On the Dynamics of Development with Formal and Informal Economy[*]

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Abstract

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. The informal economy, in turn, firstly helps development, but then slows down growth of the entire economy, as it has a very little growth rate with respect to the amount of resources employed. Informal economy indeed reduces free competition, limits free access to the capital, has high insecurity costs, increases in general transaction costs and implies markets highly concentrated and little rules clarity.

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"Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction. In consequence they structure incentives in human exchange, whether political, social, or economic. Institutional change shapes the way societies evolve through time and hence is the key to understanding historical change"

(Douglass North, 1990)

1. Introduction

The collapse of communism in Eastern Europe in 1989 and the dissolution of the Soviet Union two years later, inaugurated the post-communist transition, phenomenon which involved not only the economic systems, but the whole societies.

The so-called "soft revolution" opened a large number of questions that, often, still do not have clear and definitive answers. However, much has been learned about economic development in recent decades. There has developed a broad consensus among economists and others on the kinds of policies that countries ought to follow to achieve economic development. This new consensus raises two questions. First, why do not less developed countries put these policies into place? Presumably, in most poor countries the people yearn for economy betterment and the leaders are aware of this fact and profess their own aspirations for the country's progress and yet the necessary policies do not materialise. The second question may be a partial answer to the first. Why is it that when the recommended policies are put into place the hoped results do not materialise quickly?

Both of these questions can be illuminated by a serious analysis of institutions. The first question concerns more the political institutions of the country and how these influence economic policy formation and its administrative implementation. The second question concerns more the economic institutions of property rights and contract enforcement, and the manner of interaction between government agencies and civil society.

Communism has been a totalitarian regime; and a totalitarian regime does not only plan economic life of the society, but it has also a complete control of individual private life. For this reason, communism has been able to operate a complete transformation of Eastern European societies. And so, the recent transition to a market oriented economic system faced enormous obstacles: on the one hand, pre-existing institutions and rules have resisting into written norms and unwritten habits and consolidating vested interests; on the other hand, contrasting informal rules and practices growing at the margins and yet de facto slowing down the transition process.

The emphasis on investment as a driving force for growth in the early development economics literature neglected the institutional environment in which the investments are made. Such a conception was compatible with a leading government role in making the investments or in directly stimulating them through tax incentives, subsidised credit, protected markets, or other measures. The same criticism applies when human capital is treated in a manner parallel to physical capital.

In a democratic and liberal development, transition towards a market oriented system for institutions is often gradual. During this gradual transition, institutions do not become immediately "efficient" market-wise. When institutions are not efficient, transaction 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. Market oriented institutions – yet not completely efficient – induce a rapid development of the informal economy on a large scale. 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. Informal economy indeed reduces free competition, limits free access to the capital, has high insecurity costs, increases in general transaction costs and implies markets highly concentrated and little rules clarity. However, and this is the other focus of the paper, informal economy can play a crucial role in the first development phase. This is because of its ability to overcome inefficient market rules.

Section 2 gives us some introductory remarks about the actual economic situation in Eastern Europe and introduces the theoretical framework in which economic policies have been implemented on the one hand and criticised on the other hand. In section 3 we explain our theoretical and empirical framework, analysing causes and consequences of shadow economy. Section 4 reveals the way institutions, informal economy and economic growth are linked. Section 5, finally, concludes.

2. Introductory Remarks

2.1. Orthodox Theory

It is quite evident that the main steps in the economic transition process were influenced by the so-called IMF view or Washington consensus. In particular its theoretical background was the neoclassical theory and the orthodox growth theory.

The main idea was to implant in post-socialist countries, the "western" socio-economic model. In an interview in 1993, the first Polish minister claimed that experiments are a privilege for advanced economies and that transition countries do not need them now. Shock therapy became, in such a way, the main and the more efficient tool to implement new rules and new institutions. Economic policies focused on a stable economic environment which was able to attract foreign capitals and fill up the technology gap between Eastern and Western European countries. Macroeconomic variables, public budget stability and foreign direct investments became the first indicators to observe and on which to put attention for future economic policies.

Two conditions were kept into consideration: capital and technology availability and the formal rules change. After almost ten years, in the light of the Eastern Europe economic results, the policy adopted is undoubtedly questionable. Clearly, it emerges the absence of a unique and unambiguous development pattern among transition countries. Some countries have recovered almost completely into the respect of previous GDP level, as Poland or Hungary, some others are still far from previous situation (before 1989) as Russia or Ukraine.

The central idea is the market and its efficiency. In a society where transaction costs are null, it is probably "enough" to dispose of physical and human capitals on the one hand and technological innovation and diffusion on the other hand in order to reach economic growth. Neoclassical theory explains the way the market works and reaches the equilibrium growth, but always hypothesising no transaction costs. Growth theory, since the Solow model, focuses on the determinants of growth under the previous theoretical hypothesis.

Independently from considerations of social equity, the market should be able, according to this theory, to produce economic growth, just because of a set of concurrence's rules put in place exogenously. The main explanation furnished by the international community for failures has been the reforms delay.

If we admit that in advanced market economies, transaction costs are low, then we can not do the same for emerging market's economies as transition countries are. But if the zero

transaction cost hypothesis does not hold, then even the theory built on it does not hold anymore. Capitals and technology have a huge importance in the economic development. The question is if they are enough in explaining development. Turning our attention over the institutions evolution, we could be able to explain differences among development paths.

2.2. New Institutionalism

Why persist such differences among countries in the world since so long time?

Let us consider, from now on, the institutions as the "rules of the game" and the organisations as the "players"[1]. The formers are basically all the constraints which shape human interactions, like constitutions, laws, conventions and codes of behaviour. Organisations are the groups of people with political, economic, social and educational objective functions, like political parties, firms, trade unions, churches and schools. The complex of formal, and informal, rules and organisations constitutes the institutional framework. In its turn, the institutional framework shapes the choices set and the incentives structure which determine human interactions.

However, institutions neither work necessarily properly, nor they can be easily improved. Each institutional change involves indeed the whole society and it is incremental.

That is because the rules of the society must be distinguished in formal and informal ones. Formal rules are basically all written rules as laws, constitutions, commercial codes and so on; informal rules are the product of the local culture as the complex of knowledge, values and other factors which influence individual and collective behaviour. While the formers can be radically changed and, at the beginning of a transformation's process, are exogenously determined, the latter need more time and follow an incremental process. Informal and formal rules are both endogenous variables which continuously change and modify influencing each other respectively.

Communism, controlling all the aspects of individual life, has been able to operate a successful society transformation. The encompassing interest[2] of each individual and every organisation was related to the society improvement share of which it could benefit. And the encompassing interest is the incentive for organisations to act in the society and to promote economic transactions. So, the transition to a market economy needed to substitute the incentives set previously created changing the encompassing interest of the whole society. But, as Dahrendorf argued, if for democratic constitution you need six months, then for either a democratic constitutional order either a new social framework market-based and safety rooted in a robust civil society, you will need sixty years.

The deviation of transition economies performances from Western model expectations is the result of this historical path dependency. If the institutional framework were exogenous, it would be enough to implant a new set of rules, but this is not the case. Considering informal and formal rules endogenous, means we have to expect different reactions from every economic and social system to the same set of initial inputs. We have to consider the reality in which the rule is introduced, the history and the society.

By consequence the economic incentive structure can develop in a wrong way, and the production costs highly increase. Transaction costs are not null as above hypothesised. They can be so relevant as to completely impede the activity or to prevent further development. Other than preventing legal market activity, they can develop widespread forms of shadow economies which indeed became extremely important in transition countries.

[1] D. North (1990b)
[2] M. Olson (1982).

2.3. Market and Shadow Economy

The existence of deviations from the western market economic model, makes interesting to analysing which are the manifestations we see and how can they be interpreted. Firstly we question the existence of the market and secondly we investigate, if there is a market, then what kind of market has started up.

If we look at official statistics[3], we note that in all countries in Central and Eastern Europe, GDP has declined by enormous percentages in the first years of transition. Since 1994, always according to official statistics, for some countries it started the recovery, but for others still now numbers are not at all favourable, see Box 1.

Box 1. Transition economies in the last decade

Looking at the Central and Eastern European countries[4] macroeconomic indicators, during the post-communist transition, it is quite evident that some countries were able to recover from a first sloping down phase, and that they even started catching up western European countries.

If we observe, for example, the Polish GDP growth rate after the beginning of the reforms, we easily notice a sharp drop in the first two years and then a recovery of several years still evident. If we stop our analysis to the first six years, even Bulgaria, Hungary, Cheque Republic and Romania were able to begin a recovery. However if look at GDP growth rate over a longer period, only Hungary, Poland and Cheque Republic seem having taken the right way, while for Bulgaria and Romania the trend has been quite different and they had a sharp arrest in economic development. Even recently, Romania shows a negative growth rate, in 1998 and 1999 GDP growth rate was respectively at –5.4% and –3.2%, while Bulgaria seems at least to restore a positive trend although very slow, 3.5% in 1998 and 2.4 in 1999. In the case of Russia and Ukraine, the situation is even worse. Their output growth rate never inverted the way, except in isolate years.

There are two other very important aspects referring the income per capita catching up phenomenon. The first one is the comparison of the income per capita growth during last eight years between EU 15 average and CEE countries. For EU 15 income per capita increased by 1,7% in average per year, whilst for transition economies is much broader: for Poland and Bulgaria it is almost doubled with respect to 1989 and for Romania and Hungary it is around 40% more, for Russia and Ukraine is more than the double, even if for Russia is following a decreasing trend. Obviously the Western countries had a very different initial income level and so very different absolute values, but at least it is clear a catching up trend for some of them. The second aspect concerns a catching up towards previous levels of same countries. If we include in the time series analysis the year of 1989, then the GDP and the income too are not augmented from the previous period, unless for Poland and Hungary.

This observation leads us to think that the catching up, in terms of reaching western economies, is quite distant for some countries, which after a decade still do not yet have reached their previous level.

There are two kinds of markets which bore in these countries: one was legal and sustained by new institutions and new organisations and the other was illegal, and/or shadow, and bore because of the inefficiency and inadequacy of market institutions for transition economies.

[3] See for example the Annual EBDR reports (2000).

[4] In order to have a general picture of Eastern countries we take in consideration seven countries: Poland, Hungary, Cheque Republic, Romania, Bulgaria, Russia and Ukraine

The contact between the informal pre-existent set of rules and the formal institutional framework introduced in 1989, established forms of market completely different from more advanced economies.

The first step of the transition to a market economy was the privatisation. A process of massive and rapid privatisation, according to the "Washington consensus", put in evidence a problem of economic power division among interests groups. The extreme trust in the liberalism and, the fear that a more quiet transition would not have been completed, induced the transition protagonists to underestimate the presence of the previous governing class. Strong interest groups of state enterprises managers remained in place either slowing privatisation or retaining control of the privatised enterprises. Interest groups organised and diverted resources from productive economy into their own hands. Olson pointed out (2000), an interesting difference between the fascist and the communist collapse. In both the cases, the collapse of the system was good because of the superiority of a democratic system into the respect of an autocrat one, but while in Germany the previous collective interest groups were swept away by the victorious Allies, in transition economies they staid in place.

Lack of transparency and lack of clarity of market rules due to interest groups, allowed the birth of bounded markets, difficult to access and with unclear rules. On the other hand, it allowed the birth of another kind of market, the informal one.

The informal economy includes monetary transactions not declared, but also transactions with non-monetary means of payment. These are basically of four types: the barter where the transaction involves goods for goods; inter firms arrears/offsets; promissory notes (vecksels[5]) issued by enterprises, banks or government with specified maturities and discount rates; and debt swaps, sales and roll-overs.

2.3.1. Causes and Consequences

Excessive regulation and disorganisation, tax distortions and corruption are the main institutional causes of the growth of shadow economy[6], but also liquidity squeeze and macroeconomic instability are important determinants of this situation.

All these phenomena reduce access to the market, limits transparency and clarity of rules and laws and increase the equilibrium condition at which costs equal revenues. That reduces competition and increases concentration into the market. A study of Guriev and Kvasov (1999) shows how in Russia the amount of barter increased with concentration.

However even identifying the causes of concentration it will not be easy to change immediately the situation because the existent system has increasing returns for strong interest groups which will try not to change anything.

But what can they be the consequences of a relevant shadow economy? The "efficient grease"[7] hypothesis asserts that in an environment in which regulation and taxes avoid an easy access to the market, corruption can improve economic efficiency. The same it could be said for shadow economy. If we include shadow economy in official statistics of economic recovery, the huge drop of economy is partially reduced by these forms of shadow activities. The problem is to understand if what they allow to gain on the one hand, they do not take on the hand of formal economy, which has bigger potentialities.

There are indeed at least two kinds of problems with informal economy. One concerns the public control of the national resources. The second problem concerns the substantial inefficiency of informal markets which therefore disperses energies. Furthermore, informal economy risks to institutionalise itself. In Russia for example a liquidity squeeze in 1995

[5] Veksels are the main money surrogate used in Russia. They can be of primary commodity or financial.
[6] Johnson, Kaufmann and Zoido-Lobaton (1999).
[7] Kaufmann Daniel e Shang-Jin Wei (2000).

developed a big proportion of barter that still now is strong present. This path dependence feature, visible for each institutional change, worsens the danger of developing alternative forms of economic transactions.

The opportunity cost of producing in informal economy depends on its risk degree into the respect of producing in formal economy. If shadow activity becomes more and more consolidated and less risky, then informal activity will become less costly. On the other hand operating in formal economy will remain highly bridled by taxes and bureaucratic limitations. The comparison between the two costs opportunity will tend in favour of informal economy again trigging a downward negative spiral.

All these considerations, and some empirical evidence, try to highlight that less informal economy means economic growth rates bigger and, overall, more sustainable in the long run.

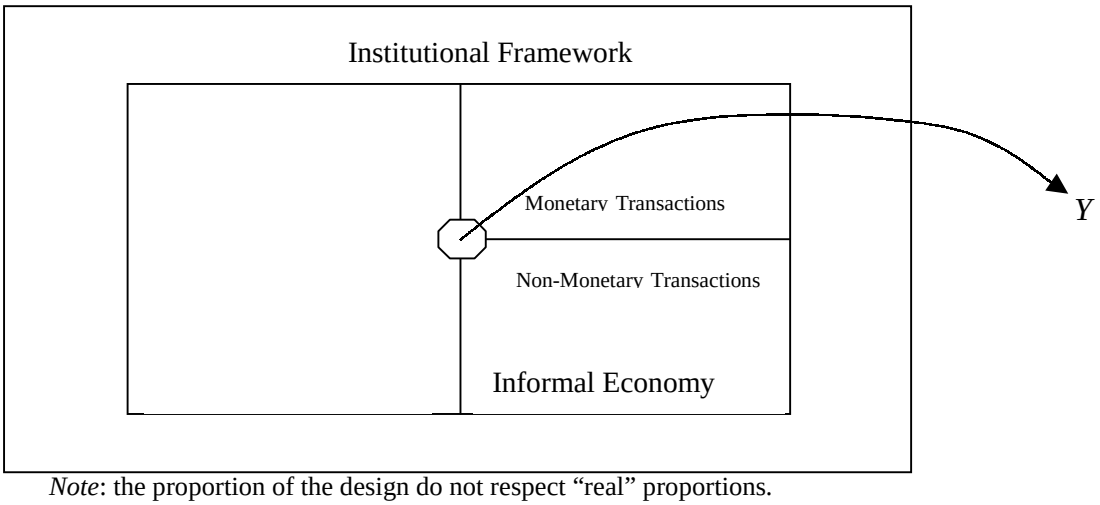
3. Theoretical Framework

In order to understand the economic situation in Eastern Europe after the transition from a planned to a market economy, we drew a very simple graphical framework.

The economic development of a country is the result of the institutional framework in which the economic agent acts. In a socialist system the political power sustains the centralized economic power and property. The private property does not exist and the State coordinates the economic activity. On the contrary, in a capitalist system the political power sustains the private property, which is distributed among individuals according to market rules. Finally, in a transition country, the economic system is mixed. The institutional framework has not a clear orientation and the market develops in several and heterodox ways.

If we consider the complex set of all these production ways we find the country output *Y*. The output *Y* represents the gross domestic product of the country, plus that part not officially declared and not included in official statistics: the shadow economy.

Figure 1
Theoretical Framework



Note: the proportion of the design do not respect "real" proportions.

Figure 1 highlights relationships we described above. In the institutional framework of the country – the biggest rectangle – they develop either a formal economy either an informal one. In turn, in the informal sector we observe either non-monetary or monetary transactions – the two smallest rectangles. The product of the complex mix of these various transactions is *Y*, the output of the country.

3.1. Causes, Manifestations and Consequences of an Institutional Shock

Y, that we highlighted in the previous figure, is the output of the country and it depends on several variables: some strictly related to the orthodox economic thinking and others related to the new institutionalism theory.

In so doing we will use a simple formalization which will help us to follow the reasoning.:

$$Y = \beta * f\{G, E, M\} \quad (1)$$

where *Y* is the output, β an exogenous shock, *G*, *E*, *M* the groups of variables which condition the output.

3.1.1. The Institutional Shock

The first parameter, what I called the shock β, is an exogenous parameter and represents each institutional shock which hits the country. An institutional shock can be caused by four different scenarios: a violent or a pacific revolution, a coup d'état or a spontaneous policy change among leaders. But, in order to understand the change it is fundamental to see from where it arrives the input of change. In the case of a regime new rules are imposed from above, according to a fixed and predetermined project, while in the case of a democratic system new rules bear according to the will of people who vote and choose.

In both the cases there are at least two other possibilities. A regime can be authoritarian or totalitarian. If it is authoritarian, the ruling class shapes either rules or coercive means. In a totalitarian system, ruling class controls also personal life. If you need to modify radically an institutional framework, the second option is surely more successful because it goes deeply in the informal networks. A democratic system too is able to operate a radical change in the institutional framework. It allows, indeed, a system transformation at the same time from above and from below of the society. However a democratic system can work well, but even be subject to impasses and inefficiencies. That is the reason why a democratic transitions has also to guarantee rules – laws and regulations - which allow a good functioning of the decision process.

Finally, we defined this shock exogenous, but we could say that this is not true. One of the main determinants of this kind of shock is the country wealth, which in our framework is simply the country output. Each of four institutional shocks above described is indeed a consequence of persistently declining output. Other causes are political and ideological motivations or even personal interests.

3.1.2. The "Growth" Variables

The first group, *G*, synthesises variables of the "growth" theory and in such a way includes capitals – human and physical - and technology – productivity.

$$G = i\{K_H, K_P, T\} \quad (2)$$

where K_H and K_P are respectively human and physical capital and *T* is the technology.

Growth theory, with the Solow-Swan model (1956), puts in evidence firstly the importance of physical capital, then, with Makwin, Romer, Weil (1992), it showed the importance of human capital and finally, with the endogenous growth theory, focused on the role of technology - and productivity - in the production chain.

With human capital we look at education, experience and formation in qualified environments[8]; for physical capital it is crucial the stock available in the country and that is why we normally observe capitals sources either national or foreigner, as banks or other intermediary financial bodies so as foreign direct investments or international financial aids; for technology there are either aspects related to innovation either aspects which refer to technology diffusion and which in transition economies are probably more relevant.

It exists a strong relationship among the institutional framework, the country macroeconomic stability and the capitals and technology availability which we will consider next.

3.1.3. The Institutional Framework

The second group, *E*, indicates the environment in which the economic activity develops and it consists of formal and informal rules plus organisations.

$$E = g\{Or, Rf, Ri\}, \tag{3}$$

where *Or* are organisations *Rf* and *Ri* are respectively formal and informal rules.

Or, the organisations, includes firms, unions, political parties and so on for each socio-economic domain. In every organisation, there is a leading or executive class which according to its encompassing interest acts in the society for its interest.

Rf, formal rules, are constitutions, laws, regulations and all the other rules written. They represent a necessary condition, but not sufficient in defining a development trajectory of the institutional framework. Their main feature is their relative easiness in changing and transforming radically. Easiness in the sense that you can always change a written rule from one day to another because the problem is at limit its applicability.

Ri, informal rules, are finally the more important determinants in the institutional framework and include customs, habits and all unwritten norms. Their importance stays in their strong influence in determining human behaviour in front of radical changes or gradual mutations of the society. They have an heavy dependence on the past and they can change just gradually. Informal rules determine the way a country, a society or an economic system take a trajectory of development even if completely independent from the original project either political or sociological or economic. They modify formal rules and can shape an inefficient incentives structure for organisations which will operate wrongly.

For example in a socialist system, the complete absence of the concept of private property avoided the birth of any kind of market, but in capitalist systems private property has to be recognised and cheaply enforced. Moreover you need concurrence laws as well as rigorous bankruptcy regulations. When these basic rules are not sustained by formal and informal laws, the economic activity will find a limit in its development and this is often the case of some transition countries.

3.1.4. The Macroeconomic Stability

The last group of variables considered, *M*, indicates the macroeconomic variables considered in this transition process on which there has been the main interest of economists during these decade of transition in Eastern Europe.

[8] "Learning by doing" and "learning by learning".

$$M = h\{L, I, Pb, Ed, Er, Ir\}, \quad (4)$$

where L is degree of market liberalisation, I the inflation, Pb the public budget, Ed the external debt, Er and Ir are respectively the exchange rate and the internal interest rates.

All these variables create the economic environment and put the conditions in which investors, which bring capitals and technology, build their confidence and in which entrepreneurs develop the activity. In details L includes the degree to which prices and exchange rate are liberalised, but also the State presence in the economic wealth – the privatisation degree. For transition countries, we can include in this variables group the macroeconomic reforms progress.

As well as for the other groups of variables, even the macroeconomic stability is endogenous to the development process and it depends on Y so as on E and G.

3.2. Formal and Informal Markets

Let us now consider a disaggregation of the output Y.

If we look at some relevant empirical studies, we have a clear idea of the importance and relevance of the informal economy. In some countries it reaches proportions near 50%, as Russia, Ukraine and countries of the former Soviet Union, but also in Central European transition economies the phenomenon is not irrelevant.

Table 1 Share of Informal Economy in European Countries

	1990	*1991*	*1993*	*1995*
Former Soviet Union				
Georgia	24.9	36	61	62.6
Estonia	19.9	26.2	24.1	11.8
Russia	14.7	23.5	36.7	41.6
Ukraine	16.3	25.6	38	48.9
Central Europe				
Bulgaria	25.1	23.9	29.9	36.1
Czech Republic	6.7	12.9	16.9	11.3
Hungary	28	32.9	28.5	29
Poland	19.6	23.5	18.5	12.6
Romania	13.7	15.7	16.4	19.1
Western Europe				
France	9.4			14.3
Italy	23.4			25.8
Germany	11.5			13.1

Source: Johnson, Kaufmann and Shleifer (1999) and Schneider (1999)

The method of data accounting used in Table 1 is the physical input electricity method, which considers the elasticity between electricity consumption and output growth equal to one. Data of this table show not only big proportions of shadow economy, but also the arising tendency after the transition to a market economy.

For these reasons, Y can be considered as the sum of formal and informal output.

$$Y = Y_f + Y_{in} \quad (5)$$

where indexes *f* and *in* mean respectively formal and informal.

Let us introduce d, which represents the actors choice to operate in formal or informal economy. This parameter refers to the two markets in a complementary way, allowing us to put them in close connection.

$$Y_f + Y_{in} = (1-d) * f_f\{G,E,M\} + d * f_{in}\{G,E,M\} \quad (6)$$

where d is comprised between 1 and 0 and the shock β is omitted.

We can indeed suppose that Y, in the expression (5), is the potential output of the system which reaches its maximum level when d=0. If d>0, Y is incremented by Y_{in}, which is positive, but is reduced by a minor proportion of Y_f. Therefore, the reduction of Y will be insofar as Y_{in} will not compensate the decrease of Y_f.

The magnitude of d is determined by several components which, with the help of large econometric analysis and theoretical considerations[9], we try to list and explain. In particular we identified three fields of analysis: production chain, market exchanges and labour market.

The first problem is the disorganisation[10] between output producers and inputs furnishers which can bring the production chain to collapse. This limitation can be overcome by unrecorded and not-formal networks which at the same time increase themselves the disorganisation of the market. One of the main causes taken into consideration by scholars, is the weight of taxes and bureaucratic regulations to which, each firm or each individual entrepreneur, is subjected for his economic activity. Not only the amplitude, but, especially the discretion with which, taxes and bureaucracy, are applied seems to be really important in determining the choice of staying in informal economy rather than in formal one.

In this view, interest groups become extremely important. Interests groups are normally groups of people who have a common interest and a certain influence in the society or in the decision process. In such a way they can condition taxes imposition and every other kind of costs for firms, distorting market functioning. Interests groups can be old privileged classes[11], but also new social classes. Linked up with the latter is the phenomenon of the corruption which, in turn, is strongly correlated with the informal economy. These aspects of the economy limit access and the range of the trading networks and increase concentration in the market. Sellers and producers are so induced to search new ways of enlarging the network of potential buyers that a limited and imperfect concurrence market can not offer.

Until now we described the production chain and exchanges market problems, but also the labour market imperfections broaden inefficiencies in formal economy. Bad mismatching between supply and demand of labour and low wages and poverty traps, bring people to find other ways of surviving and gaining money.

Two kinds of matters can hit the labour market. On the one hand there are chronic market imperfections as unemployment and wages inequalities, on the other hand there are matters more linked with specific situations. Concerning the first group it is enough to think about advanced countries which have to continuously afford problems as high unemployment rates or arising incomes disparities. Furthermore in transition countries in which in principle people used to live in societies without earnings disparities, suddenly found themselves in front of different possibilities in terms of jobs and wages.

Therefore a lot of individuals go into the informal economy, feeding “micro” parallel markets. Firms have now two good reasons to use unofficially labour market: big offer and big inefficiency in formal one. If the system is imperfect, you can not find formal tools to go out of a critical situation and you will easily move to informal markets. All these elements hit the degree of market rules transparency and clarity and obstruct a linear development of efficient markets again setting a downwards negative spiral.

Summing up the d determinants we say that its wideness is directly proportional to the interest groups power, to the corruption and to the bureaucracy and taxes amplitude and

[9] For example see Commander and al. (1998).
[10] Blanchard (1997b).
[11] For example the so-called Nomenklatura.

discretion. Moreover, it is directly proportional to the disorganisation of production chain and to the labour market inefficiency.

In formal terms we write:

$$d = d(P_D, L_{IN}, T_R) \tag{7}$$

where P_D stays for production disorganisation, L_{IN} labour market inefficiencies and T_R market (lack of) transparency.

We wrote above that the reduction of Y will be insofar as Y_{in} will not compensate the decrease of Y_f. But why there is a difference between the two economies, e.g. between formal and informal? *d* and *(1-d)* multiply the relative function *f* and by consequence all variables included. The result is, in such a way, a product of "pure" market rules and a distortion. All the components of *G*, *M* and *E* are influenced. Institutions develop in a wrong incentive structure and macroeconomic variables, as public budget, inflation and other stability indicators, suffer this institutional framework.

Furthermore in informal economy there are other organisations which constitute a sort of substitute for the State as local illegal organisations, which can get payments for access and control in the informal activity. *Rf* are almost inexistent and informal rules are probably much more important than in formal economy because they shape almost entirely the production chain and the selling activity.

For these reasons, determinants of growth, *G*, follow rules and channels completely different from those in formal sectors. K_P and technological innovation and human formation risk being scarce or stagnating because of little restructuring in firms and unsafe and inaccessible markets. Concentration, little markets contestability and strong internal groups interests in maintaining the pre-existent structure create conditions for little improvement even in human capital.

However, as we will see in the next chapter, informal economy can be even considered, in a first development phase, a positive deviation from traditional markets. After this first period it needs however to be reduced in order not to bound the system economic potentialities.

3.3. Monetary and Non-Monetary Transactions in Informal Markets

If we include the money in our previous analysis we must distinguish in our simple framework, between monetary and non-monetary transactions. These two ways of developing economic activity differ quite a lot one from the other either for causes or for consequences.

Formally we could make a disaggregation of the informal output, Y_{in} in such a way:

$$Y_{in} = Y_M + Y_B \tag{8}$$

where Y_M includes monetary transactions and Y_B non-monetary[12].

Monetary transactions are basically a way to escape taxes and bureaucracy burden. That means in details three cases: unreported gains of firms from informal sells of goods and services, unreported incomes from informal wages paid by same firms and unreported incomes from services and handmade goods of private individuals. Non-monetary transactions include payments, wages and taxes arrears, barter among firms, use of quasi-moneys tools for closing transactions within barter chains.

In order to have an idea of monetary and non-monetary informal economy proportions, see the next table.

[12] Where "*M*" stays for monetary and "*B*" for barter.

Table 2 Non-Monetary Transactions (average 1991-96)

1991-96	*<10%*	*<25%*	*<50%*
Former Soviet Union			
Georgia	10.8	12.4	3.9
Estonia	42.2	6.1	2.3
Russia	19.1	16.8	15.3
Ucraine	21.4	16.1	11.6
Central Europe			
Bulgaria	24.8	7.2	1.6
Czech Republic	17	5.2	3
Hungary	8.6	1.6	0
Poland	21.6	8.1	3.6
Romania	10.4	8.8	4

Note: The table shows firm percentage for non-monetary transactions share. For example in Georgia, 10.8% of the firms have at least 10% of unrecorded activity. *Source*: Carlin, Fries, Schaffer and Seabright (2000)

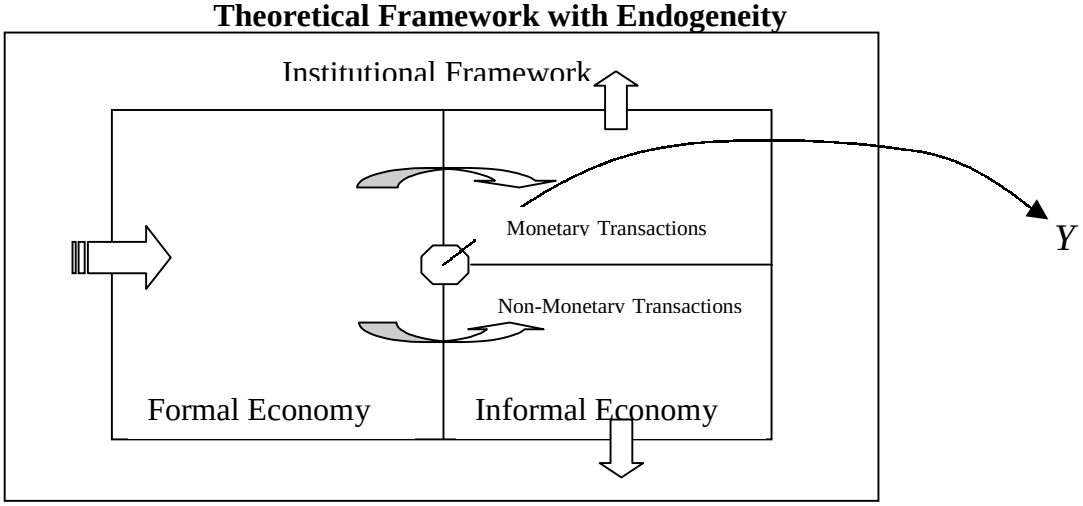
In Table 2 we show, for each country, the proportion of firms which have respectively less than 10%, 25%, 50% of non-monetary transactions of total firms sales. The barter seems to be more important in the former Soviet Union, than in CEE countries.

Non monetary transactions, as barter exchanges, provoke much more path dependency than monetary transactions. They need indeed not only new markets and new exchange channels, but even completely different frameworks and networks. This is the reason why the ex-Soviet Union shows a worse situation than Central Eastern Countries.

3.4. Endogeneity of the Institutional Change

We want now take again Figure 1 in the light of what we studied in the previous pages. With Figure 2 we show how each process described in this dissertation is in strict contact and conditions all the others. The institutional framework is crucial for development of the economic activity, but it is also changed by the same market evolution. If the market evolves formally, then the influence will be of consolidation of institutions in favour of market growth. If the market evolves in shadow economy with different rules, then institutional framework risks to change in favour of parallel economy.

Figure 2
Theoretical Framework with Endogeneity



Note: the arrows indicate the ways each process influences the other. For example the institutional framework gives rules to formal economy. If rules are not efficient rules, formal economy becomes informal economy and it transmits to the institutional framework new rules.

What we are going to consider here is one of the possible influences network among determinants of growth. A shock β generates a particular institutional framework market oriented. This institutional framework creates an incentives system which gives birth to a market in part formal and in part informal. Both tries to modify the institutional framework which changes according to the weigh of each market and in relation of the importance of formal towards informal rules. Institutions indeed furnish "inputs" to the economic system which correspond to the incentives structure. The economic system "elaborates" these inputs and generates on the one hand economic output, for ex. GDP, and on the other hand pressures on the whole institutional framework.

4. Informal Economy, Institutions and Economic Growth

In this section we look more in details dynamics highlighted in Figure 2.

We identify three variables: the institutions, the informal economy and the output growth rate. Institutions are identified by an indicator, *IM*, which shows the institutions goodness towards the market (see later on), the informal economy is seen as the share of the formal on the informal economy – Y_f/Y_{in} - and the output growth rate is the official GDP growth, y. Then we put in direct relationships these three variables. Besides, each of the three variables follow a pattern over the time. In such a way, we studied the development over the time and the direct relationships among the variables at some particular points in the time. More than points in the time we identify country development phases.

The following system sums up the three relationships:

$$\begin{cases} (1) \quad y \rightarrow IM \\ (2) \quad IM \rightarrow {Y_f}/{Y_{in}} \\ (3) \quad {Y_f}/{Y_{in}} \rightarrow y \end{cases} \tag{9}$$

where *f* means formal and *in* informal.

If we look to the expression (1) in the previous section, we see that the output Y, and by consequence its growth, depends on three groups of variables: E, M and G. Here we are taking into consideration what we called E, the environment, which is determined by the institutional framework.

4.1. Market Institutions Development

Let us now explore the variable *IM*.

Institutions are market oriented when they sustain a market economy. However, market oriented institutions can develop from a minimum of a completely centralised system to a maximum of a completely liberalised one. *IM* is the indicator we used to classify the institutions in this range. It represents, for example, the privatisation and price liberalisation degree, the banking and financial system efficiency, the private property guarantees framework[13]. In the EBDR report we have two market supporting institutions indexes, which

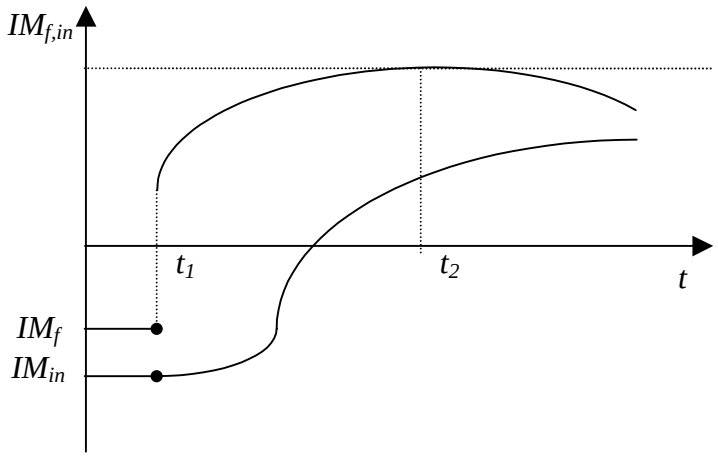
[13] That is a democratic constitution, a good commercial and civil law code and finally an efficient enforcement government system.

are a simple average of four different indicators calculated by the Bank[14]. And it has been demonstrate[15] that a simple average of these institutions indicators may not be a bad approximation for studying the institutional change.

However, the EBDR indicators show basically the evolution of formal institutions. What we want to highlight, before looking at that indicators evolution, is the informal institutions role, which we above described as crucial in the transition. Informal institutions change according to different processes and they strongly condition formal development paths.

Graphically we can imagine the evolution of the two different types of institutions, into the respect of the market, such as Figure 3 shows.

Figure 3
Market Institutions over the Time



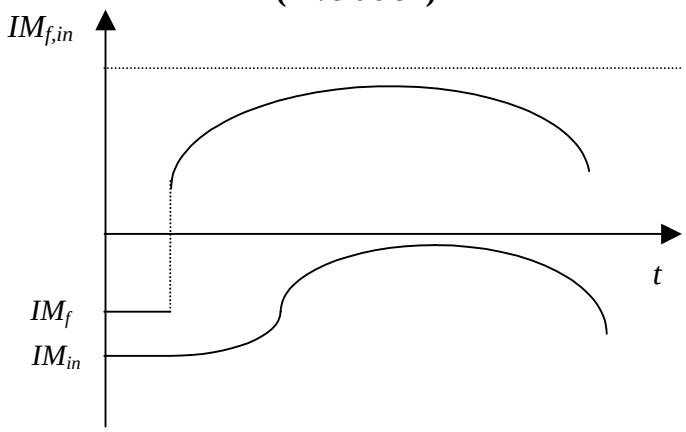
Note: IM_f and IM_{in} are respectively formal and informal institutions.

In Figure 3, the institutional shock happens in t_1, - let us say the communism collapse - generating two different institutions transition patterns: for formal and informal rules. Formal rules - IM_f - make a first significant jump in t_1 and then, they continue increasing their efficiency towards the market. Informal rules - IM_{in} - have instead a very slow reaction in the first period, but then they start improving in order to reach formal institutions path. Informal rules have however a strong influence on formal ones and in t_2, formal rules start involving, in terms of market orientation, because the informal institutions development path has not still reached the former level.

This is just one possible dynamic, or better, a successful one. However, each country has a different starting point, in terms of the institutional framework, which determines each institutions evolution path. For example IM_f and IM_{in} can be closer to the horizontal axis, that is to say with a lesser market attitude. By consequence, not all the countries follow successful development dynamics. In Figure 4 we highlighted a situation in which informal rules do not become positive. In such a way, they influence the formal rules trajectory, which starts decreasing too. If both the formal and informal institutions have a declining trend, as regards to the market wise, then the whole institutional framework will follow a wrong transition path.

[14] They are the institutional performance indicator which denotes the unweighted average of the four transition indicators for banking sector, non-financial institutions, competition policy and enterprise reform and corporate governance; and the liberalisation and privatisation indicator which denotes the unweighted average of the indexes of price liberalisation, forex and trade liberalisation, small and large scale privatisation.
[15] See Raiser, Di Tommaso e Weeks (2000).

Figure 4
Market Institutions over the Time
(involution)



We can express the relationship in such a way:

$$IM = IM_f^{\alpha} * IM_{in}^{\beta} \qquad (10)$$

where α and β represent respectively formal and informal institutions weights on the whole institutions transition. If $(\alpha+\beta) = 1$ then we can write $\beta = (1-\alpha)$ [16].

This functional form allows us to obtain the interdependence between formal and informal institutions. Indeed, if we derive the expression (10) over the time, we obtain:

$$\frac{dIM}{dt} = \alpha IM_f^{\alpha-1} IM_{in}^{1-\alpha} \frac{dIM_f}{dt} + (1-\alpha) IM_{in}^{-\alpha} IM_f^{\alpha} \frac{dIM_{in}}{dt} \qquad (11)$$

where we can see that the weight of the variation over time of formal and informal institutions depends on their share over the whole institutional framework – parameters α and $(1-\alpha)$- but even on the development degree of informal and formal institutions respectively pondered by formal and informal institutions - $\left(\frac{IM_{in}}{IM_f}\right)^{1-\alpha}$ and $\left(\frac{IM_f}{IM_{in}}\right)^{\alpha}$. That means that every change in one of the two institutions "types" strictly depends on the other "type" market development degree.

We can write (11) as:

$$\dot{IM} = c\dot{IM}_f + d\dot{IM}_{in} \qquad (12)$$

where $c = \alpha\left(\frac{IM_{in}}{IM_f}\right)^{1-\alpha}$, $d = (1-\alpha)\left(\frac{IM_f}{IM_{in}}\right)^{\alpha}$.

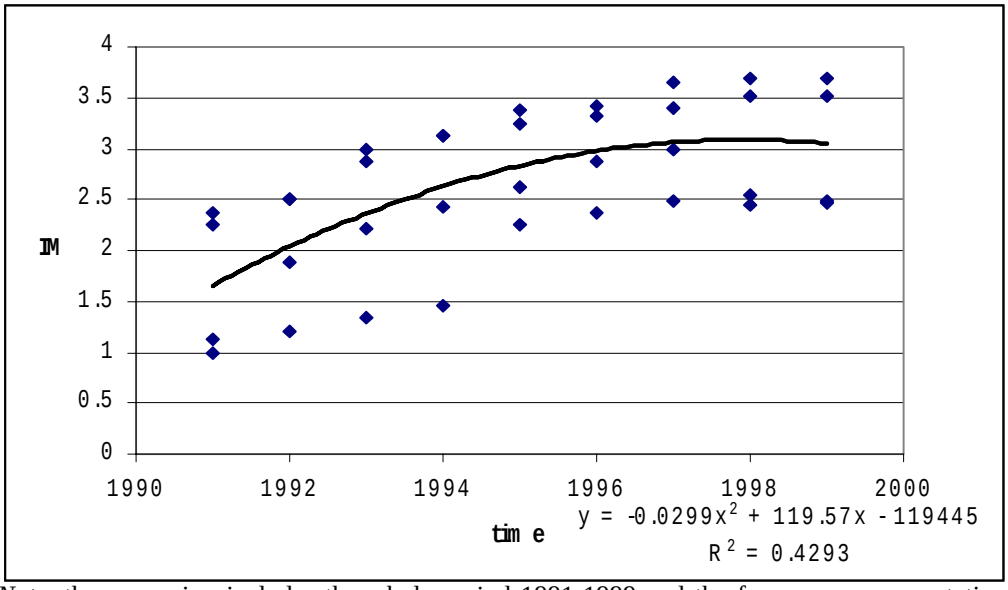
[16] Indeed the institutional framework is composed by formal and informal institutions plus organisations (see the previous section), and if we consider organisations as institutions the whole institutional framework can be represented by the two parameters.

This simple formalisation does not render explicit each institutions "type" dynamics over the time, but it just highlights the importance of the informal institutions in the institutional change and their influence on the formal dynamic development. The more informal (formal) institutions are market oriented, the more formal (informal) institutions can determine the whole change.

Looking at the EBDR indicators on the institutional change and plotting the index *IM* – calculated as the simple average of the eight indicators reported in note 14 - over the time, we have the next figure.

From Figure 5 we can have a confirmation to our previous hypothesis: *IM* improved over the last decade into the respect of market exigencies. What we can not empirically see is the difference in the evolution patterns between formal and informal rules, which remains a theoretical hypothesis.

Figure 5
Market Institutions over the Time
(Empirical Evidence)

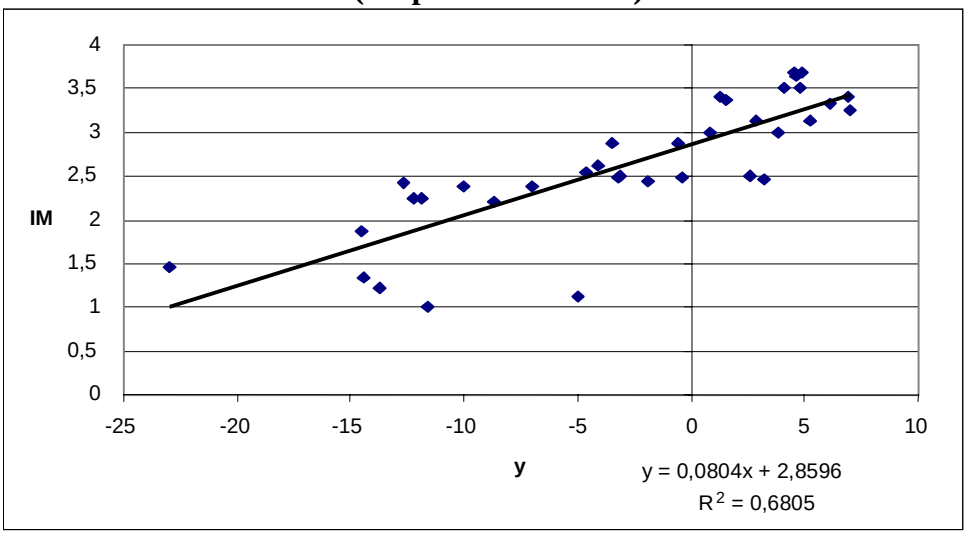


Note: the regression includes the whole period 1991-1999 and the four more representative transition economies: Russia, Ukraine, Poland and Hungary.

Exploring variables which influence both the formal and the informal *IM* changes over time, we have to consider numerous aspects. Economic, social, historical and geographical aspects. It is quite difficult to give a numerical weight to social, historical or geographical aspects. However among economic aspects we may consider the output growth rate *y*. It is clear that it exists a positive influence between the economic growth rate and the institutions "market growth". This is because especially informal rules, which basically fight shy of novelties, adapt faster to "good" novelties.

In the next figure, we plot the output growth rate and the *IM* previous index for all the countries considered and in the whole period analysed.

Figure 6
Market Institutions and Output Growth Rate
(Empirical Evidence)



Note: the output growth rate is the one reported on the EBDR report. The period is 1991-99 and the transition economies considered are Russia, Ukraine, Poland and Hungary.

It is clear the positive relationship among the two variables. Even if we lag the output growth rate of one period we are going to find a quite similar evidence. Then *IM* depends on the economic output growth rate, *y*, according to a linear relationship. Of course, we have to keep into consideration many other determinants, as geography, history or society features in order to have a complete growth model determination.

Moreover, we have to consider the different country development phase in order to give the right weight to the formal or to the informal rules in the institutional transition process. The time *t* - e.g. the development phase - will condition the parameters α and (1-α): in less advanced developing processes, informal rules are more important due to a lack of confidence in formal institutions. That is, α is larger when *t* is bigger, and the opposite is true for (1-α).

Now we can write expression (12) as:

$$\dot{IM}_t = c_t \dot{IM}_f(y) + d_t \dot{IM}_{in}(y) \qquad (13)$$

or, if we consider other determinants than output growth rate as exogenous we can write (13) as:

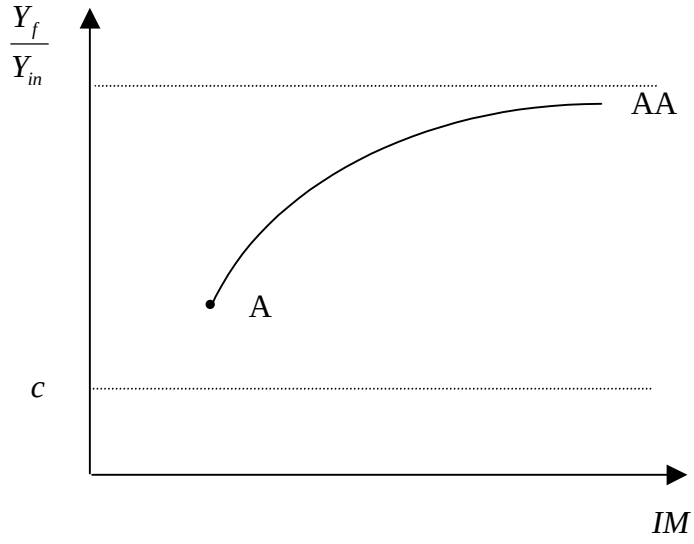
$$\dot{IM}_t = c_t(\overline{IM}_f + my) + d_t(\overline{IM}_{in} + ny) \qquad (14)$$

where $\overline{IM}_f$ and $\overline{IM}_{in}$ includes all the other determinants that we said above – history, geography and society – and which are here exogenously determined; *m* and *n* are parameters which ponder the *y* influence over *IM*.

4.2. Dynamics of the Informal Economy and Market Institutions

Now we explore the relationship between the market oriented institutions development and the informal economy. We put in a positive direct relationship the ratio between the formal - Y_f - and the informal - Y_{in} - economy with our institutions indicator *IM*.

Figure 7
Formal/Informal Economy and Market Institutions



On the ordinates axis we have the ratio between the formal and the informal economy. On the abscissas axis, we have the indicator which shows the institutions efficiency with regard to market rules. Institutions include the whole institutional framework, as organisations, formal and informal rules[17], and their efficiency is basically towards the (formal) market. In order to sustain a marked oriented system is necessary that institutions guarantee free competition in the market, rules for private property respect and easy access to resources. That is, a working incentives system and low transaction costs. The idea of Figure 7 is that the greater is the efficiency of institutions, the bigger should be the part of formal economy into the respect of the informal one.

This is not a univocal relationship. Institutions creation and evolution, are indeed strongly dependent on which side of the economy (formal/informal) develops more. If it is the informal one, even institutions in the economic system will tend towards an informal economic system. Therefore, on the one hand, we expect a rise (decline) in the formal economy share, according to an improvement (worsening) of the marked oriented institutions efficiency indicator. On the other hand, if the formal (informal) economy share rises, we expect further institutions improvement (deteriorations).

In the figure we also drew two broken horizontal lines. The upper one is an asymptote and it indicates that more than a proportion, the informal economy can not be reduced. The lower limit is instead a critical level besides which an economic system can collapse in itself. Curb concavity is explained by the hypothesis that the efficacy of institutions over the ratio between the two economies is greater initially and slower afterwards. After a first improvement, that graphically coincides with a slope smaller than 45 degrees, institutions efficiency needs to improve proportionally more largely than the reduction they can obtain in the informal economy.

The importance of this relationship consists in another relationship. The one between the output growth rate and the proportion of the formal economy on the informal one. In order to maintain this relationship positive, then even the curb AA in Figure 7 needs to have a positive slope.

[17] See the expression (3) in section 3.1.3.

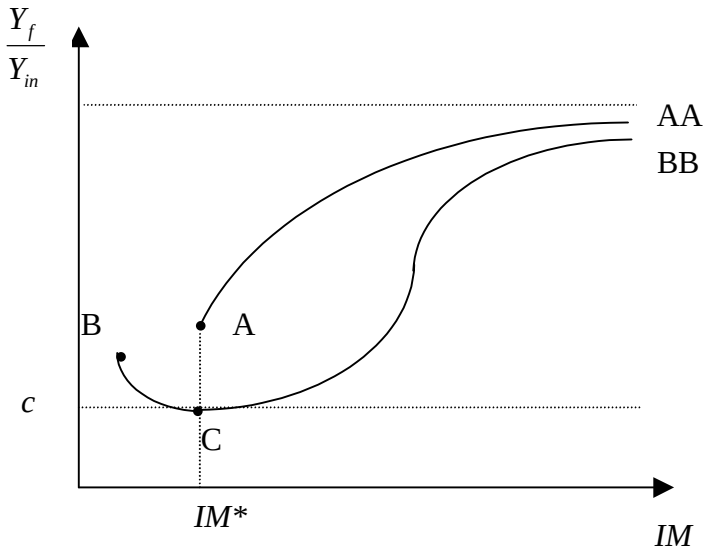
4.2.1. Alternative Scenarios

Figure 7 shows only one possible development trajectory between these two variables.

However, as previously observed, the institutions transition is neither prompt nor automatic. This is basically because of the informal rules role since they do not change if not incrementally. An incremental change, contrary to a radical one, is undergone to the influence of all the aspects of the transition process and this is the reason why the process is endogenous so as the informal rules changes.

We describe now a situation in which efficient institutions can not modify quickly the ratio between formal and informal economy, because of the informal rules resistance. In a second step, instead, the development path becomes strongly positive, with a slope larger than 45°, inverting the change proportion between the two variables and ensuring a successful development path.

Figure 8
Formal/Informal Economy and Market Institutions
(different trajectories)



In Figure 8 we represented the new trajectory BB, comparing it with the previous AA curb, shown in Figure 7. What we called AA is indeed the curb of a "normal" development path in which formal and informal rules run very close: formal institutions transition is not obstructed by informal rules opposition. The BB curb is instead a different and more complicate development path.

In AA the economy is, in its first development phase, at point A with a particular combination between the ratio Y_f / Y_{in} and the institutions efficiency *IM*. Then, due to the development and the improvement of institutions efficiency the economy moves up from point A. In BB the economy is in a worse starting situation, point B, and in its first development phase, even if institutions efficiency increases, informal economy grows. When point C is reached, institutions are at the same efficient point of AA trajectory, e.g. *IM**, which can be considered a level where institutions have to success in contrasting the negative trend of the informal economy.

At the point *IM**, the economy has two possibilities. On the one hand it goes below the critical level *c* and it begins a downwards negative spiral in which informal economy grows

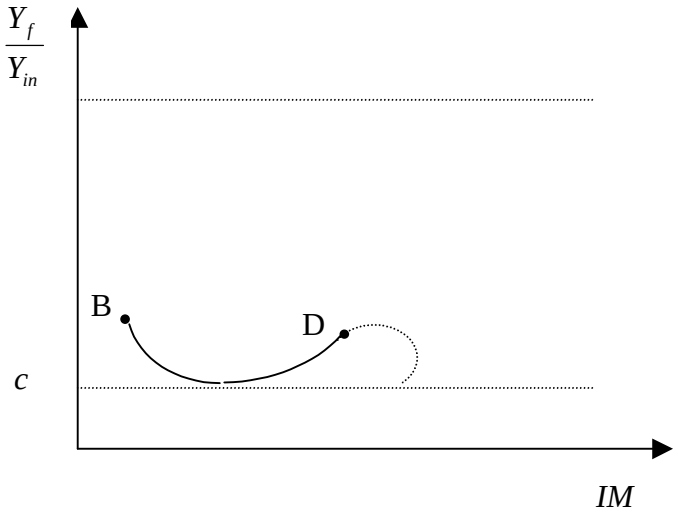
and institutions efficiency decreases. On the other hand it stays up of this critical level and starts a new development path, at the beginning flatter than AA, but after some periods with a similar slope and convergence.

What we represented with the curb BB is closer to transition countries than AA. These countries passed, indeed, to a market oriented system from a socialist one. In this transition informal rules did not change immediately and exerted strong pressures on formal institutions. Shadow economy is one manifestation of these difficulties. After a first phase, until point C, if formal rules are able to trigger with them informal ones, then we will see a reduction in informal economy and an increase in gross domestic output. If not, informal rules will trigger formal institutions in under-developed paths or simply they will trigger formal institutions out of development paths.

In Figure 8, we highlighted just two development paths and we do not want to draw each possible trajectory of development. However we want to show the path dependency of the variables included in the process. The path dependency of these processes is put in evidence by the continuity of these patterns and by the incremental property of every change. Moreover an economic system can take a downward negative path. In order to understand why this can happen we need to look at two other aspects. The slope of the curb, which determines the speed of the development process and all the forces that stay outside of the development paths as AA or BB, which drag the relationship of Figure 8 towards other dynamics.

The speed of the process is important because it avoids, or it allows, an institutionalisation of the deviations from market rules. If a deviation persists for long periods, other dynamics, driven by informal rules, enter in the process of the institutional framework evolution. A possible negative scenario can be drawn as the following figure shows.

Figure 9
Formal/Informal Economy and Market Institutions
(a deviation)



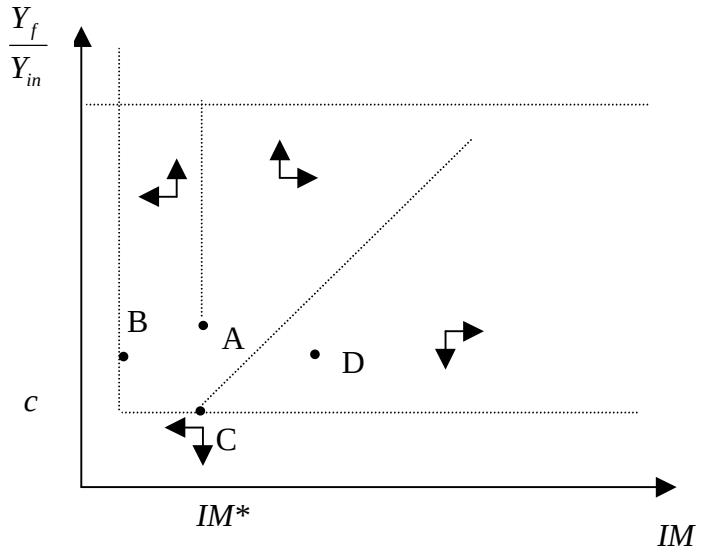
In such a representation, the economic system starts at point B, as the curb BB in Figure 8, but when it reaches D it begins its involution until it arrives to the critical level *c*. In the path from D to the level *c*, not only informal economy starts again increasing, but even institutions efficiency lowers due to an endogenous involution process. In the last part of the curb, - the broken part – the informal rules obstruct the formal market development and heavily

condition the formal and informal market-wise institutions. Moreover when the institutional framework develops situations which tend to involve, even *M* and *G* contribute to worsen the development trajectory, e.g. macroeconomic instability, capitals and technology resources scarcity will speed up the negative path.

A second crucial aspect in determining negative downward spirals is the way of all the forces which stay outside of the development paths. Forces which the evolution process of the institutional framework generates because of the interaction between formal and informal rules.

In the next figure we put in evidence these forces with four arrows couples. We used the following rules: under the critical level *c* and left to the point B (points indicated in the Figure 10 are the same as points in previous figures), forces bring the development path down and left, towards the zero; below the diagonal line which starts in C, with a slope of 45°, forces are downwards attracting, while above the line they are upwards; finally left to the vertical line which starts in A arrows indicate left, and right to the line they go right. The diagonal line is at 45° because this is the slope below which the system needs a proportionally larger change of *IM* to obtain an informal economy reduction.

Figure 10
Formal/Informal Economy and Market Institutions
(forces ways)

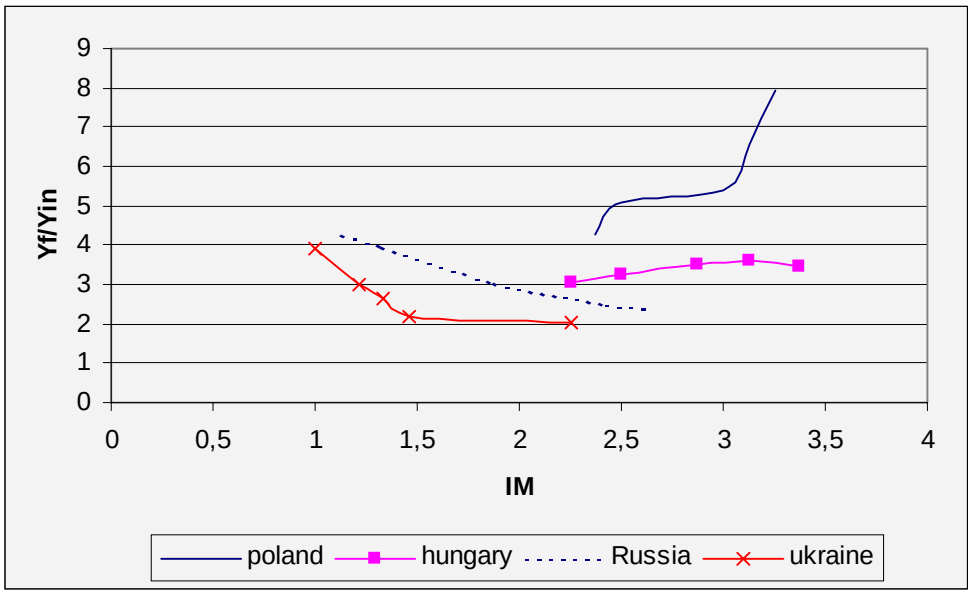


Note: in this diagram we show forces which can deviate a "correct" development path. Points indicated in the figures are the same points of previous figures.

Looking at the empirical evidence[18], we first show the four countries separately considered, Figure 11, and then we plot the same four countries, but without a distinction among them, Figure 12. It seems to emerge that the countries are in different development phases into the respect of market orientation. Indeed Russia and Ukraine, which are in the first declining part of the curb are even the less developed in terms of market economy. Hungary and Poland are instead in the arising part of the curb and they are actually much more advanced in terms of market development institutions and economy. All together they put in evidence a development trajectory in Figure 12 quite similar to the theoretically hypothesised BB curb in Figure 8.

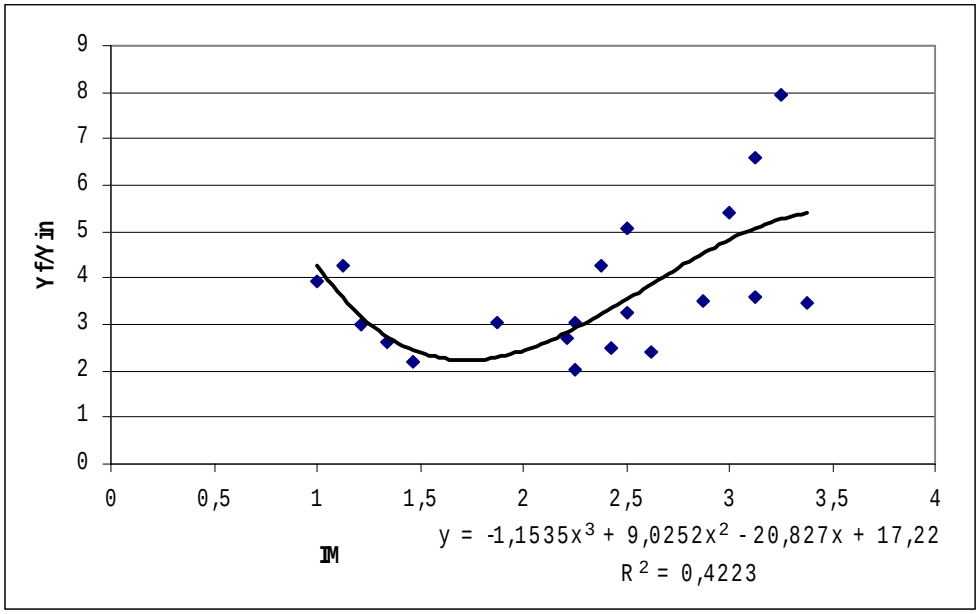
[18] Using again the simple average of institutional change EBDR indicators for *IM* and the informal economy estimates reported in Table 1.

Figure 11
Formal/Informal Economy and Market Institutions Development
(Empirical Evidence)



Note: we put into a relationship the rate of the formal economy on the informal one for the four more representative countries in the period 1991-1995, which is the one available for informal economies estimates.

Figure 12
Formal/Informal Economy and Market Institutions Development
(Empirical Evidence)



Note: we now consider all the countries at the same time.

A formalisation of this relationship highlights the positive correlation between the degree of the institutions market orientation and the formal economy share on the informal one, except for a first development phase in which the parameter is negative:

$$\left(\frac{Y_f}{Y_{in}}\right) = a + \sum_{t=1}^{n} b_t * IM^t \qquad (15)$$

where *a* is a constant, *IM* is our index, *b* is the parameter and *t* the development phase. *t* expresses the development phase, in which the country is when we look at the level of the informal economy with regard to the development of market oriented institutions[19]. In the first phase of the institutions transition the share of informal economy increases, then (from the point B in Figure 8), it decreases, quickly at the beginning and slowly at the end. If we are looking at a non-development path the trajectory will be more similar to the Figure 9.

4.3. The Growth Rate and the Informal Economy

Third expression of the system (9) takes into consideration the relationship between the economic growth rate and the share of the formal economy on the informal one.

Let us consider first the sum of the output of each firm in the country. Every firm can produce either in formal or in informal sectors or in both at the same time.

$$Y = \sum Y_i(F) \qquad (16)$$

where *Y*, the whole economy, is the sum of the all *i*-firms output, Y_i; each Y_i depends on the share of formal (and informal) activity – (*F*) - of the firm "*i*", e.g. Y_f/Y_{in} but for each single firm.

Let us imagine now a country with only four possible firms. Each firm has one different value of *F* and identifies one of the four different situations shown in Table 3. *F* never goes at the extremes values (0 or 1) because we can not imagine an economy completely formal or completely informal, and here we maintain homogeneity between the single firm and the whole system.

Table 3 Firms shares of formal and informal activity

	Formal	Informal
I	(*F*)	(*1-F*)
A	0.9	0.1
B	0.75	0.25
C	0.25	0.75
D	0.1	0.9

Note: *A, B, C, D* are four different firm typologies according to their share of formal and informal economy.

[19] In the Figure 12 each combination between *IM* and Y_f/Y_{in} refers either to a different country in the same period or to the same country in a different period.

Equation (16) becomes:

$$Y = Y_A(0.9) + Y_B(0.75) + Y_C(0.25) + Y_D(0.1) \qquad (17)$$

where each index corresponds to a different firm typology as highlighted in Table 3.

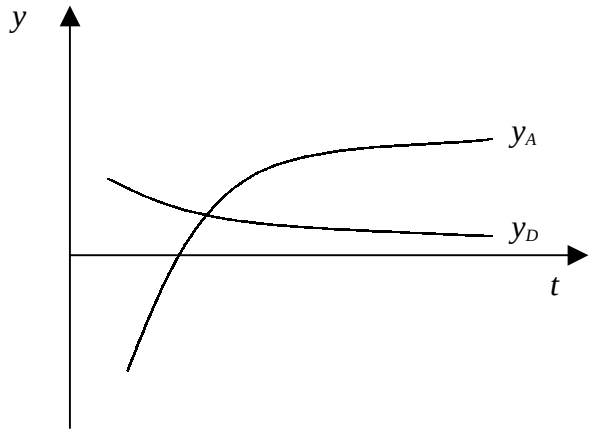
In the expression (17) the aggregate production function is the sum of the firm *A* which produces just in formal sectors, the firm *B* which has just a quarter of its activity in informal sectors, the firm *C* which is mainly in informal activities (three quarters of its activity) and the firm *D* which produces just in informal markets.

Crucial point of our reasoning is that the informal activity can help a firm in the first phase of the economic system development, but in the long term it will damage the economic growth of the whole country. Single production functions, indeed, depend on technology (productivity in general), human and physical capital, but, availability and improvement of these three production factors depend on market rules[20].

Now we have to distinguish between growth rates and aggregate measures.

Expressions (16) and (17) show the economy in aggregate terms, while in the system (9) we used the growth rate *y*. If we consider just firms of type *A* and *D*, and drawing them – in terms of growth rates - in a graph, we could have these two different patterns:

Figure 13
Growth Rates for Formal and Informal Sectors



Note: this figure refers to the growth rates patterns over the time *t* for two different "type" firms, completely formal and completely informal.

In Figure 13[21], we show how initially, the growth rate of a firm which operates just in formal sectors - firm *A* - is definitely lower if not even negative, while during the same development phase, the growth rate of a firm which operates in informal economy - firm *D* - has a positive output growth rate. However, while y_A has a risen path, y_D follows a decreasing trend, due to an increasing productivity gap between the two markets.

[20] We said in the previous chapter as in informal markets do not work concurrence rules and low transaction costs which are basic for the market functioning.

[21] In the equation (16) and (17) we highlighted mix-firms: with a share in informal and a share in formal economy as firm *B* and *C*. From now on, we consider just the two extreme possibilities: all in the formal or all in the informal activity.

Looking at specific firm functional forms, we have:

$$y_{t,A} = \gamma_t(F) * f_t\{K_h, K_P, T\} \quad (18)$$

$$y_{t,D} = \gamma_t(F) * f_t\{K_h, K_P, T\} \quad (19)$$

where γ, which goes from 0 to 1, indicates the production factors potentiality and it changes according to the share of the firm formal activity, *F*; but it even depends on the country development phase, *t*. $f_t\{.\}$ is a generic function with the traditional production factors.

In a firm with just formal activities (type *A*), γ is close to the zero in the first development phase. Then, when *t* becomes larger, it arises until it reaches the unity or, in other words, when it enjoys the full potentiality of the production factors. The opposite case is represented by a firm with just informal activity, type *D*. Here, γ is initially larger than the firm *A* γ. However, in the longer term, the three production factors will loose their potentiality due to the absence of the main market rules. The same reasoning can be done for the firms B and C.

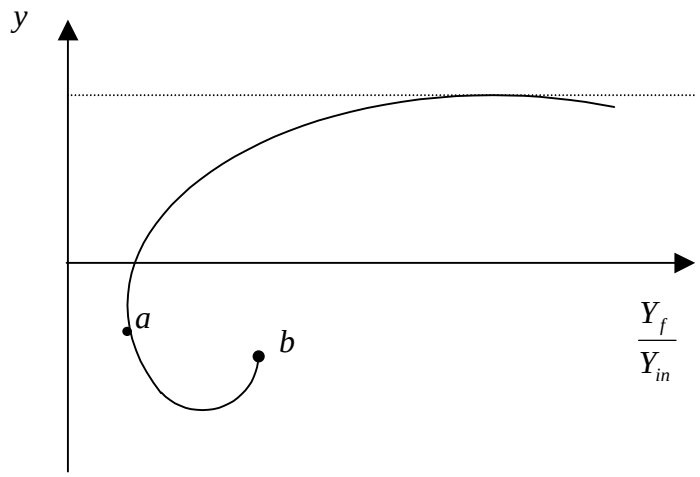
Looking at the country output growth rate (aggregating previous firms output rates) we obtain:

$$y_t = \gamma_t(F_t) * f_t\{K_h, K_P, T\} \quad (20)$$

where *F* is equal to the formal economy proportion in the country. *F* is equal to our previous ratio between formal and informal economy, Y_f/Y_{in}, and it depends on *IM*.

We graphically drew the relationship between the two variables in the Figure 14:

Figure 14
Output Growth Rate and Formal/Informal Economy



where *y* indicates the growth rate - the difference between the output of period *t* and (*t-1*) – and, as previously defined, Y_f and Y_{in} are respectively the formal and the informal economy. *a* and *b* are two points on the curb. The positive relationship between the two ratios is again represented by a concave curb because the growth rate increases larger (than the formal share on the informal one) at the beginning of the process and then it arises slower until it reaches the superior asymptote – the broken line. After having reached the asymptote it will probably decrease, but this dynamic includes factors which are outside of this analysis. The concavity

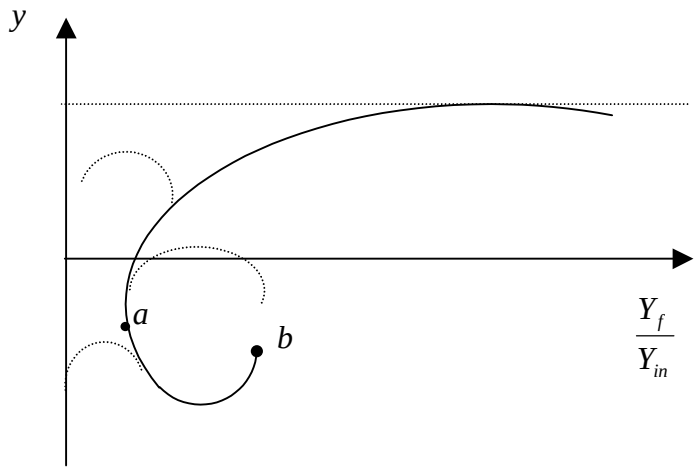
property is just an hypothesis which does not change our first conclusion: a positive relationship between formal economy and growth.

The curb includes also negative values of *y*. Transition economies, just after the transition, were in *b*, with high informal economy and high negative growth rates. Then, there has been a worsening of both the indicators considered and finally for successful development paths, there has been an increase in the informal economy, but even an improvement in the output growth rate. This relationship wants to highlight an important aspect of the informal economy. When institutions do not work perfectly, at the beginning of the transition, informal economy can help the economic system not to stagnate. That is, *y* arises and the formal share on the whole economy declines. However, when the informal economy, after this first development step, does not decrease, institutions marked-wise do not improve and the output production risks to stagnate.

The dynamic of growth described in Figure 14 can not be considered the only possible path followed by the two variables. This can be defined a "successful" development path. Most of the economies after the institutional shock (the collapse of socialist system) found themselves in point *b*, then went to point *a*. In that point, with higher informal economy and lower growth rates, some economic systems started growing and some others went toward worse situations.

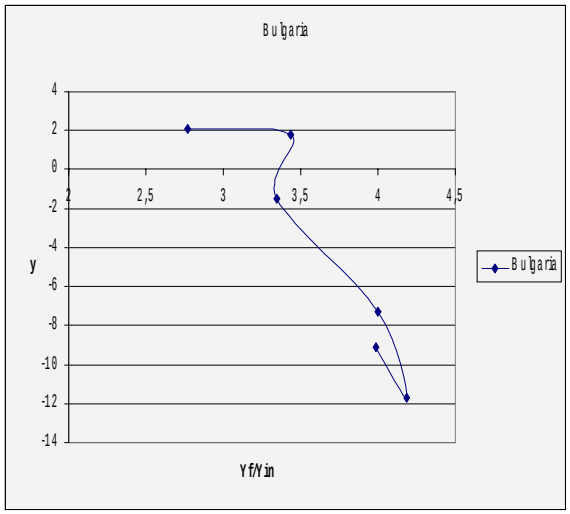
In the next figure we showed, with broken lines, some possible deviations from the development path.

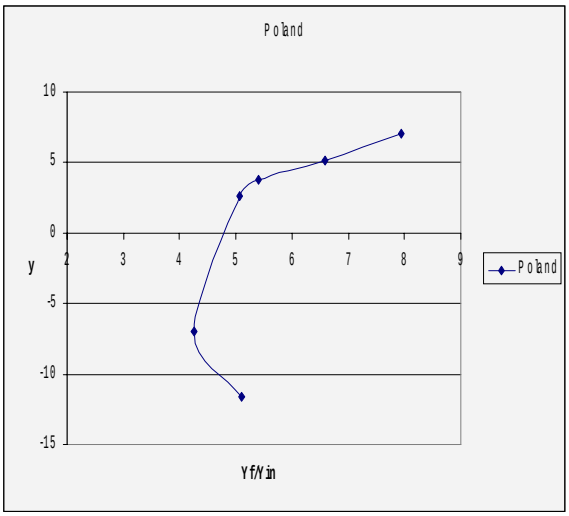
Figure 15
Output Growth Rate and Formal/Informal Economy
(some deviations)

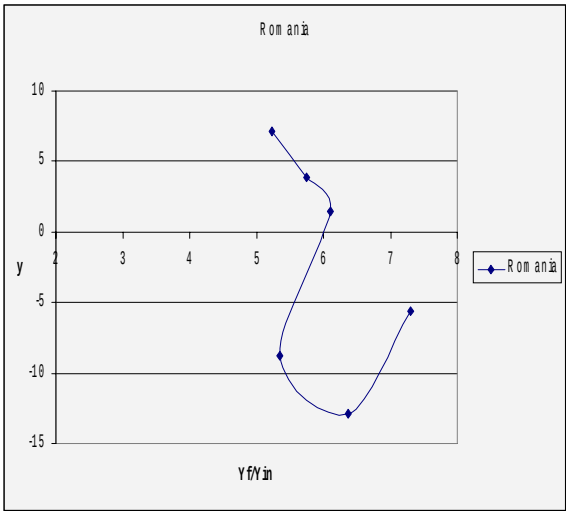


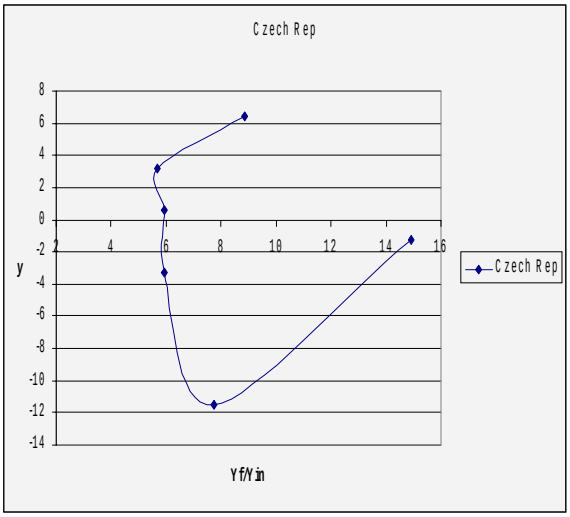
Not all the transition countries followed a successful development path. Poland, Hungary and Czech Republic initially lived in a critical situation: the informal economy grew and growth rate remained negative. Then, in a second phase both ratios improved due to consolidating of marked oriented institutions. In Romania and Bulgaria, the informal economy started from a lower point, then grew so as the growth rate, but in a third phase it collapses under the weight of informal economy. Finally, Russia and Ukraine, had in the first phase negative output growth rate and big informal proportions of economy, but they were not able to invert this trend in a second phase, going in a negative direction: see Figure 16.

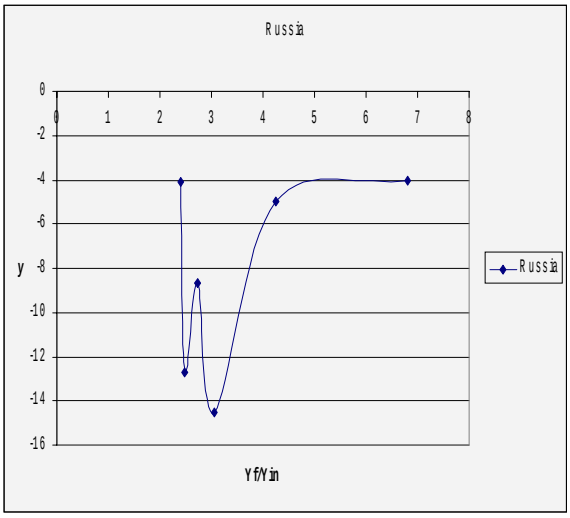
Figure 16
Output Growth Rate and Formal/Informal Economy
(empirical evidence)

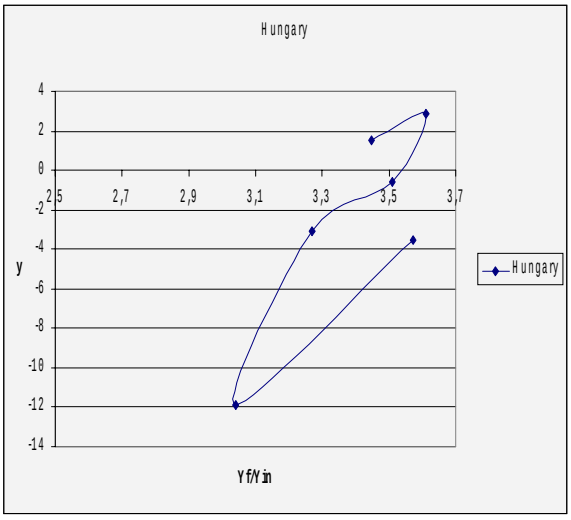












Note: period 1991-1995.

5. Conclusions

The conclusions point out once again the institutions importance in each economic development process as well as in the transition to a market wise system. We showed the informal economy relevance in Eastern European countries and we imputed it to the market institutions development. The more they are market oriented, the more the informal economy is low with regards to the formal one.

We studied a three variables circle: institutions, output growth rate and informal economy. On the one hand we put in evidence the big difference between formal and informal institutions in front of an institutional shock. While the formers can adapt almost immediately to the new system exigencies, the latter need much more time and change just incrementally. Therefore, the institutional framework born on it was imperfect and it gave rise to alternative market forms. On the other hand, we highlighted the informal economy role on the whole economic system growth. The informal economy has a very little potentiality due to its high transaction costs. However, at the beginning of the transition, the formal markets have even higher transaction costs. And the formal economy risks to stagnate because of the inability of the "new" market institutions to efficiently regulate the system. In such a way, the informal economy becomes not only a way to escape taxes and heavy bureaucratic regulations, but it really becomes the only way to produce. Finally, after a first development phase, the informal economy needs to be reduced in order to liberate energies for the formal market.

This reasoning is basically supported by some stylised facts, which put in evidence differences among countries so as differences in the development paths. I believe this paper is just a first attempt to find a relationship between the economic growth and the informal economy during an institutional change. Further theoretical research and further data availability will help us to go more in deep in this field.

References

Barro, Robert (1991), "Economic Growth in a Cross Section of Countries", *Quarterly Journal of Economics,* 106 (2), pp.407-444, May 1991.

Basu, Susanto and David Li (1998), "Corruption in Transition", WDI, Working Paper No.161, May 1998.

Baumol W. (1986), "Productivity Growth, Convergence and Welfare: what Long-Run Data Show?", *American Economic Review*, December 1986.

Blanchard Olivier (1997a), *The Economics of Post-Communist Transition*, Clarendon Press, Oxford.

Blanchard Olivier and Michael Kremer (1997b), Disorganisation, *Quarterly Journal of Economics*, 112 (4), pp.1091-1226.

Brown Annette e David Brown (1998), "Does Market Structure Matter? New Evidence from Russia", *Russian-European Centre for Economic Policy*, Working Paper No.2, Moscow, June 1998.

Brunetti A. (1997), "Politics and Economic Growth", *OECD*.

Bruszt Laszlo (2000), "The Russian Lesson: A Market Economy Needs an Effective State", *Transition Newsletter*, Vol. 11, no.3-4, May-June-July 2000.

Carlin, Wendy, Steven Fries, Mark Schaffer and Paul Seabright (2000), "Barter and Non-Monetary Transactions in Transition Economies: Evidence from a Cross-Country Survey", Center for Economic Reform and Transformation, Discussion Paper No. 2000/04.

Casey T. (1998), "Economic Policy, Institutions and Economic Growth in an Era of Globalisation", *The Journal of Social, Political and Economic Studies*, Vol. 23, No.4, Winter 1998.

Clague Christopher (1992), "From Socialism to Market: Changing the Rules of the Game", *IRIS Center*, Working Paper No.22.

Clague Christopher (1997), *Institutions and Economic Development: Growth and Governance in Less-Developed and Post-Socialist Countries*, Johns Hopkins University Press, Baltimore.

Commander, Simon e Christian Mumssen (1998), "Understanding Barter in Russia", *EBDR*, Working paper No.37, December 1998.

Crafts N. (1999), "East Asia Growth Before and After the Crisis", *IMF Staff Papers*, Vol. 46, No.2, June 1999.

Dobozi Istvan e Gerhard Pohl (1995), "Real output Decline in transition Economies-Forget GDP, Try Power Consumption Data!", *Transition Newsletter*, Vol. 6, no.1-2, January-February 2000.

EBDR (2000), *Transition Report 2000*, EBDR, London.

Eggertsson Thrainn (1997), "The Old Theory of Economic Policy and the New Institutionalism", *World Development*, Vol. 25, No.8.

Enste Dominik e Friedrich Schneider (1998), "Increasing shadow Economies All Over the World- Fiction or Reality?", IZA, Discussion Paper No.26, December 1998.

Fisher S., R. Sahay and C. A. Végh (1998), "From Transition to Market: Evidence and Growth Prospects", IMF Working Paper No. 98/52.

Fogel R.W. (1990), "Douglass C. North and Economic Theory", in *Economic Behaviour and Institutions* edited by T. Eggertsson, Cambridge University Press, Cambridge.

Fortin Bernard, Guy Lacroix e Claude Montmarquette (1997), "Are Underground Workers More Likely To Be Underground Consumers?", CIRANO, Working Paper No.97 s-28, Montreal, Juin 1997.

Furubotn Eirik and Rudolf Richter (2000), *Institutions and the Economic Theory*, The University of Michigan Press.

Gaddy Clifford and Barry W. Ickes (1999), "Stability and Disorder: An Evolutionary Analysis of Russia's Virtual Economy", WDI, Working Paper No.276.

Guriev Sergei e Dmitry Kvasov (1999), "Barter in Russia: the Role of Market Power", Russian-European Centre for Economic Policy, Working Paper No.3., Moscow, August 1999,.

Hall R. and C. Jones (1999), "Why do Some Countries Produce So Much More Output per Worker Than Others?", *The Quarterly Journal of Economics*, Vol. 114, No.1, February 1999.

Johnson Simon, Daniel Kaufmann, and Pablo Zoido-Lobatón (1999), "Corruption, Public Finances, and the Unofficial Economy", World Bank, Working Paper No.2169 August 1999.

Kaufmann Daniel e Aleksander Kaliberda (1996), "Integrating the Unofficial Economy into the Dynamics of Post-Socialist Economies: a Framework of Analysis and Evidence" in *Economic Transition in Russia and the New states of Eurasia* edited by Kaminski.

Kaufmann Daniel e Shang-Jin Wei (2000), "Does "Grease money" speed Up the Wheels of Commerce?", *IMF* Working Paper No.64, March 2000.

Koslowski R. (1992), "Market Institutions, East European Reform and Economic Theory", *Journal of Economic Issues*, Vol. XXVI, No.3, September 1992.

Levine R. and D. Renelt (1992), "A Sensitive Analysis of Cross-Country Growth Regressions", *American Economic Review*, September 1992.

Mankiw G., D. Romer and D. Weil (1992), "A Contribution to the Empirics of Economic Growth", *Quarterly Journal of Economics*, No.107, May 1992.

Moers Luc (1999), "How Important Are Institutions for Growth in transition Countries?", *Journal of Economic Literature*, 16 February 1999

Mokrzycki E. (1995), "Class Interests, Redistribution and Corporatism", in *Democracy, Civil Society and Pluralism in Comparative Perspective* edited by C. Bryant and E. Mokrzyscki, IFIS Publishers, Warsaw.

North Douglass (1990a), "Prologue", in *Economic Behaviour and Institutions* edited by T. Eggertsson, Cambridge University Press, Cambridge.

North Douglass (1990b), *Institutions, Institutional Change and Economic Performances*, Cambridge University Press, Cambridge.

Olson Mancur (1971), *The logic of Collective Action. Public Gods and the Theory of Group*, Harvard University Press, Cambridge, Mass.

Olson Mancur (1982), *The rise and Decline of Nations*, Yale University Press, US.

Olson Mancur (1991), *Autocracy, Democracy and History with Appendix: an Abstract Model of Autocratic Versus Democratic Government*, IRIS Center, WP No.22.

Olson Mancur (2000), *Power and Prosperity. Outgrowing Communist and Capitalist Dictatorships*, Basic Books.

Prizel I. (1999), "The First Decade after the Collapse of Communism: Why Did Some Countries Succeed in Their Political and Economic Transformations While Others Failed", *SAIS Review*, Summer-Fall 1999.

Raiser, Martin (1997), "Informal Institutions, Social Capital and Economic Transition: Reflections on a Neglected Dimension", EBDR Working Paper No.25.

Raiser, Martin, Maria L. Di Tommaso, Melvyn Weeks (2000), "The Measurement and Determinants of Institutional Change: Evidence from Transition Economies", EBDR Working Paper No.60.

Recanatini Francesca e Randi Ryterman (2000), "Disorganisation or Self-Organisation?", *Journal of Economic Literature*, March 2000.

Schneider Friedrich (1999), "Shadow Economies around the World: Negligible or a Concern for Policy Makers?", summary of the study *Shadow Economies around the World: Size, Causes and Consequences* by F. Schneider and D. Enste, WP, Department of economics, University of Linz, Linz, Austria.

Temple J. and P.A. Johnson (1998), "Social Capability and Economic Growth", *The Quarterly Journal of Economics*, Vol. 113, No.3, August 1998.

Voigt S. (1993), "Values, Norms, Institutions and the Prospects for Economic Growth in Central and Eastern Europe", *Journal des Economistes et des Etudes Humaines*, Vol. 4, No. 4, Decembre 1993.

Williamson D. (1998), "Economic Development and the Limits of Institutionalism", *SAIS Review*, Winter-Spring 1998, Vol.18, no 1.

Williamson O. (1995), "The Institutions and Governance of Economic Development and Reform", in *Proceedings of the World Bank Annual Conference on Development Economics 1994*, EBDR.

Zinovieva Irina (1998), "Why Do People Work If They Are Not Paid? An Example from Eastern Europe", WDI, Working Paper No.206, May 1998.