient way of handling a difficult problem and still do business as usual by calling each other "my brother" at regional and continental summits. Since the several postponements listed above have been the case, it is clear that the realization of policy enactment based on the assumption of constant preferences (they will do the right thing) between a pair of time horizons is flawed or inconsistent. The reason is that ECOWAS leaders have just dropped the idea of the Eco currency being circulated from January 1, 2015 and chosen now 2020 when, in fact, the preference in 2014 was that 2015 was the date. Clearly, their preferences have been drifting due to the discretion allowed in their decisions. The public does not take their pronouncements as credible anymore, with the effect that the leaders, in the hope of making the public feel satisfied with the progress being made toward integration, would soon set up another date, in this case, 2020 and expect the public would believe them. But as soon as 2020 is announced the heads of state and government would embark on another postponement. The effect is that the goal of monetary union remains elusive.

Suggested Solution Time Inconsistent Preferences in Regional Integration Policies

In order to make the public trust the pronouncements of African leaders and in order to move the integration agenda forward creditably, we may demand that core policy and integration milestones be based on fixed policy enactments, with no discretion for national leaders. After all, it's either you are committed to the African integration project or you are not. Some key areas where rules rather than discretion are needed include the circulation of common currency, the movement of people and labor, the harmonization of payment systems and trade liberalization.

There are too many rooms for discretion left open in the various policy enactments, including the many years of scheduling the common currency, Eco, within ECOWAS. Apparently, some of them were for technical reasons of fulfilling some convergence criteria, including those of the elusive and volatile inflation rate, GDP growth and balance of payment buffer. This opt out clause, or the convergence litmus test, allows national leaders to pay lip service to the idea of integration when they return back home to their local populations. If ECOWAS is really committed to the Eco, the thing to do is to take away the discretion on key policy and integration issues like common currency and make countries commit to a fixed enactment or an operational date. This way, political rhetoric at home and the breeding of nativism during national elections by tapping into the sentiments and frustrations of their populations regarding recent mistreatment of their compatriots in foreign airports, employment and deportation orders by member countries would be almost eliminated. The result would be time consistency and a solution to the Lucas Critique.

It is tempting to cite ongoing struggles of the Europeans in regards to keeping their own union. This will be a mistake. Europeans themselves know that they are better off as a community. The challenge they have is how best to do it without getting bogged down by past experiences of bitter rivalry, mutual destruction and new-found animus towards "others" manifest within a large swath of their populations. Africa's problems are qualitatively different from those of the Europeans. And, although, we must walk through historical divides of colonial affiliations and their linguistic legacies, it seems inescapable that the total unification of the continent, as eloquently and seriously expressed in the historical documents and ongoing animated pronouncements of African Union leaders, is only the long-term solution to poverty, underdevelopment, and the realization of a "peaceful, prosperous, and integrated Africa" (African Union, 2016).

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