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Implementing an International Lender of Last Resort

Abstract

Current research discusses various general frameworks for installing an international lender of last resort (ILOLR). However, it remains unclear how the ILOLR should actually operate. This paper discusses six different options of construction of an ILOLR who supports central banks in the case of currency crises. The paper concludes that the cost efficient version of the ILOLR would be direct interventions by the IMF by the use of IMF resources and the right to dispose additional reserves from central banks. The paper considers measures of cost efficiency, such as cost of borrowing, intervention, and sterilization and moral hazard problems.

JEL classification: F02, F33

Keywords: International Lender of Last Resort, International Monetary Fund, currency crises

Zusammenfassung

Die aktuelle Diskussion zur Reform des Instrumentariums des IWF beinhaltet Vorschläge zur Implementierung eines International-Lender-of-Last-Resort (ILOLR). Die Debatte lässt jedoch offen, wie die konkrete Implementierung erfolgen soll. Dieser Beitrag diskutiert sechs verschiedene ILOLR-Optionen, die Notenbanken im Falle von Währungskrisen unterstützen. Es wird geschlussfolgert, dass direkte Interventionen des ILOLR zur Unterstützung der betroffenen Währung zu bevorzugen sind. Dazu verwendet der IWF eigene Ressourcen und Rechte auf weitere Ziehungen im Bedarfsfall. Als Kriterien werden Momente der Kosteneffizienz wie z.B. Kosten der Zahlerländer, Kosten der Kreditaufnahme, der Intervention und der Sterilisation sowie Moral-Hazard-Probleme berücksichtigt.

Schlagworte: International-Lender-of-Last-Resort, Internationaler Währungsfonds, Währungskrisen

1 Introduction

The ongoing discussion of how the international financial institutions should support countries in order to minimize the risk of currency crises is now bearing a new child: the Reserve Augmentation Line (RAL). However, as it was the case with its precursor, the Contingent Credit Line (CCL), any instrument that is not build upon the requirements of credibility of the potential action to be taken in the case of a crisis is limited in its use and can as in the case of Brazil and its 1998 crisis even be counteractive. One instrument, which is discussed in economic theory since more then a century ago, and works well in practice, is the lender of last resort function of central banks.[1] Its international counterpart the international lender of last resort (ILOLR) has also been widely discussed.[2] Still, it is not implemented today and while the transmission mechanisms of an international lender of last resort operation have been outlined in the literature there is a gap in spelling out how the ILOLR should be implemented.

From the previous debates it evolved that the basic task of the ILOLR would be the provision of foreign exchange liquidity to central banks in cases of emerging currency crises to enable central banks to stabilize their exchange rates. Just as in the case of the national lender of last resort, the liquidity should be provided immediately and quantitatively unlimited. These requirements as well as that the qualifying condition of the provision of under normal conditions good collateral needs to be translated into the international frame leads to the conclusion that the instrument requires a pre-qualification process. This is in line with the currently discussed instruments of the IMF.

In this paper it is argued that the provision of liquidity by the ILOLR towards central banks is not necessary if the fundamental goal of avoiding a currency crises could be solved by other measures, e.g. direct interventions by the ILOLR. In this case the term “lender” in international lender of last resort must be interpreted in a broader sense, also as an “intervener” of last resort. The paper takes this approach to derive an implementation mode of an ILOLR that is cost efficient with regard to the underlying target, the stabilization of the exchange rate. A fundamental assumption of the paper is that interventions in foreign exchange markets can be successfully undertaken in order to stabilize exchange rates. It is also assumed that avoiding currency crises is beneficial. Whereby, this paper considers only costs and benefits resulting directly form the ILOLR operation, indirect effects through more stable international finical markets are not considered here.

1 See *Bagehot* (1874), *Thornton* (1802: 173-174).

2 Compare e.g. *Rogoff* (1999), *Fisher* (1999).

Sections 1 and 2 specify the requirements of the ILOLR and obligations of weak currency countries.[3] Section 3 discusses various cost and revenues accruing from ILOLR operation. Section 4 consolidates costs and revenues to derive a cost efficient version of the ILOLR whilst Section 5 discusses the implementation of the ILOLR. The Conclusions will summarize the findings of this paper in the last section of this paper.

3 "Weak currency countries" are countries with currency under depreciative pressure. All other countries are called "strong currency countries".

2 Specification of the ILOLR

To prevent currency crises the ILOLR has to fulfill two conditions. Firstly, it is essential that the ILOLR is able to overcome the limits of unilateral exchange rate policy in the case of currency crises; it is in particular essential to supply necessary additional currency reserves to defend the target exchange rate as discussed in section 2.1. The existence of an ILOLR can lead to moral hazard problems caused by asymmetric information about the actual situation and planed policies in weak currency countries. Therefore, secondly, the construction of the ILOLR should be able to help to avoid the potential abuse of the instrument. This is achieved through the formulation of qualification pre-requisites for potential weak currency countries, discussed in section 2.2.

2.1 Designs of the ILOLR

The limits of unilateral exchange rate policies' ability to act are reached, if the intervention potential of a central bank is exhausted. This is the case if currency reserves, which are used to prevent a market-induced depreciation or to target an appreciation of the exchange rate in line with the objective of optimal exchange rate policy, are depleted.[4] The definite limitation of currency reserves of every central bank leads to a permanent vulnerability of economies regarding the optimality of exchange rates and with that it leads to a risk for currency crises and macroeconomic instability. This process is linked with economic and social costs.[5] The vulnerability to currency crises should be prevented by the ILOLR.

Therefore, the ILOLR provides additional reserves for central banks, which got into a situation of a significant shortage of currency reserves, to maintain an exchange rate target as long as the shortage was not caused by policy decisions that were not target compatible. This provision needs to be executed in a way that secures the ability to achieve the operational exchange rate objective at any time. This requirement results in the need for additional reserves to be available at short notice and in the need for it to be quantitatively organized in a way which allows targeting the exchange rate even in the case of massive speculation against the exchange rate target.

Speculation against a currency can hold on as long as assets, which can be liquidated in the short term, held by residents and non-residents can be transferred into foreign currency. To counter such an extreme speculation effectively, the ILOLR would need to intervene with an amount equal to a so-defined monetary aggregate. Since currency crises

4 Compare *Burger, Knedlik* (2004).

5 *Baldacci et al.* (2002) illustrate empirically that currency crises are not only linked with e.g. high inflation or rising unemployment, but also lead to rising poverty and higher inequality of income distribution.

have been observed to develop in different countries at the same time, it is not enough to consider just one country; the intervention potential of the ILOLR should suffice also for support of countermeasures for several parallel crises. In the case of a global crisis up to the limits of the 'speculation potential', almost unlimited reserves would be necessary. Mundell (1983: 208) gives a number and talks about a world central bank with assets of 100 billion US-Dollars. However, as such massive speculation is judged to be highly unlikely, the holding of such enormous reserves seems to be unnecessary. In fact, as discussed below, the ILOLR affects speculation through its existence and not necessarily through action. Thus, the ILOLR should be constructed in a way in which a quantitative limit for support is not explicitly formulated, but rather is referred to as unlimited. Knowing support in unlimited amounts to be virtually impossible and hardly necessary, the term 'virtually unlimited support' is useable.

The availability of ILOLR support at short notice can only mean a support in an intraday time frame, taking the enormous daily volumes of the currency markets and the massive capital outflows in cases of speculative attacks into account.[6] From the requirements of constant disposition of additional reserves follows that the repayment of granted loans needs to be organized in a flexible manner as not to lead directly to new pressures on the control of the exchange rate. Moreover, the costs for debtors should not be too high. Very high costs could force central banks to give up the optimal exchange rate target because the result of the trade-off between costs of keeping the target and the costs of giving up the target could turn.

In the remainder of the paper, six different effective scopes for arrangements for the use of ILOLR will be introduced. In section 3 the possibilities of the ILOLR will be discussed considering the question of arising costs to be able to execute an efficiency examination. An overview over different scopes for composition can be found in table 1. According to this the ILOLR function can be fulfilled, if the ILOLR issues loans itself or mediates loans (cases 1, 2, 3). Alternatively the ILOLR intervenes at the currency markets or demands interventions by third country's central banks (cases 4, 5, 6). Following this discussion, the acquisition of used means is differentiated. Thus, the ILOLR can dispose of own deposits (cases 1, 4); however, it could only have the right of disposition of these deposits by third central banks in case of demand (cases 2, 3, 5, 6). If the characteristics are combined, eight combinations arise overall. However, due to practical considerations two cases are excluded which are marked by the ILOLR having access of deposits, but not using those.

6 *Mishkin* (2000, pp. 13-14) states that a fast reaction of the ILOLR leads to lesser necessary intervention volumes.

Table 1:
Scopes for arrangements of the ILOLR

	ILOLR has access to **deposits**	ILOLR has **options** for drawings from third central banks
ILOLR issues **loans itself**	**Case 1**	**Case 2**
ILOLR **intermediates credit** from third central banks	This case is excluded.	**Case 3**
ILOLR **intervenes on its own**	**Case 4**	**Case 5**
ILOLR **intermediates interventions** by third central banks	This case is excluded.	**Case 6**

Source: Own presentation.

Before the different cases are discussed in detail another important feature of the ILOLR implementation is introduced: the formulation of prerequisites for weak currency countries.

2.1 Specification of weak currency country obligations

To prevent various possible unintended uses of the provided reserves, requirements for potential weak currency countries of ILOLR support need to be formulated. It is to be ensured that the ILOLR support is only used for its purpose and only in the case of an actual demand, and that the resulting debt will be settled at a later date. These potential problems are typical examples for principal agent relations,[7] wherein the agent (here: weak currency country) uses the lack of information of the principal (here: ILOLR) about the agent's actual situation (e.g. solvency, compatibility of aims of the existing politics) as well as about the agent's intentions (e.g. default, misuse) to maximize his profits or utility by rational behavior individually.

The discussion of the requirements of the ILOLR has highlighted that the support of the ILOLR needs to be carried out immediately. This has an effect on the requirements for potential recipients of support of the ILOLR in terms of the qualification process for the support, the requirements needing to be completed *before* the occurrence of specific problems.[8] Since currency crisis or preliminary problems are rarely anticipated[9] and because the market structure of foreign currency markets does not allow precise predic-

7 As primarily source for principal agent theory compare *Jensen, Meckling* (1979).

8 Compare *Bird, Joyce* (2004: 139), *Fischer* (2002: 24-26) for the so-called pre-qualification.

9 As show by the example of the Asian crisis 1997/98. See *Feldstein* (1998); *Gilbert, Irwin, Vines* (2000, p. 18); *Kregel* (1998, p. 13); *Sachs* (1998, p. 17); *Fischer* (2001b).

tions of currency crises,[10] the fulfillment of the requirements needs to be granted *permanently* also.

Potential moral hazard problems between weak currency countries and the ILOLR are: first, hiding information about the actual situation; second, hiding information about the actual intentions to repay; third, hiding information about the actual intentions to (mis-)use the support.

To limit information asymmetry, the ILOLR has to follow economic and political developments in a country constantly. To receive support by the ILOLR, countries must have the duty to supply information about economic as well as exchange rate policy related developments. This duty has to include the use of standardized statistic procedures as well as the supervision of the data acquisition by the ILOLR. The generation of meaningful data should constitute the base for the supervision of exchange rate policy. What is considered as optimal policy needs to be defined explicitly and comprehensible for both sides. A country is qualified for support by the ILOLR, if data about macroeconomic developments and the use of monetary policy instruments are permanently laid open and if these are consistent with what is considered as optimal or qualifying policies.

The problem of hidden intentions could be limited by creating incentives that favor the repayment of loans. Such arrangements could include negative incentives, such as the disqualification for ILOLR support, or positive incentives, such as interest rate discounts for fast repayments. The establishment of qualification criteria can allow for predictions about the likelihood of a default. These could contain, for example, indicators for the independence of central banks or corruption indices.[11] Another solution, mentioned in the sub-section above, would be the direct intervention of the ILOLR on currency markets or to put a third central bank in charge to intervene instead of providing loans to the affected central bank. The risk of a loan default does not exist in this case. In the case of a loan, corresponding price signals could give an incentive for an object consistent use of the support. If interest rates for loans of the ILOLR are above the market interest rates for foreign currency dominated bonds, it is little rewarding for national authorities to use ILOLR loans for other objectives. To support exchange rate policy, these loans would still be interesting due to their immediate and unlimited availability.

Indicators are able to flag the potential misuse of loans or interventions. Indicators could be, for example, the missing need for objective consistent support or the observation of sufficient national currency reserves. As important as leading to a disqualification from

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10 *Schmidt, Bofinger* (2003) show that exchange rate developments are purely predicted even in non-crises situations.

11 For the role of corruption in monetary policy in developing countries compare *Huang, Wei* (2003, pp. 23-24), *Köhler* (2002).

ILOLR support would be the observations of a permanent reduction of currency reserves to limit or give up own security precautions. It would be important to develop a minimum reserve requirement which is defined as a certain part of the sum of short-term lending and liquidable portfolio investment. The size of this part should be calculated individually for each country depending on the history of capital flow volatility or on the size of trade volumes of the currency on currency markets. The IMF recommends as a starting point the complete coverage of foreign short-term debt by currency reserves. The complete coverage could be extended or lowered depending on the exchange rate regime, the currency nomination of foreign debt, the current account balance, the development of the real exchange rate, the access of the private sector to international capital markets and the level of the short-term domestic debt (as indicator for the tendency to capital flight by residents). Thereby, the common agreement on and the supervision of minimum currency reserve requirements are of high importance.[12]

Other criteria should aim at the compliance with international standards in the financial sector. These standards, for example for foreign indebtedness of banks and for the accounting of foreign currency positions in large companies, could contribute to the reduction of the vulnerability of national economies by currency crises and thus, lead to lower risk regarding the probability of speculative attacks. Such general criteria should also include consistent monetary, fiscal, regulatory and general economic policies.[13]

Another, contraire aspect of the moral hazard issue is that it might only be interesting for countries to keep an eye on the optimality of their policies, if they are not constantly jeopardized by external developments. This means that the establishment of the ILOLR does not have to lead to decreasing efforts in terms of reducing the vulnerability for currency crises, but also might have the opposite effect.[14] Thus, if the achievement of an as optimal considered flexible exchange rate target is unlikely as a result of external shocks, it might be reasonable - in the sense of a second best strategy - to switch to simpler but suboptimal exchange rate regimes such as flexible exchange rates or dollarization. The installment of the ILOLR would lead to a practice of optimal exchange rate policy as the help of the ILOLR makes it possible to guaranty the exchange rate.

12 See *IMF* (2000, pp. 20-21), *Fischer* (2001a) and "Guidelines for Foreign Exchange Reserve Management" (*IMF*, 2001a).

13 Compare e.g. "Guidelines for Public Debt Management" (*IMF*, 2001b).

14 *Corsetti et al.* (2003, p. 37).

3 Costs and revenues of operating an ILOLR

Costs and revenues arise simultaneous on three functional levels: the lending, the intervention in currency markets and the sterilization of the intervention on money markets. The functional levels can be attributed to three different actors: weak currency countries, the ILOLR and strong currency countries. The section is subdivided among the line of the actors wherein the different functional levels are discussed. It is assumed that in any case the support of the ILOLR will lead to interventions in foreign exchange markets in support of the weak currency currency, thereby the intervention could be undertaken by the weak currency country, the ILOLR or by strong currency countries' central banks. It is further assumed that interventions by the weak currency country's central bank are sterilized in order to not interfere with monetary objectives.[15] The reserves necessary for the intervention could either be provided by the ILOLR or strong currency countries to the weak currency countries by loans, or the ILOLR or the strong currency countries could intervene directly without granting loans to the weak currency country.

3.1 Costs and revenues for weak currency countries

Regarding the costs and revenues of the ILOLR operation for weak currency countries the six cases introduced in section 2.1 can be summarized into two groups: cases including a lending operation (cases 1, 2, 3) and cases excluding lending operation (cases 4, 5, 6). This follows from the fact that the different cases financing the ILOLR operation do not make any difference for the costs and benefits for weak currency countries.

Costs and revenues of the lending operation (cases 1, 2, 3 in table 1)*: Firstly, by raising a loan, costs* amounting to the interest of the loan (i_{CR} *CR)* are generated. To be able to distinguish between the different types of costs, it is assumed that central banks place the funds short-term with a profit objective. Considering these profits, losses of raising loans amount from the difference between the loan interest rate (i_{CR}) and the interest rate paid for short-term assets held in foreign currency ($i_{S\ Strong}$) multiplied by the volume of the loan (*CR*). Additionally, the central bank could opt to default. Thus profits from default ($P_{\ Default}$) have to be considered.

Costs and revenues of the intervention (cases 1, 2, 3): If a part of the loan is used for an intervention in currency markets (*IN*), there will be no revenues from holding assets in foreign currency ($i_{S\ Strong}$ *IN*). As a result of intervention[16] the domestic money base will decrease, which generates costs amounting to the domestic refinancing interest rate multiplied by the intervention volume ($i_{RF\ Weak}$ *IN*). Thus, intervention costs can be de-

15 This includes the assumption that sterilizing operations are effective.

16 Purchase of domestic currency against foreign currency.

scribed as the sum of short-term interests in the strong currency country and the domestic refinancing interest rate multiplied by the intervention volume. Additionally the weak currency country has to cover the risk of changes in the value of the domestic currency (*value risk*) if interventions do not succeed.

Costs and revenues of the sterilization (cases 1, 2, 3): Because interventions decrease the domestic money base, sterilizations are intended to compensate for that shrinking by broadening domestic refinancing. Hence, revenues amounting to the domestic refinancing interest rate multiplied by the sterilization volume will evolve ($i_{RF\ Weak}\ ST$).

Consolidated costs and revenues in the loan cases (cases 1, 2, 3): Total costs of loan, intervention and sterilization operations for the weak currency country can be summarized as follows:

$$Costs_{\ Weak} = (i_{CR} \cdot CR - i_{S\ Strong} \cdot CR) + (i_{S\ Strong} \cdot IN + i_{RF\ Weak}\ IN) - (i_{RF\ Weak}\ ST) - P_{\ Default} + value\ risk. \quad (1)$$

If costs are consolidated under the assumption of the whole volume of the loan being used for interventions (or paid back immediately) and that the intervention is sterilized completely ($KR = IN = ST$), effective costs amount to the loan interest rate multiplied by the loan volume minus profits from default and plus the costs resulting from the risk of devaluation:

$$\begin{aligned} Costs_{\ Weak} &= (i_{CR} \cdot CR - i_{S\ Strong} \cdot CR) + (i_{S\ Strong} \cdot CR + i_{RF\ Weak} \cdot CR) \\ &\quad - (i_{RF\ Weak} \cdot CR) - P_{\ Default} + value\ risk \\ &= CR\ (i_{CR} - i_{S\ Strong} + i_{S\ Strong} + i_{RF\ Weak} - i_{RF\ Weak}) - P_{\ Default} \\ &\quad + value\ risk \\ &= CR \cdot i_{CR} - P_{\ Default} + value\ risk. \end{aligned} \quad (2)$$

Costs and revenues in the direct intervention cases (cases 4, 5, 6): Another effective solution would be direct interventions by the ILOLR. The ILOLR intervenes directly in support of the currency under depreciation pressure without actually issuing a loan. The domestic central bank does not pay any interest. These interventions leave the domestic money base and the refinancing of the banking system untouched as the central bank does not take any action in the money and currency markets. Thereby neither revenues nor costs for the weak currency country arise based on the intervention; this case is neutral in costs for the weak currency country (compare table 2).

Table 2:
Losses of the weak currency countries

	Loans to weak currency central banks (cases 1,2,3)	**Intervention** by the ILOLR or strong currency countries (cases 4,5,6)
Losses	$CR \cdot i_{CR} - P_{Default} + value\ risk$	cost-neutral

Source: Own presentation.

Section 4 discusses which possibility is preferred under considering the moral hazard problems and costs for strong currency countries. Before this endeavor can be undertaken the costs and benefits for the ILOLR itself and the strong currency countries have to be specified.

3.2 Costs and revenues for the ILOLR

To fulfill the task of contributing to optimal exchange rate policy in weak currency countries by direct inventions or loans, the ILOLR needs currency reserves to provide them in cases of limitations of the domestic intervention potential of a country. The ILOLR has to draw the currency reserves from other central banks since the ILOLR cannot issue own money. There are two possibilities for generating these reserves. The ILOLR could, in analogy to the IMF, draw loans and intervention potential from deposits of member countries, holding it for those times when countries are in necessity of support.[17] Alternatively, the ILOLR could be limited to a mediating function which includes entitlements to the provision of reserves by potential strong currency countries.[18] The postulation of virtually unlimited intervention potential of the ILOLR requires a virtually unlimited volume of currency reserves of the ILOLR.

Costs and revenues of holding deposits (cases 1, 4): If the ILOLR draws from deposits of member countries, costs arise which amount to the difference of the deposit interest rate (i_{DE}) and the interest rate paid on short-term assets of strong currencies ($i_{S\ Strong}$) multiplied by the volume of the deposits of the member states (ΣDE). If costs of paying deposit interest are lower than interest revenues from assets in strong currency, the ILOLR will achieve profits from the holding of deposits and vice versa.

Costs and revenues of options for drawings from strong currency countries (cases 2, 5): If the ILOLR has only a mediating function, making the holding of reserves unneces-

17 It is here assumed that all member states of the IMF would take part in the ILOLR.

18 The ILOLR will be used when the currency of a country is under a massive depreciative pressure. This country is termed as weak currency country. Since exchange rates are defined as bilateral, every country with a currency under depreciative pressure has a counterpart in a country with a currency under appreciative pressure, here called the strong currency country.

sary, there will be no costs involved for the ILOLR, except those possible costs resulting from holding the option for reserve provisions by third central banks (K_{Option}).

Costs and revenues of interventions by the ILOLR (cases 4, 5): Not only the holding of deposits incurs revenues or losses for the ILOLR, but also interventions and issuing loans. In case of direct interventions in support of a currency under pressure the ILOLR will be confronted with costs amounting to short-term interest rates in strong currency countries ($i_{S\ Strong}$) multiplied by the intervention volume (IN)[19] and revenues amounting to interest rates paid for short-term assets in weak currency countries ($i_{S\ Weak}$) multiplied by the intervention volume.[20] If the ILOLR is to intervene in foreign exchange markets the risk of the change of the value of the purchased currency (*value risk*) occurs.

Costs and revenues of issuing loans (cases 1, 2): In the cases of issuing a loan to a weak currency country, arising revenues amount to loan interest rates (i_{CR}) multiplied by loan volume (CR) and costs amounting to short-term interest rates on strong currency countries assets ($i_{S\ Strong}$) multiplied by the loan volume (CR). The profit equals the difference of the loan and the asset interest multiplied with the loan volume. In the loan case, loan default costs ($K_{Default}$) need to be considered amounting to the loan sum multiplied by the default risk.

Costs and revenues of interventions or loans by strong currency countries (cases 3, 6): Up until now we did not consider the case in which the ILOLR limits itself to a mediating function. A situation in which the ILOLR does not get active in the case of the need to supply loans or intervene in currency markets but leaves the intervention and loan issue to the strong currency central banks based on defined rights, which allow the ILOLR to demand these actions. There are no costs for the ILOLR involved that go beyond the possible expenditures for the right to demand interventions or loan issues by strong currency countries (K_{Right}).

Costs and revenues for ILOLR operation for all possible instrument arrangements: In table 3 costs and revenues for the six different arrangements are merged. In all cases the ILOLR has to carry costs of monitoring the qualification requests and administrative costs (*monitoring costs*). With regard to the objective of overcoming the limitations of national politics, all possibilities are effective. A comment on which type of the ILOLR is efficient can only be made after a cost/revenue analysis for strong currency countries as well.

19 This volume is not available to be hold as interest bearing asset.

20 Successful intervention and with that stability of an exchange rate are assumed.

Table 3:
Losses of the ILOLR

	ILOLR has access to **deposits**	ILOLR has **options** for drawings from third central banks
ILOLR issues **loans itself**	$(i_{DE} - i_{S\ Strong}) \cdot \Sigma DE$ + $(i_{S\ Strong} - i_{CR}) \cdot CR + K_{Default}$ + *monitoring costs*	$K_{Option} + (i_{S\ Strong} - i_{CR}) \cdot CR$ + $K_{Default}$ + *monitoring costs*
ILOLR **mediates loans** by third central banks	This case is excluded.	K_{Right} + *monitoring costs*
ILOLR **intervenes on its own**	$(i_{DE} - i_{S\ Strong}) \cdot \Sigma DE$ + $(i_{S\ Strong} - i_{S\ Weak}) \cdot IN$ + *monitoring costs* + *value risk*	K_{Option} + $(i_{S\ Strong} - i_{S\ Weak}) \cdot IN$ + *monitoring costs* + *value risk*
ILOLR **mediates intervention** by third central banks	This case is excluded.	K_{Right} + *monitoring costs*

Source: Own presentation.

3.3 Costs and revenues for strong currency countries

Costs and revenues for countries, which enable the ILOLR to fulfill its function by their deposits, loans or direct intervention, are a most important factor within the analysis of an efficient arrangement of an ILOLR. A one-sided burden would be a serious obstacle for the installment of the ILOLR. This section will investigate the costs of an ILOLR for strong currency countries, and contrast the costs with the benefits.

Costs and revenues in the deposit case (cases 1,4): In the simplest case for strong currency countries, they provide permanent deposits to the ILOLR who can use these assets in case of demand (cases 1, 4). The action of the ILOLR itself causes losses or profits, which have to be somehow transferred to strong currency countries sometimes. For now these losses and profits will remain unexamined, while assuming that losses as well as profits of the ILOLR will be balanced over periods by carrying them forward. If this is the case, costs and profits for strong currency countries (which include potential weak currency countries as well)[21] result from the provision of the domestic currency only. Costs arise from the loss of interest on money base due to sterilization ($i_{RF\ Strong} \cdot DE$) and profits arise from the return of deposits held with the ILOLR ($i_{DE} \cdot DE$). From this

21 In the current construction of the IMF, deposits are hold by all member countries, so that strong currency countries include crises vulnerable countries too.

the implication can be drawn that central banks shorten domestic money supply by exact the same amount which they transfer to the ILOLR and, thereby, sterilize the transaction. The loss of the whole transaction amounts to the difference between the domestic refinancing interest rate and the deposit interest rate multiplied by the amount provided (compare table 4). The deposit transaction is neutral in costs for the central bank if interest rates are equal. The calculation of deposit interest rates at the IMF Special Drawing Rights is carried out by using a weighted average of the three-month money market rates of the Euro, Yen, British Pound and US-Dollar.[22] Depending on the monetary policy framework, three-month money market rates can develop similar to shorter-term rates, which justifies the assumption.[23] For the costs of the strong currency countries in the deposit case it is irrelevant whether the ILOLR uses deposits to issue loans or to intervene.

Costs and revenues in the case of options for drawings by the ILOLR (cases 2, 5): If there are no deposits to be held with the ILOLR, but there are just options for provision of domestic currency for the case of an actual intervention or granting of loans (cases 2, 5), then costs for strong currency countries will arise from missing interest on domestic money base. Costs amount to ($i_{RF\ Strong} \cdot CR$) respectively ($i_{RF\ Strong} \cdot IN$), depending on whether an intervention is conducted or a loan granted. There are revenues of interest payments by the ILOLR amounting to ($i_{DE} \cdot CR$) respectively ($i_{DE} \cdot IN$). If it is assumed that possible profits or costs of activities of the ILOLR are forward written, the ILOLR bears the default risk, then costs for strong currency countries equal the difference of the domestic refinancing rate and the ILOLR interest rate on deposits multiplied by the loan or intervention volume. If deposits are repaid to the strong currency country after the loan matured or after the repurchase of intervention reserves, different profits accrue compared to the case of permanent deposits. Costs or revenues will be lower depending on different maturities of deposits. In the event of an equality of refinancing and deposit interest rates, neither losses nor profits will accrue.

Costs and revenues in the direct intervention and loan cases (cases 3, 6): Another picture evolves if supply countries do not only hold risk free deposits at the ILOLR, but if they are also obliged to act as loan supplier or intervener. In the loan case (case 3), revenues equal loan interest rates multiplied by the loan volume ($i_{CR} \cdot CR$) and costs equal the lost return from issuing domestic money base ($i_{RF\ Strong} \cdot CR$) plus default costs ($K_{Default}$). In the event of direct interventions of strong currency countries in currency markets in support of a weak currency (case 6), revenues from holding the foreign currency assets purchased by intervention ($i_{S\ Weak}\ IN$) and costs of loss of interest paid on money base ($i_{RF\ Strong}\ IN$) arise. Costs and profits can also result from changes in currency valuation

22 *IMF* (2005a).

23 Compare *Bofinger* (2001, pp. 332-333).

(*value risk*). If an intervention is successful and the exchange rate develops in line with interest parity, then sterilized interventions are cost neutral.

Table 4 considers also revenues of strong currency countries from requirements of the ILOLR of provision of reserves (P_{Option}) and the obligation of intervention or loan granting (P_{Right}).[24] The losses presented in table 4 can be transformed into cost neutrality if a few simplifying assumptions are introduced. These assumptions are: The strong currency country's refinancing rate matches the deposit interest rate of the ILOLR and the credit interest rate paid by the weak currency country to the supply country; a loan outfall is excluded; and the intervention is successful (ensuring interest rate parity). Depending on which assumption is given up or added, different loss-profit constellations will result. The most probable assumption to come true is the success of intervention and ensuring of interest rate parity. This assumption is sufficient to conclude that interventions by a third central bank on behalf of the ILOLR in favor of a weak currency are always neutral in costs (apart from administrative costs).

Table 4:
Losses of strong currency countries (without valuation changes)

	ILOLR has access to deposits	ILOLR has options for drawings from third central banks
ILOLR issues loans itself	$(i_{RF\ Strong} - i_{DE}) \cdot DE$	$(i_{RF\ Strong} - i_{DE}) \cdot CR - P_{Option}$
ILOLR mediates loans by third central banks	This case is excluded.	$(i_{RF\ Strong} - i_{CR}) \cdot CR$ $+ K_{Default} - P_{Right}$
ILOLR intervenes on its own	$(i_{RF\ Strong} - i_{DE}) \cdot DE$	$(i_{RF\ Strong} - i_{DE}) \cdot IN - P_{Option}$
ILOLR mediates interventions by third central banks	This case is excluded.	$(i_{RF\ Strong} - i_{S\ Weak}) \cdot IN - P_{Right}$ $+ value\ risk$

Source: Own presentation.

That costs of support of the ILOLR by strong currency countries are negligible can be seen above. Hence, the discussion of benefits for strong currency countries from the stability in weak currency countries is dispensable. But it should not be forgotten that investors from strong currency countries might be individually hit by sudden depreciations of their investments, that loan suppliers have to cope with loan defaults, or that exporters could be confronted with a decreasing foreign demand.[25] Even if such problems of sudden depreciation in an emerging market country will only lead to marginal costs in

24 Administrative costs arising with the operation are not included. It is also assumed that such expenditures arise within daily business permanently and that costs of such activities are negligible.

25 Compare *Bird* (2003, p. 194), *Madrick* (1998, p. 42), *Wohlmuth* (2003, p. 1).

potential strong currency countries, then it is still the case that significant negative effects will be perceived in strong currency countries as well. This is especially the case in the event of an accumulation of crises, as can be found in the case of contagion, such as in the course of currency crises in South East Asia 1997-98 and Russia 1999.[26] Costs which have to be carried by strong currency countries due to social misery in the form of political instability and migration are left out of the consideration here.[27]

To draw a possible conclusion: An ILOLR can be arranged in such a way that it is neutral in costs except administrative costs for strong currency countries too.

[26] *Fischer* (1998, p. 1) calls the mentioned crises „the global economic crisis".

[27] Compare *Rogoff* (1999, p. 11).

4 Consolidating costs and revenues

In this section, costs and profits of the ILOLR arising for several players will be aggregated in a social welfare function. This will enable us to control for which effective instrument should be preferred when implementing the ILOLR.

Table 5:
Losses from activities of the ILOLR

Variations of the ILOLR	Losses for strong currency countries	Losses for the ILOLR	Losses for weak currency countries
ILOLR has deposits and issues loans (case 1)	$(i_{RF\ Strong} - i_{DE}) \cdot DE$	$(i_{DE} - i_{S\ Strong}) \cdot \Sigma DE + (i_{S\ Strong} - i_{CR}) \cdot CR + K_{Default}$ + *monitoring costs*	$CR \cdot i_{CR} - P_{Default}$ + *value risk*
ILOLR has deposits and intervenes on its own (case 4)	$(i_{RF\ Strong} - i_{DE}) \cdot DE$	$(i_{DE} - i_{S\ Strong}) \cdot \Sigma DE + (i_{S\ Strong} - i_{S\ Weak}) \cdot IN$ + *monitoring costs + value risk*	cost neutral
ILOLR has options for drawings and issues loans (case 2)	$(i_{RF\ Strong} - i_{DE}) \cdot CR - P_{Option}$	$K_{Option} + (i_{S\ Strong} - i_{CK}) \cdot CR + K_{Default}$ + *monitoring costs*	$CR \cdot i_{CR} - P_{Default}$ + *value risk*
ILOLR has options for drawings and intervenes on its own (case 5)	$(i_{RF\ Strong} - i_{DE}) \cdot IN - P_{Option}$	$K_{Option} + (i_{S\ Strong} - i_{S\ Weak}) \cdot IN$ + *monitoring costs + value risk*	cost neutral
ILOLR has right to demand loan supply by a strong currency country (case 3)	$(i_{RF\ Strong} - i_{CR}) \cdot CR + K_{Default} - P_{Right}$	K_{Right} + *monitoring costs*	$CR \cdot i_{CR} - P_{Default}$ + *value risk*
ILOLR has right to demand intervention by a strong currency country (case 6)	$(i_{RF\ Strong} - i_{S\ Weak}) \cdot IN - P_{Right}$ + *value risk*	K_{Right} + *monitoring costs*	cost neutral

Source: Own presentation.

The analysis of different varieties of costs of the ILOLR for participating countries discussed above leads to some economic conclusions relating to an optimal conception of the ILOLR. It appears that a direct intervention by the ILOLR or by a strong currency country should be favored over the issue of a loan. This leads to lower costs for weak currency countries and is furthermore connected with lower risks for supply countries as the probability of a default by moral hazard can be excluded. Different varieties of costs of the ILOLR are summarized in table 5. It is considered which level takes the risk of value changes and which costs could arise for monitoring qualification criteria of weak

currency countries as well as possible revenues for weak currency countries in the case of a default.[28]

Assuming strong currency countries to adjust profits or losses of the ILOLR, the costs of strong currency countries and costs of the ILOLR could be consolidated.[29] It should be emphasized that important information is lost with such a consolidation. In the case of a strong currency country intervening or issuing loans itself, costs due to value losses or loan default might arise only in this country. But if the ILOLR is bearing the risk and resulting costs or profits, then all countries which hold deposits will bear the risk.[30] This important difference should be no hindrance for consolidation at this moment; it will be considered later on. In going one step further by consolidating all costs arising with ILOLR activities including those from weak currency countries, a picture evolves as in table 6. This step is derived from the consideration of which losses accrue in the frame of a global welfare function.[31]

Table 6:
Consolidated losses from activities of the ILOLR

Variations of the ILOLR	Consolidated Losses for strong currency and weak currency countries and the ILOLR
ILOLR has deposits and issues loans (case 1)	$(i_{RF\ Strong} - i_{S\ Strong}) \cdot \Sigma DE + (i_{S\ Strong}) \cdot CR$ + *monitoring costs + value risk*
ILOLR has deposits and intervenes on its own (case 4)	$(i_{RF\ Strong} - i_{S\ Strong}) \cdot \Sigma DE + (i_{S\ Strong} - i_{S\ Weak}) \cdot IN$ + monitoring costs + value risk
ILOLR has options for drawings and issues loans (case 2)	$(i_{RF\ Strong} - i_{DE} + i_{S\ Strong}) \cdot CR$ + *monitoring costs + value risk*
ILOLR has options for drawings and intervenes on its own (case 5)	$(i_{RF\ Strong} - i_{DE} + i_{S\ Strong} - i_{S\ Weak}) \cdot IN$ + *monitoring costs + value risk*
ILOLR has right to demand loan supply by a strong currency country (case 3)	$(i_{RF\ Strong}) \cdot CR$ + *monitoring costs + value risk*
ILOLR has right to demand intervention by a strong currency country (case 6)	$(i_{RF\ Strong} - i_{S\ Weak}) \cdot IN$ + *monitoring costs + value risk*

Source: Own presentation.

28 A more detailed reflection of the quantification of value risks will be given in the course of this section.

29 In doing so, the simplifying assumption of an adjustment of profits and losses of the ILOLR over time will be given up and be replaced by supposing that the strong currency country will cover profits and losses of the ILOLR.

30 The countries holding deposits match the member states of the IMF.

31 The concept of welfare used here assumes that costs represent welfare losses and profits welfare profits. For the aggregation of welfare results into a global welfare function, it is assumed that welfare of each country is weighted equally.

A global welfare analysis of costs of the ILOLR includes a comparison of costs caused by the ILOLR with the costs arising from international financial architecture without the ILOLR. Within the scope of tasks of the IMF, funds are spent already to observe the development of member states (including the setting of standards in statistic data).[32] Since these costs arise anyhow, attributing these to the instrument of the ILOLR can only be partially justified. Assuming that hitherto existing expenses for monitoring of the IMF by implementing the ILOLR will not increase significantly, they can be disregarded in further analyses as marginal considerations.[33]

To simplify the analysis, it will be presumed that interest rates for short-term assets equal refinancing interest rates in the respective countries. This is justifiable with requirements which hold that interest-bearing assets need to be able to be liquidized permanently. Hence, short-term relates to time periods at the over-night money market. Normally, rates at over-night money markets diverge barely from refinancing interest rates, so the equalization is justified.[34] Another assumption is the analogousness of interest rates on deposits of the ILOLR with the interest rates of refinancing rates in strong currency countries. Such an interest rate method is found in the current construction of the IMF.[35]

Furthermore, it is assumed that the amount of direct interventions by strong currency countries or the ILOLR is identical to the loan amount which is used for interventions by weak currency countries. In doing so, it is ignored that interventions of different institutions might entail different reactions of market players which would demand a higher or lower volume of intervention respectively.[36] These effects can be dampened by communicative means.[37] Table 7 reflects these assumptions in a simplified form.

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32 E.g. in terms of the 2001 created „International Capital Market Department“ (*IMF* 2002, p. 2, *Köhler* 2001).

33 The actual needs of extension of the monitoring function will be illustrated in the section below.

34 For the perfect controllability of rates of over-night money by central banks, compare *Bofinger* (2001, pp. 328-332).

35 Compare section 3.3.

36 It is imaginable that intervention by the ILOLR or strong currency countries could be executed more credible than intervention by weak currency countries and could be executed at lower volumes.

37 It could be balanced by a guarantee of strong currency countries or the ILOLR to grant loans unlimited.

Table 7:
Losses from activities of the ILOLR with simplifying assumptions

Variations of the ILOLR	Consolidated Losses
ILOLR has deposits and issues loans (case 1)	$(i_{S\ Strong}) \cdot IN$ + *value risk*
ILOLR has deposits and intervenes on its own (case 4)	$(i_{S\ Strong} - i_{S\ Weak}) \cdot IN$ + *value risk*
ILOLR has options for drawings and issues loans (case 2)	$(i_{S\ Strong}) \cdot IN$ + *value risk*
ILOLR has options for drawings and intervenes on its own (case 5)	$(i_{S\ Strong} - i_{S\ Weak}) \cdot IN$ + *value risk*
ILOLR has right to demand loan supply by a strong currency country (case 3)	$(i_{S\ Strong}) \cdot IN$ + *value risk*
ILOLR has right to demand intervention by a strong currency country (case 6)	$(i_{S\ Strong} - i_{S\ Weak}) \cdot IN$ + *value risk*

Source: Own presentation.

A further assumption is introduced to encourage clarity of costs of the ILOLR. If it is assumed that operations of the ILOLR are successful, then there is no value risk. Exchange rates vary under the assumption of optimality in accordance with the theory of interest parity.[38] Value changes can be described as follows:

$$value\ loss = IN - IN\frac{S_{t+1}}{S_t} = -IN(\frac{S_{t+1}}{S_t} - 1) = -IN(\frac{S_{t+1} - S_t}{S_t}) = -IN \cdot \Delta s\,. \tag{3}$$

When including interest parity:

$$\Delta s = (i_{S\ Strong} - i_{S\ Weak}) \tag{4}$$

resulting in a value loss of:

$$value\ loss = -IN \cdot (i_{S\ Strong} - i_{S\ Weak})\,. \tag{5}$$

By implementing this value loss in table 7, figures as presented in table 8 result.

Under these assumptions, direct intervention solutions by the ILOLR or by strong currency countries are neutral in costs concerning a global welfare function. These should be preferred to a loan issue causing welfare losses.

38 Compare *Burger, Knedlik* (2004).

Table 8:
Losses from activities of the ILOLR when keeping interest parity

Variations of the ILOLR	Consolidated Losses
ILOLR has deposits and issues loans (case 1)	$(i_{S\ Strong}) \cdot IN$ - $(i_{S\ Strong} - i_{S\ Weak}) \cdot IN$ = $i_{S\ Weak} \cdot IN$
ILOLR has deposits and intervenes on its own (case 4)	$(i_{S\ Strong} - i_{S\ Weak}) \cdot IN$ - $(i_{S\ Strong} - i_{S\ Weak}) \cdot IN$ = **zero**
ILOLR has options for drawings and issues loans (case 2)	$(i_{S\ Strong}) \cdot IN$ - $(i_{S\ Strong} - i_{S\ Weak}) \cdot IN$ = $i_{S\ Weak} \cdot IN$
ILOLR has options for drawings and intervenes on its own (case 5)	$(i_{S\ Strong} - i_{S\ Weak}) \cdot IN$ - $(i_{S\ Strong} - i_{S\ Weak}) \cdot IN$ = **zero**
ILOLR has right to demand loan supply by a strong currency country (case 3)	$(i_{S\ Strong}) \cdot IN$ - $(i_{S\ Strong} - i_{S\ Weak}) \cdot IN$ = $i_{S\ Weak} \cdot IN$
ILOLR has right to demand intervention by a strong currency country (case 6)	$(i_{S\ Strong} - i_{S\ Weak}) \cdot IN$ - $(i_{S\ Strong} - i_{S\ Weak}) \cdot IN$ = **zero**

Source: Own presentation.

For an explanation of different kinds of welfare losses, the simple example of a direct loan issue or intervention by strong currency countries should be consulted. Thereby, no costs or profits arise for the ILOLR. The revenues of a strong currency country in the loan case will amount to the difference between loan interest rates and strong currency country's interest rates multiplied with the loan volume, which result from the loan issue and the necessary sterilization of the expansion of domestic money supply respectively. In the event of a direct intervention by a strong currency country, profits are generated from placing the acquired foreign currency reserves amount to the weak currency countries interest rate multiplied by the intervention volume. Simultaneously costs accrue due to the sterilization amounting to strong currency country's interest rate multiplied by the intervention volume. The difference between both options for a strong currency country lies in the difference of revenues, though being confronted with identical costs (sterilization costs) in both cases. Hence, in case of higher loan interest rate than weak currency country's interest rate, the loan issue option is favorable for strong currency countries and in the alternative case (higher weak currency country's interest rate than loan interest rate) an intervention would be preferred to a loan issue.

In weak currency countries, both alternatives will also lead to different costs and revenues. As demonstrated in section 4.1, in the case of interventions by strong currency countries neither costs nor revenues accrue because the domestic money base – consisting of refinancing money supply and currency reserves – is left untouched. In other words: since the weak currency country is not intervening itself, there is no necessity of sterilizing this intervention. But in the case of a loan issued to a weak currency country where it has to intervene itself the situation is different. Besides loan costs (loan interest

rate multiplied with the loan sum) and profits (strong currency country's interest rate multiplied with the loan volume), there will also be intervention and sterilization revenues or costs respectively. The intervention bears costs because possible interest earnings from placing the loan volume will omit (supply country's interest rate multiplied with the intervention volume). Additionally, interventions will lead to a contraction of the money supply and with this to extra costs in the amount of the weak currency country's interest rate multiplied with the intervention volume. These extra costs will be completely balanced when sterilizing the intervention totally (revenues due to the expansion of money supply in the amount of the intervention volume multiplied by the weak currency country's interest rate). To sum up: Loan revenues are compensated by intervention costs. Sterilization revenues will balance the second part of intervention costs. The difference between the alternatives of loan and intervention is formed by loan costs.

If combining the levels of strong currency and weak currency countries, it appears that the difference between the alternatives of loan and intervention for strong currency countries lie in the difference between loan and weak currency country's interest rates multiplied with the intervention volume; while for weak currency countries there are only loan costs. When consolidating costs and profits of participants, loan costs and revenues are omitted. The difference between weak currency country's interest rates multiplied by the intervention volume remains, originating from the interest bearing of acquired foreign currency during the intervention by the strong currency country.

The analysis has so far demonstrated that direct intervention solutions should be preferred over a loan issue, a conclusion that applies to the analysis of global welfare as well as for considerations of moral hazard problems. Therefore, loan issue solutions will be disregarded in the following. Intervention solutions can be classified into three categories: Firstly, the ILOLR has deposits and intervenes itself; Secondly, the ILOLR has demands on deposits and intervenes itself; Thirdly, the ILOLR has demands on intervention by strong currency countries. But which alternative is preferable?

Since in all cases neither costs nor profits arise for weak currency countries, these can be excluded from the analysis. An important difference between direct intervention by a strong currency country (case 6) and an intervention by the ILOLR (cases 4 and 5) lies – as mentioned above – in the attribution of costs and revenues from the intervention. While in case 6, possible costs and revenues arise for one country only, all countries which hold deposits, and with that balance the result of the ILOLR, will have to bear the costs and profits of an intervention in cases 4 and 5. Costs and revenues from the operation will only accrue, if the intervention is not successful. Hence, it is not appropriate to talk of costs and profits, but of risks. To not incur the danger of straining a single country with all risks, the first two cases should be preferred in constructing the ILOLR.

5 Implementation of the ILOLR by IMF reform

One assumption of the remarks about the requirements on the ILOLR, as illustrated in section 2, was that the intervention volume should be unlimited, at least virtually. As deposits of whichever amount cannot ensure unlimited quantity, case 4 (intervention by the ILOLR out of deposits) cannot meet this requirement. However, in the framework of the reforms of the IMF for the implementation of an ILOLR, it is hardly reasonable not to access deposits of member states since they are held nevertheless.[39] The first case can easily be integrated into the existing system, but it is not sufficient. Therefore, there have to be additional options for further deposits from member states.[40] The „General Arrangements to Borrow" allow the IMF to access another US$ 26 Bn which are provided by eleven industry nations on demand. The „New Arrangements to Borrow", adopted in 1998, raise these provisions up to US$ 52 Bn that are mobilized by 26 countries.[41] In the sense of theoretical boundlessness of intervention potential, these additional refund possibilities should be quantitatively unlimited. Moreover, there should exist closely defined rights of the ILOLR to spare long term decision processes.[42] Thus, a sufficiently considered option of the ILOLR would be a combination of intervention by the ILOLR drawing from deposits with the option on expansion of deposits in case of demand. Hence, recapitulating, the ILOLR should be implemented by reforms of the IMF:[43]

1. *Intervention mechanism:* The IMF creates a permanently available intervention mechanism whose activation is based on the observation of political and economic developments (especially currency reserves). This mechanism will support member states in the case of realization of optimal policy in combination with a shortage of national currency reserves by interventions in currency markets. Volume and duration of interventions are depending on the requirements for maintenance of optimal national policies and are theoretically unlimited. The intervention mechanism can be carried out automatically as far as possible. If

39 The IMF disposes of an intervention potential of US$ 117 Billion and deposits in the amount of US$ 327 Bn on Feb. 28th, 2005 (*IMF*, 2005b).

40 Another possibility would be to massively augment deposits of member states. Since one fourth of deposits must be held in form of foreign currency, this idea is disapproved (*IMF*, 2005b). Especially for countries with limited access to international capital markets, a raise of quotas would be connected with an increase in costs, since these countries would have to pay higher risk premiums for the acquisition of reserves, but would receive the same deposit interest rates (Compare *Polak*, 2004, p. 250).

41 Among these countries are also emerging market countries such as Chile, Hong Kong, South Korea, Malaysia and Thailand. Compare *IMF* (2005c).

42 At the moment, strong currency countries have to accept an extension of deposits on demand of the director of the IMF whereupon the executive board activates the refunding mechanism.

43 As mentioned in above, this paper concentrates on the reform of the IMF. Another discussed alternative institution to implement the ILOLR would be the Bank for International Settlements which appears to be little qualified due to limited capacities to monitor the qualification requirements (*Mishkin*, 2000, p. 19).

the compliance with optimal policy rules is being observed in a member state and currency reserves run short of the agreed minimum currency reserve rate, then it is noticed and communicated between member states and the IMF.[44] If an increase of currency reserves is not possible without violation of the optimality of policy, the monitoring is intensified. This allows the ability to intervene in favor of the weak currency in the case of an under-running of the agreed level of currency reserves. The ILOLR intervention mechanism should be incorporated into the main fund facilities. This would meet its central importance in terms of crises prevention. A change of the Articles of Agreement would not be necessary.

2. *Monitoring and consulting functions:* The IMF could adapt its monitoring function to the requirements of the ILOLR for potential weak currency countries. This function must especially ensure the permanent control of qualification criteria. To prevent stigmatization of applicant countries, qualification criteria needs to be controlled constantly and results should be publicly communicated. Thereby, an early-warning mechanism should allow adjustments of suboptimal policies, so that a sudden disqualification will not become a crisis trigger itself.[45] The provision of standardized macroeconomic data is already been secured.[46] The formulation, discussion and conjoint processing of optimal national money and currency politics should be integrated as a new instrument of consulting tasks of the IMF. The surveillance of the realization of these policies is as important as the permanent observation of the development of currency reserves. Furthermore, international standards of transparency, independence and capital market stability should be seized. There are already activities in the IMF today.[47] The establishment of such a monitoring and consulting function can be carried out within the framework of the existing Articles of Agreement, especially in terms of article IV.

3. *Additional reserves:* Member states commit to the provision of additional reserves on demand with the objective to guarantee the unlimited nature of the intervention potential. For implementation, the General Arrangements to Borrow described above should be changed adequately. Thereby, fixation certain maximum amounts should be given up in favor of calculated percentages analogue to the IMF quotas.[48]

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44 The use of the currency reserves as an intervention criteria leads to the dispense of complicated early-warning systems of currency crises (for an overview see: *Abiad*, 2003a, 2003b, pp. 3-6).

45 In this regard it should be evaluated whether there are intermediate solutions between qualification and disqualification. Thus, ILOLR support could be quantitatively limited. Moreover, member states that cannot qualify still have access to other instruments of the IMF.

46 Compare „Dissemination Standards Bulletin Board“ which provides the „Special Data Dissemination Standard“ and the „General Data Dissemination System“ (*IMF*, 2005d).

47 Compare *IMF* (2004).

48 Compare *IMF* (2005c).

6 Conclusions

The discussion of the costs and revenues of the operation of an ILOLR shows that the version of direct interventions by the IMF is to be preferred. The necessary funds should be drawn from member state deposits and from additional reserves provided by member states on demand. The whole operation of the ILOLR could be run without incurring costs except administrative costs. Finally, if the ILOLR instrument is credibly installed, there is no need for actual operation. In analogy to the national lender of last resort, the ILOLR takes effect by its pure existence.

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