

Outcomes-Based Conditionality: Its Role and Optimal Design

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This paper employs a principal-agent framework to analyze the role and design of outcomes-based conditionality in the presence of market frictions and domestic opposition. The results suggest that outcomes-based conditionality is a good option for the IMF when opposition to reforms is relatively weak and when IMF loans are unsubsidized. The only role conditionality ends up playing in this case is that of an efficiency tool to ensure efficient allocation of resources in the presence of market frictions. The benefits of outcomes-based conditionality in the presence of strong opposition are less clear, and using this conditionality as an incentive tool would require IMF financing to be subsidized. [JEL F33, D82]

IMF programs are in essence incentive schemes.¹ A country is rewarded with IMF financing if it implements certain policies and achieves certain outcomes. For an IMF program to be successful, its conditionality should be designed to provide a government with the “right” incentives to adopt necessary policy changes.² In other words, the government should be willing to implement reforms. This willingness is often referred to as “ownership” of a reform program.³

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¹This view of IMF conditionality was first suggested in Dixit (2000).

²This will also help ensure that IMF resources are repaid.

³A formal definition of ownership adopted by the IMF is as follows: “Ownership is a willing assumption of responsibility for an agreed upon program of policies, by officials in the borrowing country who have the responsibility to formulate and carry out those policies, based on an understanding that the program is achievable and is in the country’s own interest” (IMF, 2001b, p. 8).

One of the proposals to enhance program ownership through conditionality design is greater use of outcomes-based conditionality,⁴ under which IMF financing is conditional on the member country's meeting particular targets or objectives rather than implementing specific actions (policies). From a practical point of view, outcomes-based conditionality⁵ in some cases has clear disadvantages because the results of certain reforms may not be seen for a long time and delaying financing until then may be difficult when financial crisis is imminent. Hence, outcomes-based conditionality is likely to be more appropriate for medium- and long-term programs. At the same time, many quantitative targets (such as reserve targets) currently employed by the IMF are in effect outcomes-based conditions.

Outcomes-based conditionality is viewed as "reducing the perception of micro-management of countries' economic policies and helping foster and build on country ownership, by giving the authorities greater flexibility to design their own economic policies" (IMF, 2002, p. 8). Drawing on the risk-sharing result of the standard principal-agent model with unobservable action, IMF (2002) concludes that making financing conditional on outcome would strengthen the incentives of the authorities to achieve a better outcome.

This result, however, hinges on the ability of the principal to stick to the pre-committed schedule, which provides less financing (or no financing at all) in case of an undesirable outcome. It also implies that conditionality can be designed in a way that ensures that the outcomes are not achieved by unsustainable or inappropriate policies.⁶ Is outcomes-based conditionality still a good option for the IMF when commitment is an issue and when reforms face opposition from domestic lobbies that can divert authorities from sound economic policies?

This paper addresses this question by analyzing the role and optimal design of conditionality within a consistent theoretical framework with a clearly defined objective function of the IMF. To model opposition from an outside lobby, I employ a common agency approach following Mayer and Mourmouras (2002)⁷ but with stochastic outcome of policy reforms and policy action unobservable to the IMF.

Despite numerous discussions on the topic, to my knowledge, there is only one formal model of IMF outcomes-based conditionality—namely, the model of the IMF as a co-insurance arrangement in Chami, Sharma, and Shim (2004). The model focuses on the need for precommitment in the context of time-inconsistency but does not address the role and optimal design of outcomes-based conditionality in the presence of opposition.

Most of the existing theoretical literature on conditionality, indeed, focuses on the problem with the donor's commitment to enforcing the conditionality contract.

⁴The approach was advocated by Carlos Diaz-Alejandro (1984) and discussed in Khan and Sharma (2003) and IMF (2001b and 2005a).

⁵At the moment, IMF conditionality is already a mix of policy-based and outcomes-based conditionality. Thus, the issue is really whether the relative importance of outcomes-based conditionality should be increased.

⁶A recent review of the 2002 Conditionality Guidelines (IMF, 2005b) suggests that this may not be the case in practice and points out the risk that conditions might be met in unacceptable or suboptimal ways.

⁷A common agency framework was proposed in Bernheim and Whinston (1986) and was further developed in Grossman and Helpman (1994) and Dixit, Grossman, and Helpman (1996 and 1997).

The majority of models are models of conditional aid with the donor having altruistic preferences. Some of the models employ the principal-agent framework (for example, Svensson 2000 and 2003; and Azam and Laffont, 2003).

Models of IMF conditional lending are rare and often do not provide clear justification for IMF objective function. In Drazen (2002), for example, the IMF cares about “extracting” policy reforms from the borrowing government but faces some financing constraints. Mayer and Mourmouras (2002) define IMF objective more explicitly—namely, the IMF seeks to maximize the weighted sum of utilities of IMF borrowers and lenders but without justifying why IMF financing is required.

Chami, Sharma, and Shim (2005) take the issue of IMF objective seriously and show that the size and design of the IMF loan contract crucially depend on the choice of IMF objective. They explore alternative objectives, balancing IMF concern about safeguarding its resources with concern about country welfare, but limit the role of the IMF to an altruistic lender.

This paper focuses on a potentially different role that the IMF plays and analyzes the role and optimal design of conditionality under the nonaltruistic objective of the IMF. The role of the IMF is twofold: (1) to bridge the inefficiency gap resulting from the presence of market failures and (2) to induce policy changes beneficial for the world. The instruments that the IMF can employ to achieve these two goals are the amount and terms (interest rate) of IMF financing.

Several features of the preferences of the IMF and country authorities make this model different from the standard principal-agent model. The IMF is not a typical principal in the sense that it would choose to make a contribution (give a loan) even if the country had enough incentives to implement the desired policy changes without the IMF. This is because the IMF plays the role of the world social planner, which aims at removing the consequences of market imperfections, thereby benefiting both borrowers and lenders. Also, unlike in the standard principal-agent model, preferences of the country authorities and the IMF are aligned to some extent because the government cares about the reform outcome in and of itself—not just for the sake of obtaining the desired IMF financing.

The results suggest that when opposition to reforms is relatively weak and the IMF offers financing on market terms, outcomes-based conditionality is a good option for the IMF. In this case, forgoing the monitoring of policy decisions does not result in an efficiency loss, and optimal conditionality schedule does not contain an incentive component but simply ensures efficient allocation of resources⁸ between IMF borrowers and lenders.

Outcomes-based conditionality may still be a good option for the IMF when resistance to reforms is strong. However, the IMF would have to offer financing at a subsidized interest rate to be able to use conditionality as an incentive device. The optimal conditionality schedule in this case would reflect the trade-off between risk sharing and incentives as the IMF shifts additional risk onto the government. A careful assessment of benefits and costs of outcomes-based conditionality is particularly important in this case because the average amount of transfer from the

⁸The term “efficiency” is used here somewhat loosely. Its precise meaning is explained later in the text.

lender to the borrower required to ensure good policy is higher in the unobservable case than in the observable one.

A better understanding of political economy in the country is crucial in designing an optimal conditionality schedule because its role and optimal design depend on the strength of opposition. In the presence of outside lobbies, the incentives of the authorities are shaped not only by the IMF offer but also by the offer from special interests.⁹ Whether reforms are implemented is simply a matter of the competitive power of the IMF versus domestic lobbies, and unobservability may weaken IMF competitive power. In some cases, however, the IMF may find it optimal to incur additional costs in order to induce sound economic policies.

The model makes a surprising prediction about transparency of IMF programs. If the IMF moves first but cannot commit to nondisbursement in the case of a bad policy choice, it may play to the advantage of the domestic vested interests. In essence, the IMF cannot strategically manipulate a lobby's response when the maximum benefit from the lobby's contributions to the authorities exceeds the benefit from IMF financing. The lobby, however, can observe policy actions and make use of knowledge of IMF conditionality. In fact, the lobby turns out to be the only "player" who never loses because the IMF cannot monitor government actions.

The model is of interest also because in many cases the IMF effectively cannot monitor government policy decisions or because the monitoring is too costly. The government may take indirect steps that violate conditionality and even when de jure the agreed policies are adopted, de facto policies may differ because the interpretation of laws is usually flexible and there are always exceptions to the laws.

I. The Model

Conditionality is a tool for achieving the objectives of an IMF program. Hence, in designing conditionality, the issue of paramount importance is to clearly identify the objective function of the IMF. The objectives spelled out in the IMF Articles of Agreement (IMF, 1992) clearly emphasize the global nature of the organization, which intends to strike a balance between individual country borrowing needs and the stable functioning of the world economy.

The requirement of adequate safeguards for making resources available to members experiencing balance of payments difficulties indicates the noncharitable nature of the organization. In the past decade, however, the IMF has become more involved in supporting macroeconomic stabilization in poor countries, where the objective was more that of equity than efficiency. This paper focuses solely on the efficiency objective of the IMF, leaving aside poverty reduction concerns, which are better described in the context of conditional aid literature.

⁹On the weakening of incentives in settings with multiple principals and multiple-task agents, see Dixit (1997). In this model, the principal can make negative marginal payments for the outcomes of tasks that are primarily of interest to the other principals, thereby obtaining insurance against those outcomes. This is true for all principals, and this overprovided negative externality leads to a weakening of incentives in the Nash equilibrium.

In all the proposals emphasizing efficiency as an IMF objective, IMF interference is seen as necessary to close the inefficiency gap resulting from the presence of market failures although the types of market failures and the type of IMF involvement are rather different. Resource allocation may not be efficient in the presence of market failures owing to (1) informational asymmetries, (2) the presence of externalities, or (3) missing contracts.

Sachs (1999) stresses that informational asymmetries prevent the lender from distinguishing insolvent from illiquid banks/countries, which leads to an under-supply of loans or reluctance to roll over existing debt (adverse selection problem). Rogoff (1999) and Frankel (1999) emphasize the presence of externalities from financial crises that may spill over to other countries, whereas Tirole (2002) emphasizes externalities that different lenders impose on each other by contracting with the government simultaneously. Tirole (2002) also suggests that market failures can result from missing contracts—although foreign investors are affected by the actions of both private borrowers and domestic government,¹⁰ they can only contract with the former, which leads to a possibility of government moral hazard if the government favors interests of domestic borrowers over foreign investors.

The proposed solution is either IMF conditional rescue financing itself or entrusting the IMF with a function of delegated monitor, which would substitute for missing contracts between international lenders and the domestic government and ensure an efficient supply of private financing. Following these proposals, the objective of the IMF adopted in this paper is to design conditionality to ensure efficient allocation of resources between IMF borrowers and lenders. IMF conditional financing in this case may be interpreted not only as the IMF loan per se but also as the total amount of financing the country would receive from official and private parties if it fulfills IMF conditions.

The IMF has to design its conditionality facing political realities. These realities often involve reform opposition, such as powerful vested interests (lobbies) who benefit from distorted economic outcomes but not directly from the IMF loan. The lobbies may offer the government a deal that would divert it from implementing good policy. Thus, the IMF and the lobby act as principals that try to influence policy (action) taken by the government (agent)—hence the term “common agency.”

Unsound economic policies may lead to the outcomes that benefit the lobbies but negatively affect the welfare of the general public. Distorted outcomes are captured in the model by an index of economic distortions $\omega \in [0, \bar{\omega}]$.¹¹ Distortions are linked to the policy decision $a \in A$ (where A is a set of policy options) of the borrowing country government but also reflect factors outside of government control as well as unobservable shocks. Hence, government policy choice (for example, the decision not to reform the banking system) cannot be perfectly inferred from the observed outcomes (for example, insolvency of a particular bank). Distortions in the borrowing country may spill over through trade and financial channels to other countries, thereby reducing world welfare.

¹⁰Government holds many unique control rights in fiscal, monetary, exchange rate, taxation, and institutional infrastructure matters that can affect the return of foreign investors.

¹¹These distortions are different from distortions in Mayer and Mourmouras (2002) in that here the index of distortions is a random variable whereas in Mayer and Mourmouras (2002) it is a choice variable.

The IMF provides financing on the condition that the country undertakes reforms necessary to address the causes of payment imbalances. Conditions might specify particular steps that have to be taken to implement these reforms and/or specific outcomes that have to be achieved as a result of these reforms. The IMF has to design a conditionality schedule before the government makes its next policy step and before uncertainty about economic distortions has cleared, although the disbursements take place after the outcome of reforms has been observed.

If the IMF can monitor government policy decisions, both policy a and outcomes (the degree of distortions ω) can be specified as a precondition for lending (this is a mix of policy-based and outcomes-based conditionality). If policy choice cannot be perfectly monitored by the IMF, the disbursements are tied to the observed outcomes ω only (this is pure outcomes-based conditionality).

The IMF and the lobby may “move” simultaneously if the IMF reacts quickly to changes in the domestic political environment, or the IMF may precommit to a certain conditionality schedule before the lobby approaches the government. In period zero, both principals offer schedules: a menu that ties policy (action) if it is observable and the resulting economic outcomes (the degree of distortions) with the amount of contributions or disbursements. The government makes its policy decision after having analyzed both schedules.

For simplicity, assume that there are only two policy options: “good” and “bad.” Any outcome ω may arise under any policy choice; hence, it is impossible to perfectly deduce policy from observed outcomes. The distribution of outcomes (distortions) conditional on the adoption of bad policy first-order stochastically dominates the distribution of distortions conditional on the adoption of good policy. Hence, on average, the level of distortions is higher under the bad policy choice.

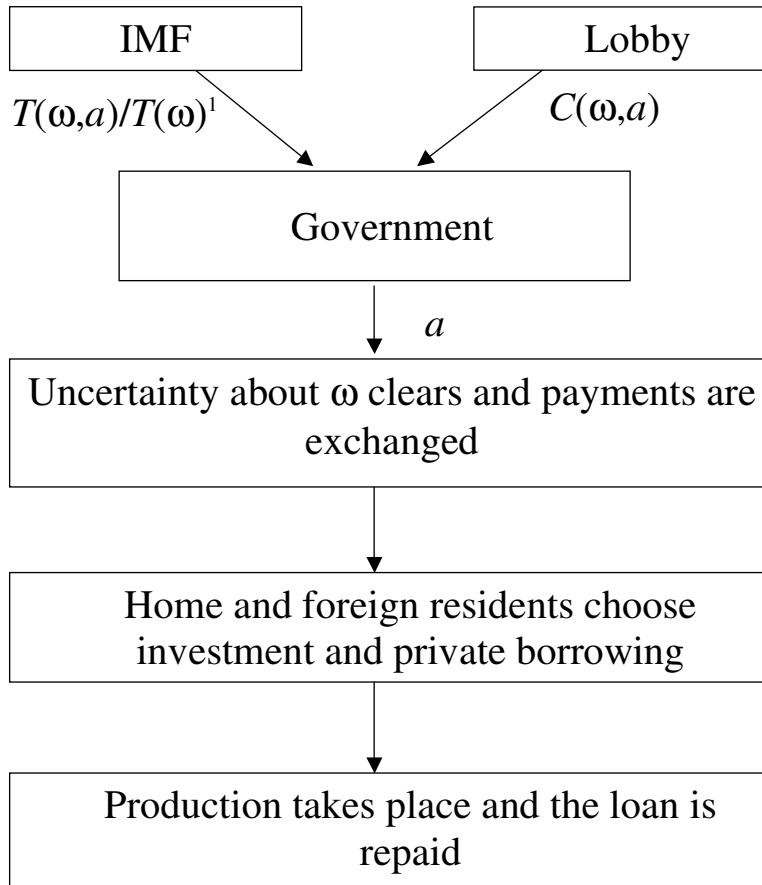
After the outcome of reforms (degree of economic distortions ω) has been observed, the IMF disburses its loan T and the lobby contributes C according to their respective schedules. Figure 1 summarizes the timing when the IMF and the lobby move simultaneously.

A representative consumer in the borrowing country can use IMF loan T either for immediate consumption C_I or investment I . The loan has to be repaid¹² in the next period at an interest rate r^B .¹³ For simplicity, we can think of a representative lender-member of the IMF that finances a loan to the borrowing country. The lender is remunerated at the rate r^L . The borrowing country can lend at a private market interest rate r^* but cannot borrow from the private markets, whereas the lender is

¹²This formulation abstracts from the possibility of default, which is central to the relationship between private borrowers and lenders. Although it may seem that by ignoring default issues, the main conflict of interest between borrowers and lenders is eliminated, in practice IMF loans have almost always been repaid with interest (Rogoff, 2002). Because the IMF is a preferred creditor, as a practical matter default is not a primary issue for the IMF. For justification of conditionality from the borrower-lender perspective, see also Khan and Sharma (2003).

¹³The IMF levies market-related interest rates for nonconcessional financing, which is based on the SDR (Special Drawing Rights) interest rate that is revised weekly to take into account changes in short-term interest rates in the major international money markets. It charges higher interest to the borrower (the rate of charge) than the interest rate accrued to the lenders (rate of remuneration), with the difference covering the cost of IMF operations.

Figure 1. Timing When the IMF and Lobby Move Simultaneously with Observable/Unobservable Policy Choice



¹ $T(\omega,a)$ is the schedule the IMF offers when policy choice is observable, and $T(\omega)$ is the schedule the IMF offers when policy choice is unobservable.

constrained to lend. The liquidity constraint reflects the presence of market frictions, which may arise owing to informational asymmetries, externalities, or missing contracts.

In principle, the IMF has two instruments with which to achieve its goals: the amount of the loan and the interest rate. Although in practice the IMF employs only the former, both instruments might be required to manage IMF objectives. For simplicity, I analyze only two cases: (1) the IMF loan is provided at effectively market interest rate and (2) the IMF loan is subsidized.¹⁴

¹⁴Under effectively market rate, the IMF charges the borrower an interest rate slightly higher than the market rate, $r^B = r^* + \theta > r^*$, whereas the lender is remunerated at an interest rate below the market rate, $r^L = r^* - \theta < r^*$, but when θ approaches zero. Under the subsidized rate, $r^B = r^L = r^* - s$.

The model can be solved backward starting from the problem of a representative consumer in the borrowing country who chooses the amount of investment and private borrowing, solving

$$\begin{aligned} & \max_{C_1, C_2, I, B} U(C_1) + \delta U(C_2) \\ & \text{subject to } C_1 = Y_0 - I + T + B; C_2 = g(I, \omega) - (1 + r^*)T - (1 + r^B)B \text{ and } B \leq 0, \end{aligned}$$

where Y_0 is the national income (endowment) in period 1 and $\delta > 0$ is the discount rate. The properties of the production and utility functions are described in Ivanova (2006).

The solution to this problem defines investment $I^0(\omega, T)$ and private borrowing $B^0(\omega, T)$ as functions of IMF loan T and degree of observed distortions. The indirect utility function of a representative consumer in the borrowing country then can be written as follows:

$$\begin{aligned} W(\omega, T) = & U(Y_0 - I^0(\omega) + T + B^0(\omega, T)) \\ & + \delta U(g(I^0(\omega), \omega) - (1 + r^B)T \\ & - (1 + r^*)B^0(\omega, T)). \end{aligned} \tag{1}$$

The properties of the indirect utility function can be obtained by differentiating the first-order conditions with respect to the parameters.¹⁵ When the borrowing constraint is binding, the utility of the general public in the borrowing country is increasing in IMF loan ($W_T(\omega, T) \geq 0$).¹⁶ When the borrowing constraint is not binding, the benefit to the borrowing country depends on the terms of the IMF loan. If the IMF offers financing at effectively market rate, the borrowing country does not benefit from IMF loan at the margin ($W_T(\omega, T) < 0$) because, when distortions are high, home residents can lend abroad at a market interest rate r^* . If the IMF offers financing at a subsidized rate, the borrowing country always benefits from an additional unit of IMF loan ($W_T(\omega, T) > 0$).

A similar problem can be formulated for a lender-country of the IMF (see Ivanova (2006) for details). If the lending constraint is binding, foreign residents benefit from an increase in IMF lending because it helps to relax the lending constraint ($W_T^* \geq 0$) when the loan is offered at effectively market rate or when the interest rate subsidy is sufficiently small.¹⁷ If the lending constraint is not binding, the IMF loan reduces welfare in the lender country ($W_T^* < 0$) because in this case the lender would prefer to borrow at an interest rate r^* from the markets.

¹⁵Calculations are available from the author upon request and the results are described in more detail in Ivanova (2006).

¹⁶Although it is not possible to sign the cross-partial, all of the relevant expressions in this paper can be unambiguously signed.

¹⁷When the IMF loan is offered at a subsidy that is sufficiently large, the lender may be hurt by the IMF loan because the cost of the subsidy, which is borne by the lender, outweighs the benefit from the additional unit of lending that relaxes the lending constraint.

The task of the IMF is to maximize the expected utility of its members—a weighted average of public welfare of IMF members (borrowers and lenders),¹⁸ namely:

$$IMF = E_{\omega} \left[\gamma W(\omega, T(\omega, a)) + W^*(\omega, T(\omega, a)) \mid a \right], \quad (2)$$

where $W(\omega, T)$ is as defined in equation (1), $W^*(\omega, T)$ is as defined in Ivanova (2006), and γ can be interpreted as the degree of concern of the IMF about the borrowing country.

The government in the borrowing country is concerned about public welfare but also values contributions from the domestic lobby. When both the IMF and the lobby can differentiate between the two policies, the expected utility of the government is

$$G = E_{\omega} [\alpha W(\omega, T(\omega, a)) + C(\omega, a) \mid a], \quad (3)$$

where α is the degree of government concern about public welfare, which is defined in equation (1), and $C(\omega, a)$ is the contribution from the lobby for observed distortion level ω when the government chooses policy a .

The lobby benefits from distortions, and the lobby's expected utility can be written as

$$L = E_{\omega} [V(\omega) - C(\omega, a) \mid a], \quad (4)$$

where $V(\omega)$ is the lobby's valuation of distortions, with $V_{\omega}(\omega) > 0$.

II. Observable Case

Benchmark Case: The IMF and No Lobby

Proposition 1. *When the government policy choice is observable and no lobby is present, the government chooses good policy and the IMF transfers resources from the lender to the borrower according to its “minimum” credible schedule $T^0(\omega)$, which also maximizes IMF utility ex post and satisfies¹⁹*

$$\gamma W_T(\omega, T^0(\omega)) + W_T^*(\omega, T^0(\omega)) = -\frac{\lambda_T(\omega)}{f(\omega \mid a_g)} \leq 0, \quad (5)$$

where $\lambda_T(\omega) = 0$ if $T^0(\omega) > 0$ and $\lambda_T(\omega) \geq 0$ for $T^0(\omega) = 0$.

¹⁸Policy a is also affected by the IMF offer T , but for notational simplicity this dependence is omitted.

¹⁹I assume that the IMF cannot offer negative contributions. Perhaps withdrawing financing and thereby discouraging private lenders could be viewed as a “negative” payment, but it is hard to think of a proportionately higher punishment for higher levels of distortions that would be required in the model to introduce negative payments.

In this case there is no problem with incentives: both the IMF and the government dislike distortions and there are no side payments from the lobby. The only role the IMF plays is to redistribute resources between the borrower and lender to remedy the presence of market frictions.

When the IMF offers financing at effectively market interest rate, the marginal utility of the IMF loan is either non-negative in both countries (constraint is binding) or negative in both countries (constraint is not binding). In this case, equation (5) implies that the IMF financing maximizes individual utilities of the borrower and lender, that is, $W_T(\omega, T^0(\omega)) = 0$ and $W_T^*(\omega, T^0(\omega)) = 0$ for those levels of distortions at which the borrowing constraint is binding in the absence of the IMF. The IMF, however, does not provide financing $T^0(\omega) = 0$ for those (high) levels of distortions at which the borrowing constraint is not binding. The amount of IMF financing is just enough to ensure frictionless market allocation ex post when $\theta \rightarrow 0$. Hence, the IMF acts as a world social planner, and conditionality plays the role of an efficiency tool even in the absence of opposition.

When the IMF offers a loan at a subsidized interest rate, its “minimum” credible schedule may deviate from frictionless market allocation owing to the distortions introduced by a subsidy. In this case, the IMF offers non-zero financing up to the point where the weighted marginal utility of the IMF loan in the borrowing country is equal to the marginal disutility of the IMF loan to the lender:

$$\gamma W_T(\omega, T^0(\omega)) = -W_T^*(\omega, T^0(\omega)).$$

In either case, $T^0(\omega)$ also maximizes IMF utility subject to non-negativity constraint given the distribution of distortions conditional on bad policy (the only difference would be the density function, which should be replaced with $f(\omega | a_b)$ and the corresponding values of the Lagrange multiplier when the IMF offers zero). In this sense, $T^0(\omega)$ is the minimum contribution schedule to which the IMF can credibly commit.

Common Agency: The IMF and the Lobby

When the IMF and the lobby move simultaneously (Figure 1) and the policy choice is observable, the two principals make simultaneous offers that involve contribution schedules conditional on both policy a and outcome ω . The strategy for each of the principals in this case is a pair: a schedule relating the principal’s contribution to the observed outcome under good policy and a schedule tying the principal’s contribution to the observed outcome under bad policy.

A subgame perfect Nash equilibrium is described in detail in Ivanova (2006), assuming that neither the IMF nor the lobby can use strategies that involve non-credible threats.²⁰ In essence, the IMF and the lobby compete with their contribu-

²⁰Dixit, Grossman, and Helpman (1996) provide a characterization of equilibrium in the common agency game (Theorem 1). Because the only required assumption to prove this theorem is that government utility is increasing in contributions of both principals, the proof goes through for the model presented in this paper, with the only difference being that all utilities need to be replaced by expected utilities.

tions to offer the government higher utility for the policy that each of the principals prefers in the absence of the other principal. The two principals raise their offers until one of them finds that increasing the bid makes it worse off than if it were to settle on the policy preferred by its opponent.

Because both principals know each other's preferences, in equilibrium the winner needs to provide the government with the same level of utility as it would attain by accepting the offer that makes the other principal indifferent between the two policy options.

The “maximum” feasible schedule the lobby is willing to offer for bad policy satisfies

$$E_{\omega} [C_{\max}^{\text{Lobby}}(\omega, a_b)|a_b] = E_{\omega} [V(\omega)|a_b] - E_{\omega} [V(\omega)|a_g]. \quad (6)$$

Similarly, the “maximum” feasible schedule that the IMF is willing to contribute is the one that provides the IMF with the lowest payoff, still at least as much as the IMF payoff under bad policy—namely, the schedule that satisfies the first-order condition of the IMF maximization problem and the following condition:²¹

$$\begin{aligned} & E_{\omega} [\gamma W(\omega, T_{\text{ob max}}^{\text{IMF}}(\omega, a_g)) + W^*(\omega, T_{\text{ob max}}^{\text{IMF}}(\omega, a_g))|a_g] \\ & \geq E_{\omega} [\gamma W(\omega, T^0(\omega)) + W^*(\omega, T^0(\omega))|a_b]. \end{aligned} \quad (7)$$

It is assumed that when the two principals “tie,” the government chooses bad policy.

Proposition 2. *When the government policy choice is observable and the IMF moves simultaneously with the lobby, two sets of subgame perfect equilibria are possible:*

- *If the IMF is a potential winner, (1) the lobby offers its “maximum” feasible schedule for bad policy $C_{\max}^{\text{Lobby}}(\omega, a_b)$ and zero for good policy, (2) the IMF offers a schedule for good policy that provides the government with slightly higher utility than what it could obtain under the “maximum” feasible lobby contribution by choosing bad policy and offers its “minimum” credible schedule for bad policy, and (3) the government chooses good policy $a^* = a_g$.*
- *If the lobby is a potential winner, (1) the lobby offers zero for good policy and for bad policy a schedule that reimburses the government for switching from good policy under the IMF’s “maximum” feasible schedule $T_{\text{ob max}}^{\text{IMF}}(\omega, a_g)$ to bad policy under the IMF’s “minimum” credible schedule $T^0(\omega)$, (2) the IMF offers its “maximum” feasible schedule $T_{\text{ob max}}^{\text{IMF}}(\omega, a_g)$ for good policy and its “minimum” credible schedule $T^0(\omega)$ for bad policy, and (3) the government chooses bad policy $a^* = a_b$.*

²¹Essentially, the question being asked here is, “What is the maximum average lobby’s contribution for bad policy that the IMF can outbid?” $T_{\text{ob max}}^{\text{IMF}}(\omega, a_g)$ is the “maximum” schedule that the IMF is willing to contribute for good policy and therefore determines the lobby’s maximum contribution that the IMF can outbid.

The resulting policy choice is a matter of the competitive power of the IMF versus the domestic lobby, and the role and design of conditionality depend on the strength of the opposition and the terms of IMF financing.

If the IMF offers a loan at an interest rate close to the market rate, the only schedule that satisfies equilibrium conditions is the IMF's "minimum" credible schedule, and the only role conditionality plays in this case is that of an efficiency tool. This is because, when the IMF offers financing at an interest rate approaching the market rate, government utility at any given lobby's contribution is maximized at the IMF's "minimum" credible schedule, which removes the borrowing constraint. Because ex post the IMF is always better off by providing financing according to its "minimum" credible schedule and the government does not benefit from borrowing more than it would in a frictionless market, the IMF effectively cannot use conditionality as an incentive tool.

If the IMF provides a subsidized loan, the borrower always benefits from the IMF loan whereas the lender may be hurt beyond a certain level of desired lending. Hence, the IMF faces a trade-off and in some circumstances may find it optimal to exchange some of the lenders' resources for good policy, which reduces the likelihood of distorted outcomes and benefits the world. In this case, the role of conditionality is twofold: it is an incentive tool for motivating the government to implement necessary policy changes and an efficiency tool for mitigating the presence of market frictions.²² Although the IMF cannot ensure an efficient market allocation owing to the distortions introduced by a subsidy, the world may be better off if the IMF offers subsidized financing, provided it can induce good policy.

Surprisingly, if the IMF were to move first, the lobby could benefit from observing the IMF schedule if the lobby is a potential winner. In this case, the IMF picks the point on the lobby's "reaction function" that provides the highest utility. When the loan is subsidized and the lobby is a potential winner, the IMF may offer a less attractive package for good policy than the package it would offer in a simultaneous-move game because it receives the same payoff (utility under bad policy) irrespective of the offer it makes for good policy.

The equilibria described above assume that the IMF cannot precommit to nondisbursement when the government chooses bad policy because such a threat is not credible (zero disbursement under a bad policy is not optimal for the IMF ex post). However, if the IMF could find access to a commitment technology, it might be better off because it may be able to induce good policy even if it cannot do so without commitment. This is because for a lobby to win in this case, it would have to reimburse the government for switching from good policy under the IMF "maximum" feasible schedule to bad policy under zero IMF contribution, which requires a higher contribution than reimbursing the government for switching to bad policy under the IMF "minimum" credible contribution.

²²I assume that the subsidy is small enough that, at least for some levels of distortions, the lender would still benefit from the IMF loan.

III. Unobservable Case: The IMF and the Lobby (Common Agency)

Unlike the IMF, which can monitor government activities from the outside only to a certain extent, the domestic lobbies have better information about government “moves,” including actions that might not be visible to the IMF or indirect steps whose effect the IMF may not immediately recognize. Hence, it seems reasonable to assume that domestic lobbies can always observe government policy choice.

When the IMF and the lobby move simultaneously (Figure 1) but the IMF cannot monitor government policy choice, a subgame perfect Nash equilibrium includes (see Ivanova (2006) for details) an additional constraint—an incentive compatibility constraint, which ensures that, under the optimal contribution schedule from the lobby and the IMF, the government voluntarily chooses the policy desired by the IMF.

The maximum utility under good policy the IMF can provide the government with when government policy is unobservable may be lower than that when policy choice is observable. The maximum IMF schedule $T_{unob\ max}^{IMF}(\omega)$ satisfies

$$\begin{aligned} E_{\omega} [\gamma W(\omega, T_{unob\ max}^{IMF}(\omega)) + W^*(\omega, T_{unob\ max}^{IMF}(\omega)) | a_g] \\ \geq E_{\omega} [\gamma W(\omega, T^0(\omega)) + W^*(\omega, T^0(\omega)) | a_b]. \end{aligned} \quad (8)$$

But now it also has to satisfy the first-order condition from a more constrained problem taking into account the incentive compatibility constraint.

Essentially, the schedule $T_{unob\ max}^{IMF}(\omega)$ determines the maximum average lobby’s contribution for bad policy that the IMF can outbid under unobservability. The maximum average lobby contribution that the IMF can outbid under unobservability should be no higher than that under observability because now the IMF faces a more constrained problem. Hence, in some cases the IMF may be unable to induce good policy under unobservability even if it could do so under observability, and bad policy will prevail in equilibrium in an unobservable case if it were chosen in equilibrium in an observable case.

Proposition 3

- *If the IMF is a potential winner, a set of good policy equilibria can be described as follows: (1) the lobby offers its “maximum” feasible contribution for bad policy and zero for good policy; (2) the IMF offers an outcomes-based schedule $T^*(\omega) = T_{unob}^{*g}(\omega)$ that satisfies the individual rationality constraint, the incentive compatibility constraint, and the first-order condition; and (3) the government chooses good policy $a^* = a_g$.*
- *If the lobby is a potential winner, the following holds: (1) when the IMF offers a subsidized loan, there are no pure strategy equilibria in a simultaneous-move game; (2) when the IMF offers financing at an interest rate close to the market rate, the bad policy equilibrium can be characterized as follows: (a) the IMF offers its “minimum” credible efficiency schedule $T^*(\omega) = T^0(\omega)$, (b) the lobby offers zero for good policy and a schedule for bad policy that reimburses the government for switching from good to bad policy under the IMF’s minimum efficiency schedule $T^0(\omega)$, and (c) the government chooses bad policy $a^* = a_b$.*

When the IMF offers financing at a subsidized interest rate, the optimal schedule reflects the trade-off between risk sharing and incentives. To motivate the government to adopt good policy, the IMF shifts additional risk onto the government, but the average amount of financing required to induce good policy is higher than in an observable case. In this case, outcomes-based conditionality serves as an incentive tool.

Moving towards outcomes-based conditionality, however, does not always imply shifting more risk onto the government. When the IMF offers financing at an interest rate close to the market rate, the optimal outcomes-based schedule is the same as in the observable case, namely, the IMF's "minimum" credible schedule $T^0(\omega)$. This is because the IMF cannot make any better offer to the government than the schedule that maximizes public welfare in the borrowing country and, hence, the government's welfare at any level of the lobby's contribution. Under this schedule both individual rationality and incentive compatibility constraints are nonbinding.

As in the observable case, under unsubsidized financing the only role conditionality plays is that of an efficiency tool, and there is no loss of efficiency from unobservability. The IMF is better off switching to outcomes-based conditionality in this case because even a small monitoring cost or the benefit from the flexibility of making policy choices would make outcomes-based conditionality more attractive.

Although there are no pure strategy bad policy equilibria when IMF loans are subsidized, bad policy equilibrium exists if the IMF offers a loan at effectively market rate. In this case, the IMF's "maximum" feasible schedule coincides with its "minimum" credible schedule. The lobby can also induce bad policy equilibrium if the IMF moves first irrespective of whether the loan is subsidized.

IV. Conclusions

This paper employs a principal-agent framework to analyze the role and optimal design of outcomes-based conditionality, with a clearly defined objective function for the IMF—namely, to maximize the joint welfare of its members in the presence of market frictions and opposition to reforms. The equilibrium policy choice is a matter of the competitive power of the IMF versus the domestic lobby. Non-observability, however, weakens IMF competitive power, and the lobby turns out to be the only player who never loses from the fact that the IMF cannot monitor policy decisions.

The results suggest that outcomes-based conditionality is a good option for the IMF when opposition to reforms is relatively weak because it provides the benefit of flexibility and allows the IMF to save on monitoring costs without loss of efficiency.

The benefits of outcomes-based conditionality in the presence of strong opposition are less clear. Powerful special interests, which extract rents from economic distortions, can "insure" the government against distorted outcomes. If the lobby can offer authorities a bribe that outweighs the value of adopting reforms, including that of IMF financing, the best the IMF can credibly commit to is to provide financing to mitigate the presence of market frictions. And nonobservability weakens the IMF's potential to outbid the lobby.

To be able to use conditionality as an incentive device, the IMF would have to offer financing at a subsidized interest rate. The optimal conditionality schedule in this case reflects a trade-off between risk sharing and incentive and shifts additional risk to the government. But the average amount of transfer from the lender to the borrower required to induce good policy is higher in the nonobservable case than in the observable case.

Without explicitly modeling the benefit from flexibility that authorities obtain when they can choose their own economic policies, the model cannot answer the question on the ultimate effectiveness of outcomes-based conditionality. But the results suggest that the optimal design and role of such conditionality should be quite different depending on the terms of IMF financing and the strength of opposition. Clearly, when the model predicts outcomes-based conditionality to be a good choice for the IMF, it will remain so when the benefit from flexibility is added to the picture. When the model indicates an efficiency loss, the benefit from flexibility should be weighed against the cost of foregoing monitoring of government decisions.

Ultimately, the question on the effectiveness of performance-based incentives in IMF programs would need to be resolved empirically, but the existing evidence on the effectiveness of the performance-based incentives in the public sector²³ suggests (see Dixit, 2002) that those incentives work well in agencies where performance can be easily and unambiguously measured. It is hard to argue that this is the case in IMF-supported programs.

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²³See, for example, the analysis in Dixit (2002) of the success of a program on performance-based organizations launched in 1993 in the United States.

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