

Referee report on
“A Model of the IMF as a coinsurance Arrangement”
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This paper presents a theoretical analysis with a twofold purpose. The first is to provide a rationale for the IMF as a coinsurance agreements among participating countries; the second is to show that an ex-ante loan contract between the IMF and the participating country (i.e. a contract signed before effort decisions are taken) is more likely to create the right incentives than an ex-post loan contract.

The analysis treats an important topic and it contains a wealth of useful information about institutional aspects and about pertinent economic literature. The paper, however, does not provide sufficiently new and valuable results. The main weaknesses of the paper are more in detail described below.

Response: If we just look at the final results as they are, they may look like new results. However, the analytical framework in Section III with altruism and moral hazard is new. Therefore, we still believe that paper provides some value to the literature.

1. The first part of the analysis (Section II) contains a model of voluntary coinsurance among countries which is interpreted as representing the functioning of the IMF. Countries are risk averse and subject to idiosyncratic income risk. The model shows that, in these circumstances a country would like to be insured (Lemma 1); that insurance may weaken incentives (Lemma 2); that, because of this, under the optimal second-best insurance scheme there is no optimal risk-sharing (i.e. countries are less insured than in first best; Proposition 1); that if countries are perfectly altruistic (i.e. they all care about each other utility) then incentives are restored even under an insurance scheme (i.e. the free-riding associated with insurance disappears if agents maximize social welfare; Proposition 2). Although the framework is coherent and correctly specified, all these finding constitute basic results of microeconomic theory, providing no original insights.

Response: We agree with this comment. We will reduce this part of the paper to the minimum so that we can emphasize the result in Proposition 3.

2. The most interesting result of Section II is in Proposition 3, showing that under asymmetry countries may fail to fully internalize the externalities connected with their effort decision under a mutual insurance scheme, even if they maximize social surplus. However, with respect to this finding, there are several aspect which need to be clarified. First, the comments fail to provide any intuition for the result. Second, given that with $\lambda=1$ both agents are maximizing social welfare, it is not clear what is its implication for efficiency. Third, looking at the proposition and the proof, it would appear that the analysis is focusing on a “symmetric” equilibrium where both countries choose the same e^* and, if so, this would clearly constitute an assumption difficult to justify in an asymmetric environment. Fourth, the scope of this part of the analysis is unclear; it would appear that it is just meant to show that even when countries are perfectly altruistic ($\lambda=1$) they do not fully internalize the effects of their effort choice if they are different. But then the question is: why not just making the very standard and realistic assumption that $\lambda < 1$?

Response: We will provide more intuition to this result. Proposition 3 shows that, if there is one dimension of asymmetry, then the moral hazard problem does not disappear.

3. According to the authors “absent such concern for each other’s welfare, we may need other mechanisms to mitigate the moral hazard problem in a coinsurance scheme between countries.” Section II.D.1 emphasizes that “if monitoring by peers is costless, then the moral hazard problem disappears”. Since it is also very reasonable to assume that “Although peer monitoring can lessen the costs of surveillance in a coinsurance arrangement, it is hard to eliminate such costs entirely”, the whole section seems pointless.

4. Relatedly, Section II.D.2 argues that “the group of countries in the coinsurance arrangement may find it in their interest to form an institution, say the IMF, that functions as a delegated monitor” and, at this regard, the authors correctly cite the notion of “delegated monitoring”. However, differently from Diamond’s (1984) paper, they do not provide any theoretical explanation of why and how an IMF-like institution can economize in a context of sovereign debtors on monitoring cost compared to alternative arrangements. More precisely, the important feature of Diamond’s theory of delegated monitoring is that it explicitly takes into account the incentives of the delegated monitor.

Response to 3 and 4: Section II.D is mainly for motivation. It is a bridge between the IMF as a coinsurance arrangement and the optimal contract between an altruistic IMF and a non-altruistic country. Thus, we did not provide any theoretical analysis on the IMF as a delegated monitor.

5. The model presented in Section III is aimed at providing an answer to the following question: “Should the IMF precommit to a loan contract ex ante? Or should the loan amount and contract be assessed and formulated ex post, that is, when the country approaches the IMF for resources?”. The problem with this is that the model presented does not allow to endogenize the existence of a coinsurance agreement as the outcome of a “mechanism design” problem (as it was the case in Section II). The consequence is that the mandate of the IMF has to be exogenously assumed while, in a complete theory, this would be derived from the solution of the mechanism design, possibly taking into account what are his own incentives.

Response: Section III is not meant to endogenize the existence of a coinsurance arrangement as an optimal mechanism. This would be an interesting topic for further research.

6. The main conclusion of Section III is that “an ex ante loan contract is more likely to create the right incentives than an ex post loan contract”. Its significance, which is not sufficiently clarified to the reader, is a standard result in microeconomic theory, according to which information destroys insurance or, in other terms, contracts can be signed only ex ante (no insurance company is willing to insure against a casualty if such casualty has already occurred; this is the so called Hirshleifer effect).

Response: We agree that the main conclusion of Section III is based on the general intuition about ex-ante and ex-post contracts. One innovation in this paper is that we compare three different timings of decision making with real-world implications.

7. In any case, as emphasized in Section 3.F, the solution found may not be renegotiation proof. Although I share the view that the limits brought by ex post renegotiation are likely to constitute an important issue in this framework, also in connection with the limited enforcement that can be implemented with sovereign debtors, the paper does not provide any analysis and insight on these aspects. The unique hint suggested by the authors is that “In a setting where there is repeated lending, it may be in the IMF’s interest to precommit to a contract such as B^* , and build a reputation for enforcing the contract. Over time, this could lead to the emergence of an international norm under which the IMF offers and enforces a standard contract. Renegotiation would be allowed only under exceptional circumstances, for example, when it is perceived that the country in crisis poses a systemic threat to the world economy.” I agree that this would be an interesting result to obtain, but the paper does not provide any finding along this line.

Response: The paper did not intend to extend its analysis into a fully dynamic model. This would be an interesting area for future research considering the recent developments in dynamic contracts.

Although the authors are looking at an interesting problem and have developed a potentially useful theoretical framework, they have not yet reached any interesting conclusion.

Response: Overall, we believe that this paper provides new analytical framework for the IMF with altruism and moral hazard explicitly considered. We will revise the paper to highlight the main results and clearly state the limitations of the current results.

