IMF LOANS AND MORAL HAZARD

by

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Abstract

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The paper approaches the issue of moral hazard, associated with loans, given out by the International Monetary Fund to the transition countries. The general hypothesis examined is that, given the current framework of relationships between the IMF and governments of the transition countries, the IMF loans do not contribute to incentives to reform and lead to losses for the economies as a whole.

The case is modeled as the dynamic game between the IMF on one side and a government of a transition country on the other. The analysis of the model shows that the equilibrium depends upon the commitment of the government to the whole-scale market reform (defined through the institutional framework of a well-functioning market economy). The moral hazard occurs in case of the uncommitted government and results in time lost which could have otherwise been used for implementation of sufficient market reform, as well as in imposition of the debt burden on the country, to be paid back by taxpayers.

Some empirical analysis performed shows that the IMF's lending to transition economies has been rather unsuccessful in facilitating the transition process. It is also concluded that the model developed has rather good power in explaining the fact of the continuing IMF's lending to the non-reforming governments of transition countries.

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# GLOSSARY

**IMF, The Fund**  The International Monetary Fund

**Moral hazard**  loss-producing propensities of the agent assured

**NE**  Nash equilibrium (of the game)

**SDR** Special Drawing Rights

INTRODUCTION

This paper approaches the issue of moral hazard, associated with loans, given out by the International Monetary Fund to the transition countries. The general hypothesis examined is that, given the current framework of relationships between the IMF and governments of the transition countries, the IMF loans do not contribute to incentives to reform and lead to losses for the economies as a whole.

The nature of the problem lies within the fact that, although IMF and similar organizations loan significant financial resources to transition economies, for promises to implement reforms, it is in some instances problematic to believe that the borrowers will have incentives to keep their promises. There have been numerous cases of IMF lending more and more money to countries not actually meeting the ends for which previous loans had been made. This problem is pointed out in Calomiris (1998) mostly with respect to Asian and Latin American economies. This work is an attempt to review the case of transition economies and investigate whether the loans given out by the IMF contribute to reform incentives of governments as they are supposed to do. The background information pertaining to the problem is described in Chapter Two and includes description of actors, markets and institutions, survey of relevant literature and brief explanation of methodology of research.

The case is modeled as a dynamic game between the IMF and a government of a transition economy. The relevant model is developed in detail in Chapter Three

for cases of committed and uncommitted government. The game is shown to have different equilibria for different cases. The model concludes that in the case of a government uncommitted to whole-scale market reform interaction between the government and the IMF results in moral hazard consequences. Moral hazard manifests itself in delayed reforms and/or increased debt burden to be paid by taxpayers of the borrowing country.

Chapter Four includes some general empirical analysis in light of the model. Progress in transition is confronted with the data on use of the IMF loans for 25 transition countries. The case of Ukraine is given more detailed consideration. The chapter concludes that the model developed has good power in explaining the relationships of almost all of the transition economies with the IMF. The model also seems to explain well the fact of continuing provision of the loans to the non-reforming governments by the International Monetary Fund.

The last chapter of this work summarizes conclusions drawn from the previous chapters, and also presents implications for the IMF policy in relation to the transition countries. It concludes that the IMF involvement has in general been unsuccessful in trying to facilitate transition process. In addition, the Fund could have avoided or mitigated the inefficient use of its resources by taking appropriate measures to reduce information asymmetry about the reform commitment of the government and by being more strict in cases of non-implementation of the agreed reforms.

BACKGROUND INFORMATION

Section 1

Description of Market, Actors and Institutions

As can be inferred from the title, the action will take place on the "market" for IMF loans. The word market is in brackets as the nature of the IMF borrowing is different from that of the common market for financial resources. The countries are borrowing money allegedly for the purpose of achieving macroeconomic stabilization, mitigating consequences of financial crises and, in case of transition, reducing cost of transition to the market based economy. The price of the loans is determined in a way, much different from that of the credit market (IMF, 1998).

The specific issue discussed is the relationships between the IMF and governments of transition economies. Generally, the process of transition requires substantial changes in the economic system forcing the government to borrow. The borrowing can be from the central bank or from the external sources (e.g., Hansen and Cook, 1999). The former has been shown to lead to hyperinflation and therefore governments of transition economies have resorted to the external borrowing. Although borrowing from the IMF is just one type of such attraction of financial resources, it deserves specific consideration. The rationale for this is that the IMF lends money to transition countries to support the general programs of economic reforms, approved jointly by the Fund and the government (IMF, 1998). If we take other sources of external borrowing, they

will be different from the IMF. The IBRD lends for specific projects, mostly at the infrastructure or regional level. Borrowing at the Eurobond market, the government of a transition country just attracts resources offering high interest rates: i.e., Eurobond market is just the ordinary credit market.

The actors on the "market" are governments on one side and the IMF on the other. Governments play the role of borrowers and the IMF is the lender of the money. This is, however, the somewhat simplified definition of actors, as the actual "play" takes place between representatives of the IMF on one side and representatives of governments on the other. Moreover, actions of players, especially decisions taken by the IMF, are also influenced by governments of the most developed countries, such as the United States of America or other G7 countries. In fact, as can be inferred from IMF (1998), G7 seven countries have the effective majority of votes with the organization. The most distinguishing feature of the institutional framework of relations between the IMF and the less developed countries is that they are rather well defined on one hand, yet quite case-specific on the other, depending upon actual persons acting on our "market". Ability to negotiate plays quite an important role on any credit market, but importance of diplomacy on the market for IMF loans is in some instances crucial.

Let us look more closely at the institutional framework of relationships between the International Monetary Fund and the countries to which it lends. The first thing to consider is the nature and organization of the International Monetary Fund. The IMF perceives itself as "… a cooperative institution that 182 countries have voluntarily joined because they see the advantage of consulting with one another in this forum to maintain a stable system of buying and selling their currencies so that payments in foreign money can take place between

countries smoothly and without delay" (IMF, 1998, p. 1).  There is no doubt that the Fund was indeed established for the above-described purpose.  However, the actual actions of the IMF go much further, and we can quite easily understand why.  The exchange rate of a currency is merely one indicator of various processes, going on in the economy and there are usually many factors underlying balance of payments and exchange rate difficulties.  Thus, there is another crucial form of activity of the IMF (and the one we will be interested in).

The International Monetary Fund lends money to members having trouble meeting financial obligations to other members, but only on condition that they undertake economic reforms to eliminate those difficulties for their own good and that of the entire membership.  Thus, the institutional framework this paper is to discuss is that of IMF lending to the countries experiencing financial difficulties.  However, for the purposes of this thesis we will deal with transition countries, which present a rather extreme case in a sense of both the amount of reforms that oftentimes need to be implemented, and the possible non-implementation of the reforms agreed upon.

On joining the International Monetary Fund, each country contributes a certain amount of money called a quota subscription, as a sort of credit union deposit.  Those quotas serve various purposes, the most relevant for our purposes of which is that those contributions serve as basis for determining how much the contributing member can borrow from the IMF.  Roughly speaking, the IMF is the lender of last resort for the countries in trouble.  It lends money to governments at rather low interest rates.  Each member state can over a period of years borrow cumulatively three times what it paid as a quota subscription (IMF, 1998).  This limit, however, does not apply to loans under the IMF's special facilities.  For instance, in December 1997 the IMF initiated the Supplemental

Reserve Facility to provide short-term financing to members faced with a sudden and disruptive loss of market confidence. Korea was the first country to use the SRF (ibid.).

According to IMF (1998), in lending to a member more than initial 25 percent of its quota, the IMF is guided by the following two principles. First, the loan has to be repaid as soon as the payments problem is solved. And second, before the IMF releases any money from the pool, the member must demonstrate how it intends to solve its payments problems so that it can repay the IMF within its normal payment period of three to five years (which can in certain cases be extended up to ten years). Thus, the Fund releases money on condition that it is used in the efficient way. Along with the request for a loan, the potential borrower presents to the IMF a plan of reform[1], typically undertaking to reduce government expenditure, tighten monetary policy and deal with certain "structural" weaknesses (such as the need to privatize inefficient public enterprises). The IMF's main concern is that the policy changes are sufficient to overcome the member's payments problem and do not cause avoidable harm to other members. Depending upon the seriousness of the payments problem and the amount the member wishes to borrow, the Executive Directors, representing the entire membership, judge whether the reform measures are in fact sufficient and whether the IMF can reasonably expect repayment (IMF, 1998). The very word "judge" implies some ambiguity, not to mention that the tone of sentence above assumes that the reforms will be implemented, which is an assumption of

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[1] There is a common accusation in different countries that the IMF dictates policies to the less developed countries (e.g., World Bank, 1999, Markus, 1998). The IMF (1998) suggests that it is the governments that decide which policies are appropriate; on the contrary, the Fund employs quite a few experts who can tell the government what is appropriate for it. In the end, there is no way to tell who actually determines needed reforms, although ultimate decisions are said to be taken by the governments. However, there have been numerous instances (for instance, in Russia and Ukraine) of IMF insisting on policies it advises, threatening to withdraw the tranche in case of noncompliance (e.g., Radio Free Europe, 1997, BBC, 1998, Fox News, 1999)

questionable reasonability, given actual recent experiences of transition countries. Besides, the IMF does not seem to have any means to actually enforce implementation of reforms. Moreover, as stated on the official IMF web site, "… the IMF has no effective authority over the domestic policies of its members" (IMF, 1998, p. 1).

In this thesis I will not focus on actual policies advised by IMF (or suggested by governments, as it is rather difficult, to my mind, to identify who is actually in charge – see footnote 1). This work will not attempt to examine potential or actual effects of those policies. Rather, its focus will be on incentives faced by the governments of the transition countries for implementation of reforms, as well as those of the IMF for lending and continuation of the loans.

Section 2

Survey of Literature

The supposition that both the international lending institutions and less developed countries may have perverse incentives with respect to lending and reform (i.e., less developed countries do not have incentive to reform but rely on international borrowing, while international lending institutions have incentives to continue providing loans) has been pointed out by William Easterly in his work "Ghost of Financing Gap" (Easterly, 1997). However, in his work Easterly examines how international lending institutions (in particular, the World Bank and the EBRD) continue to be misled by Harrod–Domar model of economic growth. Thus, although his work does not seem to mention moral hazard directly, it can be deemed relevant. Easterly (1997) points out the fact that there is the possibility that international lending organizations do not (moreover, given the current situation, they cannot) contribute to economic growth of the less developed countries.

The very notion of moral hazard has originally been tied to the insurance markets, and is generally considered with this regard in research (for example, Marshall, 1976; Pauly, 1968). The same type of application seems to be common for western microeconomics textbooks (e.g., Varian, 1996). However, the definition of moral hazard that is most attractive implies possibility of its wider application. Pauly borrows the following definition of the moral hazard from Dickerson (1963): moral hazard is defined as "the intangible loss-producing propensities of the individual assured" (Pauly, 1968, p. 535). For our purposes we will rephrase this definition to define moral hazard as "loss producing-propensities of an agent assured".

However, certain amount of theoretical academic efforts employing the moral hazard theory have also been made in other fields of economic analysis, as suggested by such works as "Pareto Optima and Competitive Equilibria with Adverse Selection and Moral Hazard" (Prescott and Townsend, 1984) "International Lending with Moral Hazard and Risk of Repudiation" (Atkeson, 1991), "Workers' Compensation and Moral Hazard" (Dionne and St-Michel, 1991), etc.

Calomiris (1998) goes rather deep and wide into examination of various problems, associated with the IMF and US Treasury global financial bailouts, specifically those of moral hazard and impediments for the reform process. The author uses examples of crises in Asia, Mexico and Latin America to demonstrate that "The principal lesson of the recent bailout programs managed by the IMF and the U.S. government … is the vital needs for all parties … to find a credible way to commit not to sponsor such counterproductive bailouts" (Calomiris, 1998, p. 2). The author also believes that the IMF and the U.S. government contribute to the moral hazard problem by lending legitimacy to domestic bailouts by providing conditions that call for taxation of the domestic middle class to repay the bridge loans from the IMF and the U.S. government, as well as by insulating foreign creditors (especially banks) from losses during those crises. The most important implication for transition economies indicated in this article is the statement that "IMF and U.S. government can undermine the incentives that encourage the liberalization process" (ibid., p. 12) thereby undermining process of economic reform in developing economies.

Attempts to model moral hazard associated with international lending and incentives to reform have been made, for instance, by Burkart and Wallner (1999), Kletzer (1984), and Atkeson (1991). All three above-mentioned articles

use the tools of game theory. Burkart and Wallner examine the problem of enlargement of a club; their article focuses on the recent enlargement of the European Union. However, the model examines the issue of reform incentives. Atkeson (1991) examines

> *"… constrained optimal pattern of capital flows between a lender and a borrower in an environment in which there are two impediments to forming contracts. The first impediment to contracting arises from the assumption that lenders cannot observe whether borrowers invest or consume borrowed funds. This assumption leads to a moral hazard problem in investment. The second impediment arises from the assumption than a borrower, as a sovereign nation, may choose to repudiate its debts." (Atkeson, 1991, p. 1069).*

The Nash Equilibrium solution that he suggests is the optimal contract which is "… to specify that the borrowing country experience a capital outflow when the worst realization of national output occur" (ibid.) Kletzer (1984) studies the issue of asymmetry of information associated with sovereign borrowing. It can be concluded that the methodological approach we will use in this work is not novel and has already been applied to similar issues. However, the framework of our model is different from the one of the above mentioned works.

Section 3

Thesis Question, Data and Methodology

The nature of the problem lies within the fact that, although IMF and similar organizations loan significant financial resources to transition economies, for promises to implement reforms, it is in some instances difficult to believe that the borrowers will have incentives to keep their promises. There have been numerous cases of IMF lending more and more money to countries not actually meeting the ends for which previous loans had been made. There is a good reason to believe that IMF loans are associated with moral hazard. It is the purpose of this work to examine relations between the IMF and the transition countries to identify whether the role of the IMF contributes to perverse incentives of governments of those countries to delay implementation of reforms.

The case is modeled using tools of the game theory. The model has the form of the dynamic sequential game between the IMF and the government of a transition country. The model identifies strategies and payoffs of the players, as well as equilibria for different cases. The purpose of the model is to show what incentives the government has to whole-scale market reform with and without IMF loans, as well as to discuss results of such incentives for the economy as a whole, taking into account equilibria defined.

The next stage of the research is examination of the actual relationships between the IMF and transition economies in light of the model developed. For this purpose general data on progress in transition and disbursement of the IMF loans will be used. Based on this data general conclusions about the explanatory power of the model will be made. Also, I will try to make some conjectures about the possible future development of the IMF-government relations, in light of the model and with specific emphasis on Ukraine.

MODEL

Section 1

Model Specification

The relationships between the IMF and a government of a transition country are modeled in this Chapter as a dynamic game, which is assumed to be played finite number of times. The below described model identifies players, strategies and payoffs, and determines equilibria for different cases.

The players of the game are IMF and a government of a transition country. It is assumed that players are fixed and 'politically neutral' to each other. On one hand, the government's commitment to whole-scale market reform does not change in course of the game; on the other hand, the relationships are assumed not to be affected by actions of the government outside of the realm of market reforms (such as war in Chechnya).

From the outset, the IMF is the first player to move. But as the game starts only if and after the Fund has made its first disbursement, for the purposes of our model the first move is made by the government. After playing one of its strategies, the government may ask for more money from the IMF (indeed, the institutional settings of the IMF loans provides for disbursement of funds in tranches) and then it is the IMF's turn to disburse or not to disburse. The game is assumed to end if the country has completed the process of transition to the

market-based economy, or when the Fund is no longer willing to provide loans "collateralized" by promise to reform to a government of the transition country.

So, in the previous paragraph we have defined the set of strategies available to the IMF: it can either disburse or not disburse the tranche. If we denote the set of the Fund's strategies as $F$, then

$$F = \{Yes, No\} \tag{1}$$

Definition of the strategies available to the government requires some additional consideration. These strategies will be defined through implementation of reforms. Of course, the very term "implementation of reforms" is somewhat fuzzy but we may safely assume that reforms will be the main decision variable the Fund will use in making decisions concerning further disbursements. For our purposes we define the following three pure strategies available to a government at each stage of the game:

- do not reform (can also be termed status quo strategy);
- reform partially (adjustment strategy); and
- reform fully (liberalization strategy).

In mathematical terms, we denote the level of reforms through $X$, implying, similarly to (1), that

$$X = \{X_0, X_P, X_F\} \tag{2}$$

This set of strategies is somewhat similar to the three strategies (preservation, protection and competition), described by Hansen and Cook (1999). Yet, what Hansen and Cook define are more like pure types of general directions of the

government policy and what is actually observed is some rather complex mix of the those pure types. Whereas the strategies of our game define rather a short-term realized performance of a government with respect to the market-oriented reform to facilitate the transition process. Yet, the problem of distinguishing between the strategies remains. Indeed, the degree of reform is a rather relative issue and defining whether the level of reform observed in the short term is indeed the start of the full reform may not always be easy. This fact is the key to understanding the *asymmetry of information* involved in our model: at the initial stages of the game the Fund cannot know whether the full reform will follow in the long run, while the government can be assumed to possess this information. Moreover, probably the only way the Fund can tell whether there is a possibility of implementation of the whole-scale reform is by observing what has been done; this issue will be expanded in the last chapter.

Before we proceed to investigating payoffs of the game, it is crucial to establish how reforms will be defined and what reform effort constitutes full reform. With respect to the former issue, there can be basically two approaches: we may define reforms either through some basic conventional macroeconomic indicators (such as GDP, CPI, and unemployment) or through the structural reforms. Bearing in mind that transition process is ideally perceived as transformation of a centrally planned economy into market type one, we can state that the goal of this transformation is creation of the competitive market environment. The role of establishment of the proper institutional framework has been recognized a crucial art of the transition process (e.g., Rodrik, 1999, Cheung, 1986). With this regard it seems better to use the structural reform indicators to define progress in reform. A good example of such indicators are EBRD Indicators of Progress in Transition (EBRD, 1999), which will be frequently used further in this work. The

specific values of those indicators corresponding to whole-scale market reform for the purposes of our model will be discussed in the next chapter.

Having identified strategies available we can now proceed to payoffs of our game, which is a more difficult task. Let us start with the IMF, as the situation here seems to be somewhat simpler. The payoff function of the Fund (to be denoted $U_{IMF}(X,F)_T$ where $T$ stands for the corresponding stage of the game) can be related to the level of reforms implemented by the governme nt. For any given strategy (of the two available) this function will be strictly increasing in reforms and I believe this information on the function is enough as long as a single strategy is concerned. However, the IMF has two strategies available to him and the major issue is therefore about how its payoff function is related to these strategies. With this regard, we can state that the Fund's perception of his utilities will be affected by reputation concerns. On one hand, non-disbursement of funds lowers the reputation of a borrower, increases borrower's internal instability and may prove risky for the IMF's reputation; on the other hand, continuing support of the government making insufficient (including none) effort to facilitate transition and enable sustainable economic growth also hurts the Fund's reputation.

It is reasonable to assume that initially, the disbursement strategy is likely to dominate the non-disbursement strategy for the reputation and stability reasons outlined above. However, this dominance may become weaker or even disappear over time in case the government fails to implement full reforms or at least show appropriate commitment. This is written as:

$U_{IMF}(X,Yes)_1 > U_{IMF}(X,No)_1$ (3)

And for T>1

$$U_{IMF}(X, Yes)_{T+1} = \begin{cases} U_{IMF}(X, F)_T & \text{if } X_T = X_F \\ \boldsymbol{a}U_{IMF}(X, Yes)_T & \text{if } X_T \neq X_F \end{cases} \qquad (4)$$

Where $0<\boldsymbol{a}<1$. This points to the fact that the Fund will grow increasingly unwilling to disburse the next tranche, if the government does not implement the necessary market reforms. The parameter $\alpha$ will generally depend upon the factors other than reforms that are likely to influence the Fund's decisions, such as "too big to fail" or "too strategically important" arguments, and can in general be termed "the political factor" of the game. As we will see later, this factor can influence results of our model on the margin.

Yet, it is not known to the government (and probably, even to the IMF) when the dominance of the disburse strategy vanishes (i.e., when the Fund ultimately loses patience). On the other hand, the Fund initially does not have information about the government's commitment to reform: this information is obtained gradually in course of the game.
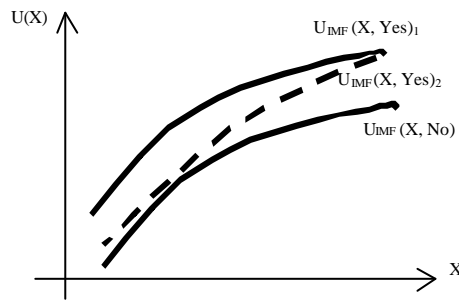


Figure 1. IMF's payoff function. The level of reforms increases along the X axis. The curves $U_{IMF}(X, Yes)_1$ and $U_{IMF}(X, No)_1$ are in accordance with (3). The curve $U_{IMF}(X, Yes)_2$ drawn from (4) for the case of two stages.

It may seem surprising that the curves are drawn continuous while the strategies available are in fact discreet. This representation is merely for the purpose of clearness, as well as other curves drawn further in this chapter.

In order to understand the nature of the government's utility function, we need to introduce an obvious trade-off it faces. Underlining fact is that transition is, among other nice features, a painful process which does not pay immediately (e.g., Hansen and Cook, 1999; Havrylyshyn and Wolf, 1999). In fact, the process of transition implies significant structural reconstruction of the entire economic system, which in turn implies closure of a large number of loss-making enterprises, unable to operate in the new market (or, at the initial stages of transition, sub-market) environment. In addition, the government needs to cut both tax burden[2] and social security network to ensure emergence and development of entrepreneurship, crucial to economic growth. This causes serious social tensions in the process of resource reallocation, which is threatening to the government in the short run. Moreover, the duration of the resource reallocation process is uncertain, but can be considered as depending upon the initial conditions of the economy. Yet, this process is a necessary condition for ensuring the possibility of sustainable economic development (see, for example, EBRD, 1999; Hansen and Cook, 1999; Havrylyshyn and Wolf, 1999). On the other hand, the government is concerned also (and sometimes foremost) about its nearest future. The rationale for such concerns is the government's myopia in making decisions. If government is assumed to be interested in, among other things, remaining in power for the next time period (the exact duration of "the next time period" is difficult to determine, but it is

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[2] On the other hand, one of the policies most frequently advised by the IMF to countries is increasing tax collection, which seems to imply that the IMF policies may not be good for transition in general. With this regard we can state that first of all this work does not discuss actual policies advised by the Fund and second, increased tax revenues can be achieved (even in the short run) through more efficient collection, even with less tax rate.

nevertheless much shorter than the resource reallocation period), then its decisions should also concern the nearest period. In other words, in making policy decisions the government operates in the near time horizon. Thus, the government by introducing reforms pays by reduction of the short-term stability for some future benefits. The benefits to the government can be both internal (in terms of support by the electorate) and external (in terms of reputation with the world community in general and the IMF in particular, assuming the government recognizes the advantages of integration into the world economy). The costs are mostly internal, defined in terms of the initial reduction in output and employment and increase in social tensions (as a short-term result of reforms), reducing support of the government by the electorate.

For the purposes of our model we will denote the perceived cost function of the government as $C_G(X, F)_T$. This function will be strictly increasing in $X$, decreasing in $F$ and convex. However, the crucial point will be that decrease in cost function due to availability of Fund's assistance will be more for the less level of reform. The rationale for this is simple: since the structural changes needed increase with the reform effort and do not depend upon availability of IMF's assistance, the decrease of the cost function due to availability of assistance and increase in the required structural change work in opposite directions.

The perceived benefits function of the government will be denoted by $B_G(X)_T$. This function is generally increasing in $X$, but will be assumed *concave* for a non-committed government and *convex* for a committed one. Besides, benefits increase in case of availability of the IMF assistance and this increase is assumed not to affect the slope of the curve. Therefore, this shift of the benefits curve does not affect analysis of the model in any way and will not be reflected on the

figures. Moreover, commitment will also be assumed to imply that slope of the benefits function exceeds that of the cost function.

The payoff function of the government will be defined as the difference between the present value of the perceived benefits and costs. It is this function that the government seeks to maximize in determining what level of reform to choose.
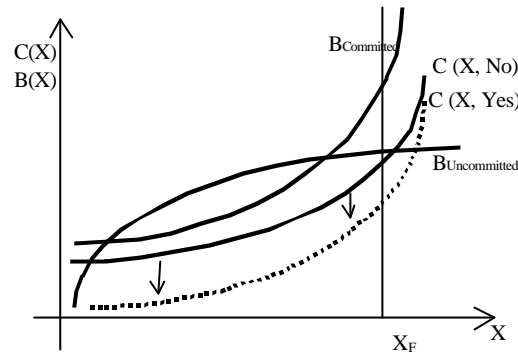
Figure 2. Government's cost and benefits functions. The concave $B_{Uncommitted}$ function represents benefits of the government, not committed to whole-scale market reform, while the convex $B_{Committed}$ function represents the committed government. The cost functions C(X, No) and C(X, Yes) correspond to cost with availability and absence of the Fund's loans

We may write the following general relationships for the government's payoff function. For the committed government the major relationship is that the function $U_G(X,No)_T$ is strictly increasing in $X$ for all $T$. For the uncommitted government the function $U_G(X,F)_1$ has its maximum for the partial reform strategy, while for other values of $T$ one of the following may be true: either $U_G(X,F)_T$ has maximum for partial reform strategy for all values of $T, X,$ and $F$; or there is $T^*$ such that, given the partial reform effort for all $T<T^*$, the payoff function reaches its maximum for the Full Reform strategy. It all depends upon the shape of the benefits function. It can be inferred that the actual value of $T^*$ (if there is one) will positively depend upon initial structural imbalance of the economic system.

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Section 2

Analysis of the Model

The next step will be analysis of the interaction of the government and the IMF using the just identified framework to determine the possible equilibria for both of the above identified types of government.

In our analysis, we will use the basic payoff matrix of the game, whose general form is written out below.

| | | IMF | |
|---|---|---|---|
| | | Disburse | Not Disburse |
| Government | No Reform | $U_G(X_0,Yes)$; $U_{IMF}(X_0,Yes)$ | $U_G(X_0,No)$; $U_{IMF}(X_0,No)$ |
| | Partial Reform | $U_G(X_P,Yes)$; $U_{IMF}(X_P,Yes)$ | $U_G(X_P,No)$; $U_{IMF}(X_P,No)$ |
| | Full Reform | $U_G(X_F,Yes)$; $U_{IMF}(X_F,Yes)$ | $U_G(X_P,No)$; $U_{IMF}(X_P,No)$ |

Figure 3. General Payoff Matrix of the Game

This Table represents the game when played for a single period (i.e., each player moves once). But it is also important to review what happens to the equilibria found at the initial stage as the game is continued.

The equilibrium of the game (given the assumptions spelled out above) will in general depend upon the commitment of the government to whole scale market reform, as well as on the initial conditions, that is, on the shapes of the cost and benefits curves. Besides, in dynamics, the outcome will largely depend upon the previous outcomes, the adjustment of the IMF payoff function according to (4), as well as upon adjustment of the cost and benefits functions. Generally speaking, for the purposes of our analysis we will need to rather *range* than *quantify* the payoffs of the players depending upon the strategies. Quantification of

payoffs in this case is difficult if not impossible and ranging will provide sufficient information for finding equilibria of the game.

Let us start with the committed government, as the model for this case is somewhat simpler. Given the convex benefits and cost functions, as well as the fact that slope of the former exceeds that of the latter, we can state that for this case the government will chose the Full Reform strategy in case of unavailability of the Fund's loans. As for the Fund's "Yes" strategy, we should remember that the slope of the cost function in this case increases and therefore two equilibria are initially possible: (Yes; Partial Reform) and (Yes; Full Reform), depending upon both benefits function and shift of the cost function due to availability of the Fund's loans. However, we will show later that the former is not sustainable as the game continues.

The issue is the shift of the cost curve over time as the insufficient reform effort is made. We can in such case state that as insufficient reform effort is made it is becoming more and more costly to sustain the quasi-market framework that is developed in such case. This implies that the cost function moves upward. Again, as the need in structural reconstruction of the economy does not vanish, which implies that the shift of the cost curve results in decrease of its slope. Generally, every next period $C_G(X, No)_{T+1} < C_G(X, Yes)_T$, and the slope increases. Moreover, for simplicity we can assume, that provision of IMF loan at time $T+1$ moves the cost curve so that:

$$C_G(X, Yes)_{T+1} = C_G(X, No)_T \tag{5}$$

Which implies that in case of the (Yes, Partial Reform) equilibrium at first stage of the game, at the second stage this equilibrium will change to (Yes; Full Reform) – assuming, of course, that the above introduced $\alpha$ is not close to zero.
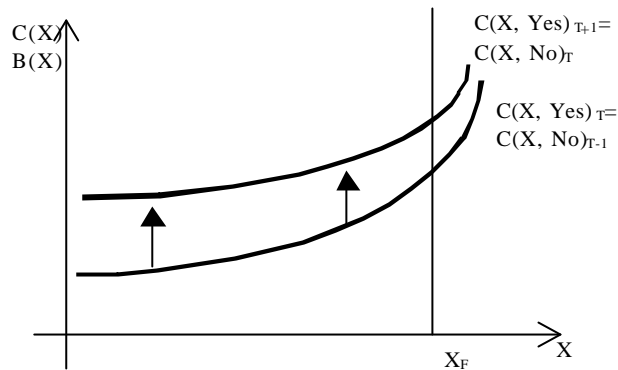
Figure 4.  Shift of the Cost Curve in Response of Insufficient Reform Effort.  Expression (5) is taken into account

Let us now turn to the more interesting case of the uncommitted government, characterized by the concave benefits function.  As cost function is convex, benefits function is concave in reforms, the costs of reform will increase faster than benefits.  Then, the government payoff maximization point will most probably be somewhere above zero and below full reform, corresponding to the partial reform strategy.

Thus, as "partial reform" is dominant strategy for the government and "Yes" is initially dominant for the IMF, the outcome (Yes; Partial Reform) will be the initial Nash Equilibrium of the game.  The transition to the market economy will be effectively delayed and more funds will be received from the IMF for implementation of reforms.

Equilibrium on the next stages of the game will depend on how the IMF will adjust its strategy (or on the $\alpha$ introduced in (4)), as well as on the adjustment of the government's cost function, as outlined above.

So, for the next periods, the IMF's payoff function adjusts according to (4) and that is where the above identified alpha will plays its role.  Generally, the smaller

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the alpha, the faster will the Fund change its preference from "Yes" to "No" strategy for zero and partial reform effort of the government. As for the government itself, its cost function will become flatter.

We can see that, while the continuation of the partial reform (adjustment strategy) imposes upward pressure on the cost function, thus making implementation of the whole-scale market reform relatively less costly, the IMF assistance works in the opposite direction, returning the cost curve to where it was before (see (5)). The initial NE will be persistent as long as the "Yes" strategy remains dominant for the Fund.

The next case to review is the "loss of patience". This of course refers to the case where dominance of the "Yes" strategy disappears and the Fund finds it less costly in terms of reputation to stop providing loans to a transition government. In such a case the government is, when it has to make a move, confronted by a flatter cost curve than before and there can be generally two cases: case 1 where payoff from the partial reform is still greater than that of the full reform. And case 2 where payoff from the full reform starts exceeding that of the partial reform. In case 1 the equilibrium of the game changes to (No; Partial Reform) and the country continues its life without good market reforms and the IMF's assistance – end of game (assuming further that partial reform will remain dominant strategy for the government in all subsequent shifts of the cost curve). Case 2 is somewhat more interesting, as here the government starts showing it is implementing whole-scale market reform and the Fund will of course provide it with the next loan. It seems like we have arrived to the good equilibrium we want: the government starts full reform with the IMF assistance to it, even despite the fact that the government was not initially committed to market reform.

Yet, another issue is the sustainability of such equilibrium. If we move to the next stage of the game, the government will find its cost function decreased to the level where its strategy was to reform only partially. In such a case the government will, after receiving the Fund's assistance initially, abandon its full-reform strategy for partial reform one and, according to (3) we will enter the loop: we will keep switching from the (Yes; Full Reform) to the (No; Partial Reform) scenario. However, this can not possibly sustain: we can assume that in such case the government will eventually lose its credibility with the IMF and assistance will be discontinued. However, in that case adjustment strategy will still be too costly and the final equilibrium is going to be (No; Full Reform). But the general logic can lead us to conclude that such as equilibrium could have been reached even without the Fund's involvement and in shorter time period, as there would have been no back shifts of the cost curve involved.

Results and Moral Hazard

From the above analysis of the game (given the assumptions identified above) we can spell out the following conclusions:

1. The outcome of the game will greatly depend on commitment of the government to the whole-scale market reform.

2. The IMF loans reduce cost of reform, thereby delaying their implementation.

3. Even the uncommitted government may in the end choose to fully reform, but the Fund's loans delay this adjustment.

The following table summarizes the predictions that can be inferred from the model developed in this chapter.

Table 1. Summary of Model Predictions

| Type of Government | Predictions to Be Drawn from the Model |
|---|---|
| Committed | The game ends quickly as the government implements whole-scale market reforms and does not have the need to resort to borrowing from the IMF. However, at the initial stage there is a possibility of delayed reform in case the shift in the cost function due to availability of IMF loan makes 'partial reform' strategy optimizing for the government. However, this distortion is temporary and the final equilibrium of the game will be (Yes, Full Reform), after which the game ends. |
| Uncommitted | The equilibrium (Yes; Partial Reform) will be persistent as long as disbursement strategy is dominant for the Fund. When the IMF loses patience, the final equilibrium will be either (No; Partial Reform) or (No; Full Reform). The path to the latter equilibrium lies through shifts between (Yes; Full Reform) and (No; Partial |

| | Reform) states. |
|---|---|
| | |

The committed government reforms irrespective of whether there is IMF involved, and at lower cost. It can be inferred that IMF involvement is in such case useful as it does lower (to some extent) the social tensions associated with the painful whole-scale reform process, thereby reducing the chance of change of the government to the one that would potentially resist market reforms.

As for the uncommitted government, the presence of the IMF loans, by reducing the costs of reforms as in Figure 4, only makes the government more positive about choosing the Partial Reform strategy. Another point is that the Fund's payoffs adjust rather slowly in response to insufficient reform effort and thus the IMF ends up assisting the uncommitted government for too long (especially in the case where the country turns out to be strategically important for some reason).

The moral hazard enters the picture exactly in the case of uncommitted government. Dominance of the Fund's "Yes" strategy at the initial stage of the game and the IMF's slow understanding of the fact that the point in question is non-commitment of the government leads to slower adjustment of the government's cost curve to the point where even the uncommitted government may choose to fully reform. Thus, the IMF loans do not contribute to incentives of the uncommitted government to implement the whole-scale market reform (as they are supposed to) and the transition economy as a whole suffers losses, mainly in terms of time which could have been used for establishment of conditions necessary to achieve sustainable economic growth. In addition, as time comes to pay back the loans, the government cannot do any better than to

lay the burden onto the shoulders of taxpayers, thereby depleting the already weak financial resources of the economy.

The point left outside of consideration of our model is incentives of the government of transition country to apply for further loans from the IMF. It is assumed that once full reforms are in place, the government (especially that committed to the whole scale market reforms) will not have the incentive to resort to the borrowing from the Fund again. This, however, somewhat simplifies the picture. Even a well-developed economy may need to use the IMF as a source of loans with certain conditionality attached. However, to my belief, this case is relatively easy to detect empirically by looking at both the state of development of the market institutions and the scope of reforms agreed upon.

Another point of possible concern is whether the conditionality attached to IMF loans is always good for the economy. For instance, Radelet and Sachs (1998) in examining the role of the Fund in South Asian financial crisis state that the measures the Fund insisted upon where not necessarily good for the affected countries. However, I think that this issue can be omitted as long as building of the market institutional infrastructure is concerned and it can be assumed that reforms IMF and government agree upon should, if implemented, be beneficial for the economy in the long run, and the model deals with the long run prospects for sustainable economic development of transition economies.

*Chapter Four*

REALITY

Section 1

General Patterns and Facts

Of twenty-six countries identified by EBRD (1999) as transition ones, only one (Turkmenistan) has not yet borrowed from the International Monetary Fund. The countries that have used borrowing from the IMF prior to transition process are Hungary and Romania. Thus, almost all of the transition countries have had experience with the Fund at the time of transition, on which our research focuses. This chapter examines how transition countries have performed in establishment of the market institutions and compares this information with that of the use of IMF loans, in light of the model developed in the previous chapter. For the purposes of analysis the information obtained from the IMF (2000) and EBRD (1999) will be used.

Identification of commitment of governments of transition countries to whole-scale market reform is the first problem to solve. As far as the uncommitted governments are concerned, their identification will be straightforward: absence of the adequate institutional structure after decade of transition is a strong evidence of non-commitment. Yet, we cannot positively state for the purposes of our analysis that presence of market institutions is tantamount to commitment to market reform. Our task is to separate pure commitment of the government from the possible positive effect of the IMF on government's incentives to whole-scale market reforms. If the previously developed model is correct, only

pure government's commitment has positive impact on actual implementation of whole-scale market reforms.

It will be useful for the purposes of this analysis to classify the transition economies in accordance with the success in development of the market institutional framework. EBRD (1999, p. 24-25) identifies eight indicators of progress in transition, outlining major elements of the institutional framework of the market economy. Whole-scale market reform implies establishment of the comprehensive institutional framework, typical of a market-based economy (see, for example, Rodrik, 1999). According to EBRD and previous statement this should mean scores of four or better for each of the transition indicators. Yet, none of the transition economies meets such a strict criterion. However, scores of three and better imply rather significant progress, including good degree of implementation of reforms. According to the above mentioned source, only four countries (Czech Republic, Estonia, Hungary and Poland) meet the criterion of scores of 3- and better for each of the transition progress indicators. For the purposes of our analysis, these countries can be deemed as those that have achieved the level of whole-scale market reform. Besides, there are five other economies (Croatia, Latvia, Lithuania, Slovak Republic and Slovenia) whose average transition indicators are above three[3]. Besides, they have scores less than 3- only for one or two (Croatia) of those indicators. With this regard, we can distinguish above nine countries as those that have fully reformed or in process of implementing the whole-scale market reform. Other transition economies have made reform effort that is insufficient to be called "whole-scale".

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[3] Note that these average values were computed using somewhat arbitrary technique (see footnote to Table 2), but for most cases the averages are well above 3,00 (except for Croatia). On the other hand, one does not observe the values very close to but less than 3,00, which leads to conclusion that distinction between the groups of countries is valid.

Since the beginning of the transition process two general patterns have emerged: some countries of Eastern Europe and Baltic countries have recovered after the initial fall of output and in general established the appropriate institutional framework, while other (mostly CIS countries) have implemented definitely insufficient market reforms (EBRD, 1999). However, initially (1990-93) all transition economies have experienced financial instability and decline in output (EBRD, 1999, Havrylyshyn and Wolf, 1999): as we see, the former was largely removed, while the latter persists in some countries (ibid.). According to EBRD, "… politicians may lack the incentive or the support to change existing policies and institutions, preventing the introduction of reforms." (EBRD, 1999, p. 106). This statement recognizes the role that political commitment to reform plays in their actual implementation.

From the above paragraphs, we can make the following conclusion. Judging from the EBRD indicators of progress in transition, of 26 transition economies only nine can be said to have implemented (or to be implementing) whole-scale market reforms, as for 1999. These countries pose the most interest for our purposes in terms of reform commitment of their governments. As for the countries that did not implement adequate reforms, the situation here seems more obvious: non-implementation of adequate reforms after ten years of transition is a clear sign of lack of commitment. To determine commitment to reform of the now advanced transition countries, we will first look at the following table. It summarizes the following information: year when the stabilization effort was taken by the government; year first loan during transition was taken from the IMF; and average transition indicator for 1994.

Table 2 Stabilization Efforts, IMF Loans and Reform Progress

| Country | Year stabilization effort undertaken | Year first loan taken since start of transition | Average transition indicator (1999)[4] |
|---|---|---|---|
| Albania | 1992 (18)[5] | 1992 | 2,5 |
| Armenia | 1994 (39) | 1994 | 1,8 |
| Azerbaijan | 1995 (40) | 1995 | 1,3 |
| Belarus | 1994 (38) | 1993 | 1,7 |
| Bulgaria | 1991 (13) | 1991 | 2,5 |
| *Croatia* | *1993 (30)* | *1992* | *3,2* |
| *Czech Republic* | *1991 (13)* | *1993* | *3,5* |
| *Estonia* | *1992 (9)* | *1992* | *3,3* |
| FYR Macedonia | 1994 (36) | 1992 | 2,8 |
| Georgia | 1994 (36) | 1994 | 1,3 |
| *Hungary* | *1990 (6)* | *1990* | *3,3* |
| Kazakhstan | 1994 (28) | 1993 | 1,7 |
| Kyrgyz Republic | 1993 (21) | 1993 | 2,8 |
| *Latvia* | *1992 (9)* | *1992* | *2,8* |
| *Lithuania* | *1992 (9)* | *1992* | *3,0* |
| Moldova | 1993 (24) | 1993 | 2,2 |
| *Poland* | *1990 (6)* | *1990* | *3,3* |
| Romania | 1993 (45) | 1991 | 2,7 |
| Russia | 1995 (40) | 1992 | 2,7 |
| *Slovak Republic* | *1991 (13)* | *1993* | *3,3* |
| *Slovenia* | *1992 (8)* | *1992* | *3,2* |
| Tajikistan | 1995 (41) | 1996 | 1,7 |
| Ukraine | 1994 (38) | 1994 | 1,3 |
| Uzbekistan | 1994 (38) | 1995 | 2,0 |
| Bosnia and Herzegovina | No data available | 1992 | No data available |
| Turkmenistan | 1997 (64)[6] | NONE | 1,2 |

Sources: EBRD (1999), IMF (2000), and Lankes and Stern (1998)

From the table above, we can make the following conclusions. Firstly, first loans from the IMF are largely coincident with the stabilization effort, which can be

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[4] Data taken directly from Lankes and Stern (1998). As there is no indication how those values were computed and due to the changes in transition indicators methodology over the period from 1994 till 1999, values in this table might not be directly comparable to those indicated in Table 3.

[5] Number in brackets corresponds to number of months since start of transition

[6] My estimate (other data in brackets are taken from EBRD (1999, p. 103))

considered benchmark of the market reform, as it is regarded as the necessary condition for market transition (e.g., EBRD, 1999, Havrylyshyn and Wolf, 1999). Second, the now advanced transition economies (except for Croatia) have been the earliest starters of reform, which, in combination with high transition indicators in 1994, suggests commitment of governments of those countries to whole-scale reform. Third, Croatia has progressed rather quickly with reforms (although it started late), which also suggests that government of that country was eager to reform; yet, this case might deserve special consideration.

The following Table summarizes relationships between the transition economies and the IMF, including basic information concerning their further progress in market oriented reforms.

Table 3. Transition Countries and the IMF (as on May 12, 2000)

| Country | Year first loan taken | Year last loan taken | Notes | Average transition indicator (1999)[7] |
|---|---|---|---|---|
| Albania | 1992 | 2000 | | 2,57 |
| Armenia | 1994 | 1999 | | 2,70 |
| Azerbaijan | 1995 | 1999 | | 2,20 |
| Belarus | 1993 | 1995 | Keeps paying out loans | 1,46 |
| Bulgaria | 1991 | 2000 | | 2,83 |
| *Croatia* | *1992* | *1997* | *Keeps paying out loans* | *3,04* |
| *Czech Republic* | *1993* | *1993* | *Paid back in full in 1994* | *3,50* |
| *Estonia* | *1992* | *1995* | *Keeps paying out loans* | *3,45* |
| FYR Macedonia | 1992 | 1999 | | 2,45 |
| Georgia | 1994 | 1999 | | 2,70 |
| *Hungary* | *1982* | *1993* | *Paid back in full in 1998* | *3,70* |
| Kazakhstan | 1993 | 1999 | Keeps paying out loans | 2,67 |
| Kyrgyz Republic | 1993 | 2000 | | 2,79 |
| *Latvia* | *1992* | *1994* | *Keeps paying out loans* | *3,12* |
| *Lithuania* | *1992* | *1997* | *Keeps paying out loans* | *3,12* |
| Moldova | 1993 | 1999 | | 2,71 |
| *Poland* | *1990* | *1994* | *Paid back in full in 1995* | *3,50* |
| Romania | 1973 | 1999 | | 2,75 |
| Russia | 1992 | 1999 | | 2,37 |
| *Slovak Republic* | *1993* | *1994* | *Keeps paying out loans* | *3,33* |
| *Slovenia* | *1992* | *1997* | *Paid back in full in 1997* | *3,25* |
| Tajikistan | 1996 | 2000 | | 1,96 |
| Ukraine | 1994 | 1999 | | 2,46 |
| Uzbekistan | 1995 | 1996 | Keeps paying out loans | 2,04 |
| Bosnia and Herzegovina | 1992 | 1999 | | 1,87 |
| Turkmenistan | NONE | | | 1,41 |

Sources: IMF (2000), EBRD (1999)

In accordance with the model, developed in the previous chapter, in case of the committed government the game should end rather quickly. The Fund provides loans for certain relatively short time period, during which the government completes the whole-scale market reform and the need for further loans

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[7] Arithmetic average computed from EBRD (1999, p. 24). In case of score with minus sign 0,33 was subtracted from, while for the score with plus sign 0,33 was added to the score.

disappears. As we can see from the table above, this is indeed the case for all of the transition countries, whose governments are full steam ahead in process of implementing the whole-scale market reforms, aimed at establishment of the appropriate institutional structure. Indeed, none of those countries has been using the IMF loans since at least 1997. And as for the most advanced economies of those (Czech Republic, Hungary, Poland, and Estonia), they have not been using IMF loans since 1995; moreover, the former three countries have paid back the loans taken from the Fund in full.

Of the remaining 16 transition countries, 14 are rather active users of the IMF credits. Although only four of the less developed transition economies have actually obtained loans in 2000, most of other states (e.g., Romania, Russia, and Ukraine) are negotiating the next tranches. We may therefore consider governments that received last IMF loan in or after 1999 current users of IMF funds for the purposes of our analysis, especially taking into account that period between two loans can exceed one year. Thus, for most cases, we observe the absence of the commitment to whole-scale reform (which has manifested itself in insufficient reform effort and absence of the appropriate institutional structure) in combination with the active use of the IMF loans (i.e., the (No; Partial Reform) equilibrium, typical of the uncommitted government case initially).

## Section 2
## Specific Cases

The information presented in previous section delineates certain general patterns of relationships between IMF and transition countries. Those patterns in general are in correspondence with the model predictions. However, it is also necessary to analyze some specific cases, which are seemingly outside of the above-identified patterns, as well as the cases of Russia and Ukraine.

In cases of Belarus and Uzbekistan both insufficient reform efforts has been made and the cooperation between the government and the IMF has stopped. The case of Belarus is a simple one: here we have the violation of one of the underlying assumptions of our model, namely, political neutrality. As we can conclude from the facts (IMF, 2000), the Fund is rather unwilling to provide any loans to the governments run by Communists, as happened in Belarus and Bulgaria in 1995. Furthermore, it can be argued that the issue is rather violation of the political neutrality assumption, not the fixed government assumption. As can be inferred from Lankes and Stern (1998), the commitment of the Belarussian and Bulgarian non-communist governments were at rather low levels.

Case of Uzbekistan is rather unclear from the point of view of our model, at least at the first glance. However, as can be inferred from Freedomhouse (1998), policy of Uzbek government can be regarded as largely antidemocratic, thus pointing to the possibility of violation of the political neutrality assumption, just as in the case of Belarus. The same can be inferred from EBRD (1999). This organization points Uzbekistan as one of the countries that failed to implement any serious market reforms (ibid., p. 102).

Thus, of 16 governments of transition countries, uncommitted to the whole-scale market reforms and using IMF loans, 14 correspond to the general pattern identified in the previous section (which will be explored in more detail in subsequent paragraphs for the cases of Russia and Ukraine) and two cases appear to violate one of the assumptions of the model.

Thus, preliminary, we can conclude that the model developed in the previous chapter has a rather good power in explaining the fact of the IMF's provision of loans to the non-reforming governments. As we have shown, the general picture is that the governments committed to the whole-scale market reforms have been the least active users of the Fund's loans in terms of longevity of cooperation with the IMF. Whole-scale reforms in those countries can be asserted to have taken or to be taking place. On the other hand, most of the insufficiently reforming governments are still using the IMF borrowing, except for cases where the political neutrality assumption of our game has been violated.

With this regard, let us look more specifically at the cases of Russia and Ukraine. Of all transition economies considered in this work, Russia has received the greatest amounts of loans from the Fund (IMF, 2000, Illarionov, 1998). The combined total of credits provided to Russia by the Fund exceeded $19 billion (ibid.) But the astounding fact is that, as Illarionov points out that '… IMF's attitude towards economic policy carried out by Russian authorities was and remains timid, inconsistent and subject to permanent compromise', and 'Not a single one of the IMF programs … has been executed in full' (Illarionov, 1998, p. 2). These statements point to the fact of persistence of the (Yes; Partial Reform) equilibrium in case of the IMF-Russia game. Further, Illarionov points out that such attitude of the Fund contributed to the fact that 'Russian economic policy … has seriously diverged from economic policy conducted in a majority of

transition countries, having become even more irresponsible than it was before'
(ibid.). That is, direct result of the IMF-Russia game was moral hazard. The
most evident example of such irresponsible behavior is decisions taken by
Russian authorities on August 17, 1998, which led to significant losses for the
Russian economy.

Despite the financial crisis, which erupted right after approval of the next IMF
package designed to prevent it (Cohen, 1998), there was disbursement of loan to
Russia in 1999 (IMF, 2000). Yet, the policy of the IMF afterwards has been
rather stringent: it demands implementation of reforms for further tranches to be
considered. On the other hand, the Fund remains willing to provide additional
money as soon as reforms are implemented (Fox News, 1999, Russia Reform
Monitor, 2000). These facts suggest that currently the equilibrium is (No; Partial
Reform) and it is Russian government's turn to move. Thus, we have to wait and
see what the government will do. If the payoff function of the Russian
government is maximized for the partial reform strategy, it may well decide not to
ask for any more loans from the Fund and the above-identified equilibrium will
be the final one for this case. However, Russia may also opt to implement the
reforms stipulated by the IMF. Yet, two questions remain open. First, it is not
obvious that reforms insisted upon by the Fund correspond to the path to full
reform. And second, if Russia in fact starts full reform and receives the money
from the IMF, it is not clear whether there will be no further diversions from the
path of market reform, as it has often been the case. If fixed government
assumption holds, then the (Yes, Full Reform) equilibrium will not be sustainable,
and the final equilibrium in this case will be (No, Full Reform).

The final issue to review is the state of relationships between the IMF and
Ukraine, also in light of our model. Ukraine has been a member of the IMF since

1992 and used borrowing from this source since 1994 (i.e., after hyperinflation was overcome and relative financial stability was achieved). Ever after that Ukraine received almost SDR 1,5 billion, of which SDR 700 million has been paid back (IMF, 2000).

As can be seen from Table 3, the equilibrium of the IMF-Ukraine game has up to now been (Yes, Partial Reform). Indeed, if we examine the issue in somewhat more detail, we will see that it looks like the same song repeated year after year. Ukraine is making some progress but implements insufficient market reforms. Moreover, the reform agenda seems to remain the same over years (e.g., Radio Free Europe, 1997, 1998; BBC, 1998). However, currently this situation is about to change. As suggested by the recent developments, the Fund seems to have started to lose its patience with Ukraine and became demonstrating its switch to the "No" strategy (e.g., Fox News, 1999). Yet, just as in case of Russia, the possibility of provision of further loans is not ruled out. Ukrainian government can in such case choose one of the following ways: either to continue with partial reforms and live on without the IMF loans or to try to show that it is starting to implement some whole-scale reforms to get the next tranche. Recent developments seem to suggest that the government is likely to choose the second strategy. Therefore, we can conclude that the next tranche from the IMF will be most probably received. However, decision of the IMF can also be influenced by the recent PricewaterhouseCoopers Report (2000) on NBU audits, which violates the implicit ceteris paribus conditions of our model.

The issue remains, however, whether the new government of Ukraine is committed to whole-scale market reform, which will be seen only after the tranche is disbursed. If the government indeed happens to be committed to such reform, then the reforms will be continued after the tranche is received;

otherwise, they will be halted. That is, in both cases of Russia and Ukraine we have come to the point where the initial equilibrium (No; Partial Reform), which persisted for over five (for Ukraine) and seven (for Russia) years is changed. According to the model, the final equilibrium of the model for the case of uncommitted government is supposed to be either (No; Partial Reform) or (No; Full Reform). If governments of both Russia and Ukraine remain fixed in terms of reform commitment (as the model assumes), one of the above equilibria will be finally observed. However, path of adjustment to the latter equilibrium may take rather long time. I believe that it will become clear in course of the next year which path will be followed and whether commitment of governments to reform has changed.

*Chapter Five*

CONCLUSIONS AND POLICY IMPLICATIONS

Section 1

General

Different aspects of activity of the International Monetary Fund have lately become subject to criticism. Among issues raised were the following: short-term liquidity assistance is in effect replaced with long-term development assistance; Fund's policies are counterproductive to legitimate long-term policy goals (Calomiris, 1999); IMF's lending encourages risky behavior on the part of governments and investors (Vasques, 1998). That is, the IMF loans are suspected to be related with moral hazard. This is, however, not the conventional view. For instance, Krugman (2000) argues that moral hazard associated with IMF loans was nothing but 'a fantasy' for the case of East Asian countries. On the other hand, he further states that Russia is and exception – a country 'investors thought of … as 'too nuclear to fail'' (Krugman, 2000). Moreover, Krugman examines the issue from the point of view of investors, while this work reviews moral hazard from the point of governments of transition economies.

The thesis examined moral hazard problem in relation with the transition economies. The major issue reviewed is counter productivity of IMF loans to the market reform in transition economies, which results in misuse of the Fund's resources. The relationships between the Fund and a government of a transition economy are modeled in this work as a dynamic game.

The model distinguishes two major cases: the cases of a government committed and uncommitted to the whole-scale market reform, as defined through the institutional framework of a market economy. The game is shown to have different equilibria for those cases: in case of a committed government the whole scale reforms are implemented with or without the Fund's assistance. The case of an uncommitted government is different and of most interest. The model shows that under such circumstances the equilibrium for the initial stages of the game is partial reform strategy for the government and disbursement strategy for the IMF. Eventually such government (assuming it is fixed in terms of commitment to reform) may choose to reform fully, but first of all, the possibility of such reform is significantly delayed by presence of the Fund's assistance, and second, the desirable equilibrium (Yes, Full Reform) turns out to be unsustainable for the case of uncommitted government.

The main conclusion to be drawn from the model described in Chapter Three is that the uncommitted governments should not be given loans in return for promises to implement some reforms, as such promises do not appear credible. This is however easier to say than to do. As we have mentioned, information about government's commitment is asymmetric at the initial stage of the game. Thus, only after having observed actual governments' effort can the Fund say whether the given government is committed or not. As concerns credibility of Fund's threat to discontinue funding, this threat is not credible at the initial stages of the game. Moreover, the credibility of IMF's threats at subsequent stages greatly depends upon some political weight of a given country, most probably to G7 in general and the USA in particular, as those countries have the most influence on actual decisions of the IMF.

The initial asymmetry of information on commitment and slow adjustment of the IMF's payoff function in response to the insufficient governments' reform effort lead to the moral hazard in case of the government of a transition country not committed to the whole-scale market reform. Implementation of sufficient market reforms is delayed, while disbursement of loans continues. We may thus conclude that the assistance tuns out not to add to reform incentives of the uncommitted government.

Some empirical analysis shows that none of the transition countries that can be said to have implemented or to be actively implementing the whole-scale market reform is currently a user of the IMF loans. Moreover, it can be claimed that the now advanced transition economies have been reformed by the committed governments. As for the less advanced countries, which still have not shown sufficient reform effort, they are actively using the borrowing from the IMF, with two exceptions being Belarus and Uzbekistan. Those cases correspond to violation of the 'political neutrality' assumption of the model and are in general not contradictory to the game developed.

Thus, the model turns out to have good explanatory power as applied to 25 transition economies using loans from the IMF. It would be interesting, however, to argue what can happen in the near future as well as to present some policy implications regarding IMF borrowing (and, possibly, other types of borrowing and assistance) to the transition countries.

The possible further developments of the relationships between the IMF and some transition countries like Ukraine and Russia are largely indeterminate. The Fund seems to be losing patience with those countries (as suggested by the recent developments in their relations) and governments are trying to show their

commitment to the whole-scale market reform.  It means that the next tranche might be received and only after that the governments' commitment to whole-scale reform will become evident, which implies possibility of further misuse of the IMF's resources.

## Section 2
## Policy Implications

As we have seen thus far, the experience of the IMF with the transition economies has been not very successful. A lot of loans have been disbursed backed by promises to implement certain market-oriented reforms, but only a third of the transition economies can be claimed to have approached or to be credibly approaching the institutional framework of a developed market economy. Moreover, the Fund's loans do not contribute to reform incentive of the government: rather, they can subtract from it.

The issue is how this obvious misallocation of Fund's resources could have been avoided in the past and might be avoided in the future. As this phenomenon results from initial asymmetry of information and slow adjustment of the Fund's payoff function, the policy measures to tackle the problem should be directed to these issues.

While there is virtually no way the IMF can initially make valid inferences about the commitment of a certain government to the whole-scale market reform, some proxies can as well be used. One of the most obvious ones is the past performance of the government. It gives a very good idea as to the commitment of a given government to reform. However, as governments in transition economies seem to change rather frequently, the practical use of this indicator is limited. I use the expression "seem to change" because the change mostly affects the personal content of the government without influencing the commitment to reform[8]; on the other hand, this change seems to signal change in reform

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[8] Moreover, as EBRD (1999) suggests, even the change of the ruling party in transition government does not impact its reform performance

commitment. One of such signals is the recent appointment of Victor Yushchenko the Prime Minister of Ukraine. Another useful predictor of the government's commitment to reform is existence of vested interests influencing the government's activity. Existence of the interest groups is easy to determine and they can be regarded as having the payoff function different from that of the government and not favoring the whole-scale market reforms leading to establishment of the competitive environment undermining power of the interest groups. As those groups oppose to market reforms and influence the government, reform levels will most probably be insufficient. This is especially a problem in Russia and Ukraine, which should be taken into account when determining eligibility of those countries for the next tranches of IMF loans.

Another issue of possible importance is the institutional structure of the government. By examining this structure, one can make conclusions about the possible extent of the government's involvement into the economy. If the institutional structure of the government stipulates high level of involvement with the market relationships, then it is unlikely that whole-scale market reform will be in the interest of such a government. On the other hand, appropriate administrative reform can be a good signal.

As concerns the issue of the slow reaction of the IMF's payoff function, the variable under direct control of the Fund is $\alpha$, introduced in the model. This variable is chosen by the IMF and it is presumably in its hands to change it. Yet, the issue is not as simple as it may seem. As Calomiris (1999) point out, the IMF has become a political tool in hands of G7 finance ministers. It suggests that the value of this coefficient depends greatly upon some political weight that the most developed countries (who are the ones that have the greatest influence on decisions) assign to a specific transition economy. Thus I would suggest (in line

with, for instance, Calomiris, (1999) and Vasquez (1999)) that the IMF be made independent of those influences.

In conclusion I can state the following. First, the IMF's loans to governments of transition economies has been a rather unsuccessful attempt to facilitate the market-oriented reforms in cases the governments have been uncommitted to such reforms themselves. Second, the loans have led to misallocation of IMF's resources and imposed on transition economies debt burden to be repaid by taxpayers – i.e., moral hazard phenomenon occurred. Third, the adverse results of the IMF – Government game could have been avoided or at least mitigated if the Fund took appropriate steps to determine governments' commitment to reform using some indirect indicators, such as existence of the vested interest groups and institutional structure of the government. Besides, the Fund should take the more stringent approach to deal with non-implementation of the promised reforms than it currently does.

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