On the Dynamics of Development with Formal and Informal Economy

by Andrea Borgarello
(University of Bologna, LABORatorio R Revelli)
June 2001

The recent transition to a market oriented economic system in Eastern Europe has mostly followed a democratic pattern. Yet, it has faced enormous obstacles. On the one hand, pre-existing institutions and rules have resisted into written norms and unwritten habits and consolidated vested interests. On the other hand, contrasting informal rules and practices growing at the margins and yet de facto slowing down the transition process.

In a democratic and liberal development, transition towards a market oriented system for institutions is often gradual, also because of informal rules that need time to change. During this gradual transition, institutions do not become immediately "efficient" market-wise. When institutions are not efficient, transactions costs are very high and the economy is not able to follow more "orthodox" and linear rules of growth, which presuppose zero transaction costs.

These premises lead to two possible patterns of economic development. On the one hand, economic growth is extremely slow if not even negative for long periods; on the other hand, economic activity finds other ways to develop. This paper focuses on the latter point.

Market oriented institutions–yet not completely efficient–induce a rapid development of the informal economy on a large scale[1]. The informal economy, in turn, slows down growth of the entire economy, as it has a very little growth rate with respect to the amount of resources employed.

We can express total output as the sum of formal and informal output in a proportion which depends on several factors and that can be indicated with d:

$$Y = Y_O + Y_U = (1 - d) * f\{G, E, M\} + d * f\{G(d), E(d), M(d)\} \quad (***)$$

where d lies between 0 and 1. Here d depends on three factors: production disorganisation, labour market inefficiencies and market (lack of) transparency, $d = d(P_D, L_{IN}, T_R)$. It is directly proportional to disorganisation of the production chain, P_D, and to inefficiency of the labour market, L_{IN}. Moreover, and above all, it is directly proportional to the power of "interest groups", to corruption and bureaucracy, and to the tax burden and discretion, e.g. market transparency, T_R. On the other hand, d conditions three macro groups of variables: "growth-theory" variables, G, the institutional framework, E, and macroeconomic stability M.

Each of the components of the economic system introduced above interacts with the others in numerous ways and characterises output development of transition economies. In the figure below we show a possible circle of interactions within an institutional framework, which includes organisations and formal and informal rules, the formal and the informal economy (i.e. the *official* and the *unofficial* economy). The latter includes monetary and non-monetary transactions.

Figure 2 (***)
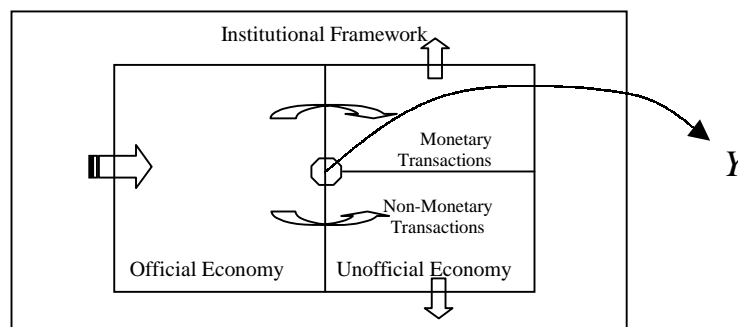
where Y is the output of the country.

[1] See estimates for example of Simon, Kaufmann, and Zoido-Lobatón, World Bank, WP 2169 August 1999.

This simple figure helps us to highlight the relationship between institutions and the economic system and between economic growth and the proportion of unofficial economy vis-à-vis the official one. What emerges from figure 2 is the endogeneity of the process. Institutions indeed feed into the economic system "inputs" which correspond to the structure of incentives. The economic system "elaborates" these inputs and generates, on one side, *economic output*, e.g. GDP, and, on the other side, *pressure* on the institutional framework.

Let us now see in details these relationships. First we model the relationship between the degree of orientation of institutions towards the market (how institutions are "markets oriented"), *IM*, and the proportion of unofficial economy on the official one, Y_U/Y_O. Secondly, by analysing the patterns of formal and informal rules over time, we explain what is the development of institutions towards market oriented ones.

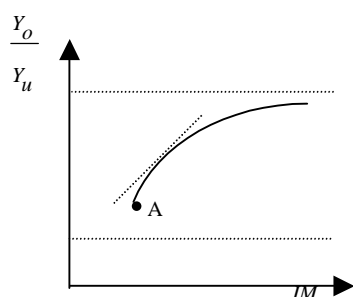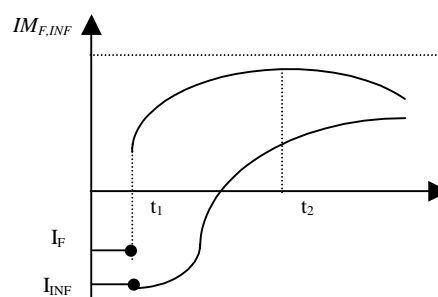*Figure 3 (***)*   *Figure 4 (***)*


where $IM_{F,INF}$ highlights the degree of market orientation of formal and informal rules, respectively; I_F and I_{INF} are formal and informal rules and *t* is time. *IM*, defined above, identifies all aspects which differentiate a socialist and centralised system from a marked oriented one: degree of privatisation, development of a banking system, financial system efficiency, private property guarantees, which mean a democratic environment, good commercial and civil law codes, and an efficient enforcement government system.

Looking at figure 3, it is evident that by increasing the efficiency of institutions towards the market (*IM*) the share of unofficial economy on the official one decreases. Why *IM* improves or worsens, depends on the patterns of formal rules–and even of informal rules, like customs, habits and so on–.

Suppose an institutional shock occurs in t_1, which in figure 3 is at point A: we then have formal rules that jump (almost) immediately towards positive values and then gradually to growth values. Conversely, informal rules do not react immediately to the shock, due to their strong path dependency ("inertia of bad habits"). This way they undergo a gradual changing process. Moreover, formal and informal rules are not independent of each other (their reciprocal influence is strong) and in the long run informal rules tend to affect formal institutions, thus worsening the "good" development patterns already reached.

The importance of this relationship lies in the link between output growth and the unofficial economy.

Appendix 2 (***)
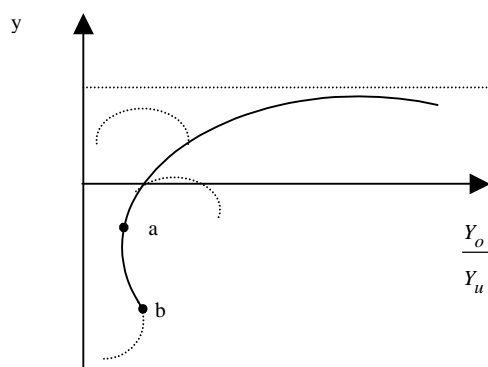
Unofficial economy does not respect same competition and market rules as the official one should do. Hypothesising that perfectly competitive markets are efficient because of conditions of zero transaction costs and perfect competition, the contrary can be said for unofficial economy. Moreover if we include in the model even the influence of external components (globalisation effect), unofficial economy becomes even more determinant being difficultly accessible to foreign actors.

In this graph, in the appendix in the paper, I illustrate how by reducing the share of unofficial economy the growth rate of country output, y, becomes initially positive and then greater and greater. The straight line expresses one development trajectory, while the dotted lines represent some possible deviations from the "good" development path[2]. A country can be in point a after the institutional shock, point A in figure 3, and thanks to institution improvement start to grow towards the asymptote. The other possibility, even more likely, is that the country finds itself in point b and then that unofficial economy helps it to get out of that critical situation. After an initial period, the unofficial economy will have to decrease in order to allow the country to continue on a "good" development trajectory.

The unofficial economy uses indeed just a little proportion of potential resources. Using definitions and formalisation from growth theory, we could write output as determined by three main factors: technology, human capital, and physical capital, yet weighted by the size of the unofficial economy, $y = \gamma * f\{K_H, K_P, T\}$, where γ is the relationship between official and unofficial economy. Here γ lies between a lower and an upper limit, for ex. 0,1 and 0,9, thus respecting asymptotes of figure 3, indicating respectively that all economy is unofficial and that all economy is official. In the case of $\gamma=0,1$ all three growth factors are used at their least potential, and the opposite is true for $\gamma=0,9$.

In the unofficial economy, lack of competition and inefficiency slows down innovation and technology diffusion, while the lack of market transparency and rules clarity slows down physical capital availability and diffusion. Human capital, too, suffers in the unofficial economy, for at least two reasons. First, people receive less professional education and easily change jobs, thus loosing skills and experience. Secondly, the unofficial labour market does not work efficiently because of the trade-off between high immediate gains and high insecurity costs. Besides, workers contribute to the institutionalisation of informal rules, in this case against market institutions.

These factors explain how unofficial economy influences current GDP growth, but they even contribute to determine economic growth rate in following periods. The path dependency which depends firstly on an institutions "memory" effect and secondly on worsening of basic conditions of economic growth has very different weight on development according to distinction between monetary and non-monetary transactions. Non-monetary transactions indeed not only exist in order to overtake high transaction costs, but they even substitute for lack of money (illiquidity) and for instability and inefficiency of monetary system. In such a way they establish new payments systems – barter, debts offsets and so on - which are either persistent either costly for the whole system.

The conclusions point out, once again, the importance of institutions in the development processes, in particular after an institutional shock and a transition to an "official" market.

(***) All formalisations, figures and appendixes are taken from the paper in progress.

---

[2] If we relate GDP growth rate (maybe lagged one period) and the proportion of the unofficial economy on official one calculated by Schneider (1997), we would find a lot of similarities with the figure in appendix 2.