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Executive Board Attendance

S. Fischer, Acting Chairman

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Also Present
African Department: M. Nowak,Y. Sun. Asia and Pacific Department: C.V.A. Collyns, C. Thimann. European I Department: G.R. Kincaid, C.M. Watson. European II Department: F. Scacciavillani. Fiscal Affairs Department: P.S. Heller, Deputy Director; D.F. Gray. Legal Department: R.C. Baban. Policy Development and Review Department: J.T. Boorman, Director; T. Leddy, Deputy Director; R.B. Kahn, P.N. Njoroge, R.H. Nord, S.M. Schadler. Research Department: M. Mussa, Economic Counsellor and Director; F. Larsen, Deputy Director; P.B. Clark, P.R. De Masi, H. Faruqee, G. Hacche, P. Isard, T. Krueger, G.M. Meredith. Secretary's Department: P. Gotur. Treasurer's Department: J.C. Corr, H. Hirschhofer. Western Hemisphere Department: M.E. Bonangelino, Deputy Director; B.C. Stuart, Deputy Director; S.V. Dunaway. Office of the Managing Director: M. Russo, Special Advisor; M. Cross, Personal Assistant; B. Christensen, J.A. Clement, O. Evans. Office in Geneva: G.B. Taplin, Assistant Director. Advisors to Executive Directors: W.F. Abdelati, P.A. Akatu, T. Brizuela, S.S. Farid, P.M. Fremann, R. Kannan, A. Levy, M.F. Melhem, O. Sein. Assistants to Executive Directors: A.S. Alosaimi, D.A.A. Daco, C.K. Duenwald, M.H. Elhage, D. Fujii, S. Fukushima, J.K. Honeyfield, H. Javaheri, M. Kell, A. Lushin, S.D. Melese-d'Hospital, W. Merz, I. Moon, M. Nemli, A.R. Palmason, T. Presečan, Zubir bin Abdullah.

1. A METHODOLOGY FOR EXCHANGE RATE ASSESSMENTS AND ITS APPLICATION IN FUND SURVEILLANCE OVER MAJOR INDUSTRIAL COUNTRIES

The Executive Directors considered a staff paper on a methodology for exchange rate assessments and its application in Fund surveillance over major industrial countries (SM/97/252, 10/6/97).

Mr. Wijnholds and Mr. Levy submitted the following statement:

First we would like to thank staff for the clear and interesting paper on the methodology for exchange rate assessment. With respect to the five issues for discussion we have the following comments.

We agree that the Fund, as the central institution of the international monetary system, should pay due attention to one of the major variables of this system, the exchange rates. The comparative levels of exchange rates function as one of the major indicators of our 'market led system' for the sustainability of countries' domestic and international economic position. An identified misalignment poses considerable risks for the stability of this system and provides indispensable indications about the corrective policy measures that should be taken and implemented for the reduction of internal and external imbalances. Therefore we support staff to strengthen the analysis of exchange market developments and to refine its methodology.

As the identification of possible misalignments serves the Fund's mandate to protect the stability of the international monetary system, we see some reason to concentrate the analysis on the major currencies of this system. However, recent currency turmoil in South East Asia and preceding crises in Latin America that were triggered by a perceived overvaluation of currencies, have, however, demonstrated the necessity of a continuous assessment of not only exchange rates but also of exchange rate arrangements and in particular those of developing countries. Therefore, the Fund's methodology could also be applied to such cases.

On the more theoretical level, we generally accept the current account-investment-savings model as the appropriate means for analyzing significant deviations from the medium-run equilibrium levels of exchange rates, especially since it reflects the traditional macroeconomic balance approach of the Fund. However, we have some questions on the model and its applications: 1. Does the savings-investment balance equation ignore the impact of differences in interest rates of different countries and is this the reason why the interest rate does not appear in the reduced form equation? What is the significance of this assumption, if at all? 2. The model does not seem to reveal much on the sustainability of current account deficits. For example, suppose that the savings-investment norm of Chart 2 is very negative, implying that the equilibrium real exchange rate is very high (appreciated) , and that the current prevailing exchange rate is not far from this rate. Does this imply that the situation is under control or could there still be a risk of a crisis due to the inability to finance a high deficit, (i.e. the savings-investment norm must change at some time in the future)? This issue is especially relevant to the possible application of the model to developing countries.

We were a bit more confused regarding the empirical findings of the model and their implications for policy. Staff state that "the CGER process is rather like cooking: the proof of the pudding is in the eating" and then bring several anecdotal examples from the past 12 years that while being quite impressive do raise several problems: 1. From the examples it seems that the "proof of the pudding" is that exchange rates eventually changed in the direction projected by the model. Is this the best way to assess the model? If so, does the model boil down to a model of (long run) forecasting? Could the model have implications for policy even if it has a poor forecasting record? This question is related to the issue of sustainability which was raised above: if there exists a disequilibrium but it is sustainable, then it may take the exchange rate a long time to converge to its equilibrium rate and an empirical test will probably reveal a poor forecasting ability. Does this imply that the model has no policy merits or could a policy change that affects the exchange rate still be beneficial? 2. What additional insight does the model reveal that cannot be captured by more traditional fundamental analysis and more simplistic models? 3. Rather than bringing several albeit important examples, could staff conduct a more rigorous empirical analysis of the model? 4. If we look at exchange rates as assets, their value should reflect expectations about future fundamentals which may not be reflected in current and past data. For example, suppose a country is in the process of transition from its traditional industries to say, new high tech industries, has a very high current account deficit and its real exchange rate has appreciated substantially. The exchange rate could very well be not only in equilibrium but also "correctly" priced, as the market expects the new industries to generate high future export revenues, just as the price of a stock could be correctly priced in spite of it having an excessively high price/earnings ratio which does not reflect expected future earnings. How will the model deal with such a case? 5. The last example, while being a bit extreme, reveals a more normative issue: has the Fund found a model which is superior to what the market knows and therefore has the duty to guide the market?

Some of our examples reveal that it would be dangerous to base policy advise on economic modeling exclusively. The Fund's methodology for the assessment of exchange rates should be seen as one of the sources of information for the surveillance of members, that may support a broader the staff analysis. Stage four of the assessment process (judgmental assessment) should certainly take into account special circumstances on a case by case basis.

We believe that the Fund has found an appropriate balance between internal analysis and public statements regarding major-currency exchange rates. Therefore we see no reason to change our position toward press information notices on Article IV conclusions. However, judgments on the exchange rate and exchange rate policies should be expressed with caution as they might generate excessive market reactions. Instead, the Fund should concentrate on the policy measures that will restore an equilibrium, such as a change in the interest rate and a strengthening of the composition of domestic savings.

Mr. Zamani and Mr. Zubir submitted the following statement:

The staff paper on this subject do provide a useful insight as to how the Fund goes about in carrying out its surveillance of exchange rates of the major industrial countries. However, I do have a number of thoughts and concerns after reading this paper, and I will like to raise them according to the order of the issues identified by staff for discussion as listed on page 47 of the paper.

At this stage of the Fund's existence, there should no longer be any doubt that the Fund should indeed continue to strengthen its analysis of exchange market developments as part of its mandate for the surveillance of the global economy. The question that remains is how this mandate can be done effectively and efficiently. The task is indeed made more difficult by the nature of exchange rates themselves. As recent events have shown, exchange rates are no longer influenced by a country's economic fundamentals alone, but also by factors which are not easy to define and quantify. For this reason, I can agree that it is indeed becoming difficult to be very precise in identifying "equilibrium values" for any exchange rate, and that, for this reason, it is important for the Fund to identify circumstances in which any exchange rate can become substantially inconsistent with its medium-run fundamentals.

I can agree that the currencies of the major industrial countries are of systemic importance. However, this is not and should not be the justifying reason for the Fund to focus its exchange rate surveillance and resources largely on these countries. There are two inter-related reasons for my stand. First, there are already in existence numerous academic, monetary and multilateral bodies focusing their attention on the same issues for these countries. It may be more efficient use of resources for the Fund to devise means to regularly consult and incorporate their views, rather then to start from scratch and re-invent the wheel. In-house research at the Fund for these major countries should then be supplementary, rather then basic. It must be borne in mind that, earlier this year, staff themselves had admitted that in view of the increasing workload, there is a pressing need to prioritize the Fund's limited resources. Second, given that these major industrial countries already have tremendous private and public sector resources devoted to research in every aspect of their economy, including their exchange rates, it would be more prudent for the Fund to allocate a greater share of its surveillance and research resources to the benefit of the greater number of its members who do not have and cannot afford such facilities. Taken in this context, the staff should adapt the CGER framework so that it can be usefully applied to a broader set of Fund members. In this respect, staff clarifications would be welcome as to (a) exactly which countries is the CGER presently applied to; and (b) the reasons as to why this CGER framework cannot be applied to countries who have no access to international financial markets.

The staff should be wary about succumbing to the academic seduction of building esoteric research models with no actual real life applications. It must always be borne in mind that the Fund is a front-line multilateral institution in the maintenance of international monetary stability. Policy-makers rightly expect the Fund to provide them with realistic advice and workable solutions to the difficulties that they confront. While medium-run equilibrium may be of some importance, it is equally if not more important for policy-makers to address their immediate situation. The staff may want to consider a more active working relationship with renown monetary research institutions and think-tanks rather then do everything in-house. Their main concern should be translating existing research into realistic policy advice.

I can definitely agree that appropriate policy responses to crisis situations should be addressed on a case-by-case basis, as no two situations are exactly similar, even if they occur within the same region, or the countries involved are at roughly the same stage of economic development. The challenge is for the Fund to inform and educate fund managers on this reality. Perhaps the Fund might want to consider opening its courses and seminars at the IMF Institute to market participants, on the condition they themselves pay for the full costs of the training received.

I would like to highlight the real underlying issue here: when and how should the Fund communicate its concern about certain exchange rate movements or the unsustainability of an exchange rate arrangement without itself sparking off severe market over-reaction. The answer is certainly not easy, as the Fund is still grappling with this issue despite being in existence for over half a century. A possible solution might be in communicating the concerns of the Fund staff and Executive Board to a closed-door forum of high level monetary officials from an affected region. The main idea is to allow peer pressure to persuade the economy (ies) concerned to undertake the necessary corrective measures. I believe this has already been done to a certain extant with the G-7, and has already been advocated to the East Asian region.

Finally, I would like to express my disappointment on reading footnote 5 on page 6 of the staff paper, that the much awaited work on various immediate exchange rate issues for developing countries will likely be completed later rather then sooner. I am given to understand that calls for these papers have been made since early 1995, soon after the start of the Mexican crisis. I would like to urge staff and management to give these issues greater priority in the forthcoming work program.

Mr. Ono made the following statement:

To begin I would like to stress that the issue of exchange rate misalignment is one of the most important issues in today's world of international finance, not only for major industrial countries, but also for developing and emerging economies. Therefore, we welcome the Fund's increasing emphasis on research in this area and find the staff's paper most interesting. Having said that, regarding the methodology introduced in the paper as well as the examples of its application in the context of Fund surveillance, I would like to make some reservations that the staff might take into account in its future work. More specifically, I would like to discuss the following four issues: the appropriateness of the level of exchange rates; macroeconomic policy as a tool to correct misalignment; the implication of the public announcement by the Fund; and the application of the CGER approach to developing economies' currencies.

First, the policy implication of deviation from the equilibrium exchange rate derived from the methodology in the paper is not so clear to me. The equilibrium rate is basically a normative rate at which both internal and external balances are achieved simultaneously assuming that economies are at their potential growth rates. It is my understanding that the equilibrium rate does not necessarily assure us our major policy goals, such as noninflationary sustainable growth. In other words, we can accomplish our important policy goals even under the deviation of an actual exchange rate from the CGER equilibrium rate.

To my mind, what is most important for the authorities to remember is not the extent of deviation from the CGER equilibrium rate, but how they accomplish their policy goals, such as sustainable growth or price stability, and what they can do if they are not sufficiently met. In that sense, my argument might be categorized in the third view on evaluating exchange rates summarized in Box 1 of the paper. For instance, in a case where monetary tightening and the resulting exchange rate appreciation are appropriate in an overheating economy, the extent of deviation from the CGER equilibrium rate cannot be so crucial in the decision making process. In practice, even in the CGER approach, although much emphasis is put on the measurement of the deviation from the medium-term equilibrium, the deviation itself does not appear to have crucial meaning in the final step of judgmental assessment where cyclical and related monetary and financial conditions are primary considerations.

There is another doubt on the proposed CGER methodology. The staff paper states that, because of difficulties to precisely identify "equilibrium values," the staff work has focused on identifying the inconsistency of exchange rates from medium-term fundamentals instead of searching for specific target rates. I find such an argument not fully convincing because, as far as the inconsistency from fundamentals is measured by the deviation from the target value, it cannot be immune to similar technical difficulties.

Second, I wonder whether we should use macroeconomic policy as a tool to correct misalignment. Even if the equilibrium exchange rate derived from the CGER methodology has certain meaning as a reference point despite the problems I already mentioned, I do not think it is appropriate to allocate monetary or fiscal policy to correct the identified misalignment. The precise effect of monetary and fiscal policy on exchange rates is not identifiable in advance. Under such constraints, addressing macroeconomic policies primarily aimed at specific rates could undermine more important policy goals such as price stability. Macroeconomic policy, therefore, should have price stability and sustainable growth as its primary goals, while taking into account exchange rates as an important input to policy consideration. From such a perspective, in the case of the constellation of the U.S. dollar, yen, and deutsche mark exchange rates in the spring of 1995, it seems it was inappropriate for the Fund to call for coordinated interest rate actions by the G-3 in order to correct misalignment.

Third, on the issue of the implication of a public announcement of the Fund's exchange rate assessment, I believe that its use should be limited. One reason being that, as I have explained, we had better be careful when using the CGER methodology for identifying misalignment. In addition, assuming the Fund's assessment is correct, the Fund's call for policy actions by the authorities through such an announcement could not be free from the risk of undermining the stability of exchange rates as well as the economies of concerned countries by inviting overreactions or speculation by markets. More importantly, given the Fund's influential status in the world of international finance, the public announcement of its assessment of exchange rate levels could deny the basic principle of the current flexible exchange rate regime which is "let the markets decide." In that sense, even when drafting the PIN for the Article IV consultation, due consideration should be given when trying to make an assessment of exchange rate levels. Application of CGER Approach to Developing Countries' Currencies

Finally, I share the staff's view that the application of the CGER approach to developing economies' currencies should be limited, given that the model used in this approach assumes access to international capital markets, which is not always the case. Needless to say, assessing misalignment for developing economies' currencies is very important, but could be done by means of a more simple early warning system that monitors the deviation of real exchange rate movement from the trend. I also support the direction of ongoing work by the staff regarding the exchange rates of developing and emerging economies, including the analysis of possible problems in fixed exchange rate regimes and the related issue of exit strategy. Before concluding, I would like to stress that a public announcement of the Fund's assessment of exchange rate levels could cause more serious distortion in the developing economies whose foreign exchange rate markets are often less liquid and thin.

Extending his remarks, Mr. Ono emphasized that a simple model like the one used by the staff had some limits in identifying exchange rate misalignment. In a number of cases it had been difficult to determine whether or not exchange rate overshooting had occurred. In other cases it was clear that exchange rate overshooting had occurred, although the economic model did not provide adequate explanation for it.

Mr. O'Donnell and Mr. Kell submitted the following statement:

There is no question that the oversight of exchange rate policies remains at the core of the Fund's surveillance mandate. There should equally be no question that the Fund's surveillance of exchange rates must be underpinned by a rigorous, consistent and transparent framework. I am grateful for staff for their work, which clearly takes us forward in the assessment of "equilibrium" exchange rates. And I very much welcome the opportunity for this discussion—it is something for which this chair has called for a while.

There is no global shortage of analysis of exchange rates. So we need to be clear about the Fund's comparative advantage in this field. I would highlight two areas where the Fund has a comparative (and possibly absolute) advantage: the first is its near-universal multilateral perspective; the second is the blend of technical expertise and breadth of practical experience of its staff in the analysis of exchange rates. I think the approach outlined in the staff paper plays to both those strengths.

Before discussing the CGER methodology itself, one preliminary point prompted by Box 1 of the staff paper. I, for one, do not subscribe to the view that exchange rates are always appropriate given the current policy environment. Nevertheless, it is a useful discipline for the burden of proof to be on explaining why the market might be "wrong." In this context, it might be helpful to have a short paper rounding up the recent research which tries to explain, in terms of the micro structures of foreign exchange markets, why exchange rates can and do deviate from economic fundamentals. (There might also be some implications for policy).

I basically agree with the CGER approach to assessing equilibrium real exchange rates, and I think the staff paper does a good job of explaining the approach. The macroeconomic balance approach, of which the CGER methodology is a variant, is clearly preferable to the main alternative of PPP. I find it intuitively plausible that the equilibrium real exchange rate can be explained primarily in terms of real economy "fundamentals," and that the equilibrium real exchange rate can change over time.

Against that background, it is not really surprising that there is little or no role for monetary factors in the CGER approach. The assumption of the neutrality of monetary variables over the medium to long run can of course be challenged, but is reasonable to my mind. Of course, as the paper makes clear, we do have to take account of cyclical factors, monetary policy, financial market developments and other "short term" considerations in thinking about the dynamics of exchange rates (real and nominal). But the CGER approach is essentially one of comparative statics, on which dynamics have to be "superimposed."

I think there are very good reasons for taking this approach, in terms of keeping the exercise transparent and tractable. But I was intrigued by the reference in footnote 50 on page 32 to an attempt to integrate short-run dynamics (via MULTIMOD) into the CGER framework. Since we cannot avoid undertaking this kind of exercise—either in our heads or on the back of an envelope—when coming to an overall view on whether exchange rates are misaligned or not, I can see merit in formalizing this analysis, to make explicit our assumptions. I appreciate that integrating MULTIMOD and CGER, on a multilateral basis, would be a formidable and expensive operation; but I would be interested to hear the staff's views on whether they think this ought to be considered for future work.

I have a number of other comments on specific aspects of the CGER approach. First, in estimating the underlying current account position, I agree that it makes sense to use two sources, namely desk economists and the RES trade model. Each has its advantages and drawbacks, as explained in the paper. But I wondered whether the trade model estimates could be improved by relaxing some of the cross-country restrictions, to allow for country-specific elasticities and dynamics. I appreciate that this would complicate, and possibly compromise, the multilateral consistency of the model's estimates; but is this an avenue worth pursuing?

Second, in the calculation of the Saving-Investment Norms, I was surprised that the proxy used for demographic structure was not explicitly forward looking. However, staff tell me that forward-looking demographic variables were found to be insignificant. But there could be a problem with the preferred variable to proxy the current demographic structure (i.e., the ratio of young and old to those of working age). You could imagine two countries having the same ratio, but one with lots of young people and one with lots of old people and therefore with very different implications for the "normal" S-I balance. Do staff consider this possibility to be empirically important?

Third, I was a little confused by the use of "actual" structural budget positions in the calculation of S-I "norms." This would be inappropriate if a country's fiscal position was unsustainable. Staff do acknowledge this possibility, and I take their point that the use of actual budget positions is not meant to imply the budget position is "desirable." But a more systematic and transparent treatment of unsustainable fiscal positions may become more important if the CGER analysis was extended to a wider group of countries.

Fourth, I would also have welcomed more discussion of the uncertainty surrounding the estimates of "equilibrium" exchange rates. This is a key issue. I can see that the combination of different sources of uncertainty (eg, concerning trade elasticities and S-I balances) makes it very difficult to derive confidence intervals analytically; but is there scope for using simulations to get more of a handle on confidence intervals? I would be grateful for staff's views.

I would definitely agree with the approach being applied to a wider set of Fund members. Indeed, while I do think that the Fund can and does add value to the (extensive) debate on G-7 exchange rates, the Fund's value-added is likely to be greater in the analysis of other countries' exchange rates. Data problems and deficiencies might complicate the task, but should not be a reason for doing the analysis as best we can.

I would certainly support the publication of this paper, perhaps with some supporting background papers. The CGER represents an important advance in the Fund's thinking on exchange rates, and we should expose this to outside scrutiny.

Concerning the numbers generated by the approach, we need to distinguish what information is made available to the Board, what is included in Article IV and program papers, and what is made public.

I believe that Board discussions of exchange rate issues would benefit from having more information on CGER assessments of equilibrium exchange rates, including some of the underlying numbers, along the lines of Tables 2 and 3 in the paper. Similarly, I believe that more Article IV papers should include a CGER assessment of exchange rate developments, perhaps referring to ranges rather than point estimates, and accompanied by the usual disclaimers about the limitations of the exercise.

How much of this kind of analysis is made public is a more sensitive and controversial issue. I can certainly see the potential risks in the Fund making a pronouncement that an exchange rate is significantly misaligned, particularly when markets are turbulent. There is of course the danger of self-fulfilling prophesy. But on the other hand, I believe, as a general rule, that the more information markets have, the better they will work. If Fund estimates of equilibrium exchange rates were made available on a regular basis—perhaps in the World Economic Outlook—there would be less risk of the markets being surprised by the information at a difficult time. This objective may be some way off, but is worth considering.

Mr. Disanayaka, speaking on behalf of Mr. Sivaraman, made the following statement:

The oversight over exchange rate policies of members is a key concern of this institution in its role to foster an orderly development in the international monetary system. Hence, there cannot be two opinions regarding the need for a continuous update on various instruments available with us to strengthen this particular function. At the same time, we equally recognize the difficulties associated with estimating the exact value of equilibrium exchange rates or even determining the misalignment amongst currencies excepting probably in the case of the industrialized countries where macroeconomic parameters like interest rates, growth rates do not differ vastly and there is also a free convertibility.

I support the present policy of the Fund to avoid public pronouncement on exchange rates as it is bound to have repercussions in the market particularly because it may be treated as an oracular pronouncement when it comes from the Fund. Our responsibility is to only advise member countries to put in place strong macroeconomic policies to avoid undue volatility. I support CGER exercises especially to look for cases where exchange rates are way out of what can be considered as normal rate so that authorities can be adequately cautioned.

It is said that the daily turnover in the currency market is a multiple of the transaction in goods and services which clearly indicates the significant speculative activity in this area. Although it is our belief that exchange rates should adequately represent economic fundamentals, very often, they will be far removed from equilibrium norms due to speculative trading in currencies. The recent South East Asian currency crisis is a clear example on hand. In this paper, I could not find any reference to this big dichotomy in the absolute volume of currency trading and trade in goods and services which the former is supposed to subserve. How does this dichotomy affect exchange rate is not clear. Staff may please clarify.

With reference to the estimation of each country's underlying current account position, the research department standard trade model is a simple structure and employs common conclusions, specification and parameter values across countries. The limitations of this model, as explained in paragraph 29, clearly indicate the reasons for the divergence between the actuals and the estimates at arrived using this model. As this exercise is based on assumptions which are removed from actual situation, no doubt the results do not correspond with actuals. I think any exercise to determine misalignment has to start from the point of an equilibrium rate of exchange which again is difficult to estimate. Probably one can estimate it only by intuitive reasoning based on judgment. But then, the problem is that of the base date of estimation. In the case of economies which are undergoing changes, and are growing fast, the structure of the economy will change rapidly; so will its price structure. It will be difficult to take account of movements in prices over time to construct a composite index and to estimate the real effective exchange rate for checking misalignment. I can appreciate the difficulties of economists and econometricians as ultimately it may be the case of chasing the will o' the wisp. You are there you can see it, but you cannot grasp and hold it.

With reference to cyclical and related monetary and financial conditions to explain exchange rate misalignments, the staff has suggested in paragraph 49 that an overvaluation of country-one's currency (vis-à-vis currency two) by ten or fifteen percent relative to estimates of its medium run equilibrium position would probably be interpreted as a normal and desirable reflection of cyclical conditions, rather than as an indication of exchange rate misalignment. But on the same note, the under evaluation of currency by 10 or 15 percent would raise serious concerns about a possible exchange rate misalignment. While the rationale for this asymmetry is somewhat understandable, how the staff came to this quantification is not clear and staff comments are welcome.

Another issue that I want to raise here is how much the circulation of currencies in the world market influence exchange rate; for example, a large proportion of US currency issued is held by outsiders. The Indian authorities believe that their currency is not tradable as there is no full convertibility but the reality is that it is freely exchangeable in many markets of the world. The exchange rate is different than the accepted market rate. Is the market exchange rate influenced by these factors?

I am not able to comprehend what has been stated in para 6 "large interest rate differentials may indicate a need for policy adjustment—for example, when they reflect market concerns about fiscal imbalances—but such situations should not be regarded as serious misalignments when countries' macroeconomic policies are fundamentally sound."

I wonder whether a situation of fiscal imbalance can co-exist with macroeconomic policies which are fundamentally sound. One would expect not!

While the complex CGER and RES exercises could be useful tools for academicians to play with, in a situation where exchange rates are fluctuating from hour to hour and day to day, driven by forces unleashed by currency traders who rely more on their intuition, rather than econometrics, how far they are going to help in policy formulation is a big question. I think for this purpose we have to look at the trend in the movement of the exchange rate of the country's currency via-à-vis its trading partners if it is in a free float. It is only the trend movement when interpreted in the light of economic policies and other macroeconomic parameters can throw light on misalignment with other currencies. Where the exchange rates are managed, it has to be examined in the light of authorities decisions over a period in regard to the exchange rate of the currency.

Overall, in my view, I see no single tool which enable us to come to a conclusion about the exchange rate of a currency. All these factors have to be looked at together to arrive at a judgment. Experts in this area on such an examination would definitely be able to say the extent of misalignment and corrections required. Like in other areas, one has to take some chance here.

In regard to the specific issues for discussion, I agree that the Fund should seek continuously to strengthen its analysis of exchange market developments. I have already commented earlier about my views on the ways of determining exchange rates. Our efforts would be only to find out on the basis of the movement of exchange rate of a currency over a period of time vis-à-vis its trading partners the extent of its misalignment so that macroeconomic policies can be adjusted to correct fluctuations.

As regards the complicated CGER exercises, which has focused on the exchange rates of major industrial countries, I have my doubts whether this will have any utility in regard to other developing countries. In the case of the developed countries, there is a convergence of major economic policies and a serious attempt is made to correct deviations. There is hardly any such exercise carried out in regard to other countries even though some of them may have full convertibility and others free float but not full convertibility. The CGER again works with strong assumptions which may be far removed from reality. I would suggest that in order to test the usefulness of this tool, such exercise may be conducted in respect of a few countries which have become relatively open rather than extending it to a whole lot of countries as it is bound to take a lot of staff time.

One problem that has been raised in paragraph 3 of the issues is the influence of exchange rate on current account. To what extent current account will influence exchange rate is also very important. Can we not say that widening current account deficits in the South East Asian countries have had influence on the fall in value of their currencies witnessed recently.

Deviations of prevailing exchange rate from their medium run equilibrium levels (provided we can determine accurately what is the medium run equilibrium level) could be temporary and could also indicate a serious misalignment. This again will depend on a whole lot of other factors which will have to take into account before a conclusion is reached.

In conclusion, I would like to repeat that looking for an equilibrium rate of exchange is indeed a case of chasing the will o' the wisp. However, for purposes of determining the misalignment of a country's currency vis-à-vis its trading partners it would be a helpful exercise apart from other judgmental factors. The equilibrium rate even though may not be determined precisely could be estimated on the basis of past trends in the movements of exchange rates in which a lot of judgmental element would be involved. I believe experts who have been handling this for a long period of time would be in a position to apply their intuitive reasoning apart from the tools of econometric analysis to arrive at this rate.

Mr. Kiekens and Mr. Jonáš submitted the following statement:

Analyzing the methods for assessing exchange rates among major industrial countries generates many useful conclusions. One conclusion concerns the difficulty of obtaining solid policy guidance from judgments about misalignments of real exchange rates. For us, the most important conclusion is that we cannot judge the proper level of real exchange rates with sufficient confidence to justify public statements about the inappropriateness of existing exchange rates. There may, however, be exceptional cases where the Fund could indicate that an exchange rate movement in a particular direction would better reflect the fundamentals.

Although the current state of the art imposes limits on our understanding of exchange rate levels and movements, it is still essential for the Fund to maintain its surveillance over members' exchange rates. It is important for staff reports to candidly reflect discussions about countries exchange rate policies, and equally necessary for the Board to form timely opinions about discussions of exchange rate issues between the staff, the Management, and the authorities. In this connection, we are encouraged by the staff's observation (p. 45) that staff reports "on occasion" contain more candid and pointed recommendations. Given the Board's long-standing emphasis on open discussion of exchange rate issues, we hope that more candid and pointed recommendations become a normal, rather than an occasional, feature of staff reports.

Calling for more candid discussions of exchange rate issues begs the question of what, specifically, should be the goal of the Fund's surveillance over members' exchange rates. Given the limitations of the available models and the present state of knowledge about exchange rates, it is easier to say what the goals should not be. We must accept that it is inherently difficult to identify "equilibrium values" for exchange rates.

We are concerned about how extending our judgments from the academic realm into the arena of publicly debated policies could actually affect exchange rates, in case the financial markets assume that the Fund's now public views about exchange rates imply policy decisions that affect both actual and equilibrium exchange rates. Under such circumstances, the consequences of an erroneous judgment that an actual exchange rate is out of line with fundamentals could be costly for both the country concerned and its trading partners, and undermine the Fund's credibility and its ability to continue exchange rate surveillance. We therefore agree that the staff should continue prudently to leave open the question of actions to be taken when exchange rates appear to deviate substantially from their medium-term equilibrium values.

The staff's account of its experience with the methodology devised by the Coordinating Group on Exchange Rate Issues (CGER) for assessing the most obvious recent episodes of exchange rate misalignment illustrates that this prudent approach is justified. In the spring of 1995, the staff's calculations served as one input to the Surveillance Committee's judgment that recent movements in G-3 exchange rates had gone farther than was justified by the fundamentals. This judgment subsequently resulted in a confidential recommendation to the G-3 countries to undertake concerted interest rate action. However, it was recognized ex post that because in the following months, the U.S. economy was not as strong as had been assumed, it would have been inappropriate to raise interest rates as suggested by this particular exchange rate assessment. And indeed, later on the federal fund rate moved in the opposite direction from what had been suggested by the use of the CGER methodology. In view of the weakening of the U.S. economy, this latter move turned out to be justified. We think that this episode illustrates well the perils of making strong policy recommendations based on judgments about the appropriateness of actual exchange rates based on the CGER methodology.

This is far from saying that the CGER methodology is useless. We think that the results of the present methodology provides a useful input into policy discussions in the form of the Fund's views on exchange rates. Since exchange rate surveillance is one of its responsibilities, the Fund cannot avoid making judgments about actual exchange rates and recommendations on exchange rate policies. But we remain convinced that in most cases, only the authorities should receive the Fund's judgments and recommendations. This is the best the Fund can do. Improving the analytical quality of its work on exchange rates is the way to increase the weight the Fund's recommendations carry with the recipients.

For this reason we encourage the staff to continue its analytical work to quantify the influence of exchange rates on current accounts and to calculate medium-term levels for savings-investment balances. Continued research may help reduce the limitations of the present CGER framework. These limitations explain why the results produced by the model illustrated in Chart 2 are not always aligned either with reality or with intuition. We would like to make some more detailed observations on this model and invite the staff to comment on them.

In paragraph 43, the staff explains how changes in economic fundamentals shift the UCUR or SI lines shown in Chart 2, and how the real effective exchange rate consistent with medium-term fundamentals is altered by these shifts. This analysis produces two results that we cannot entirely square with intuition: namely, that the higher the relative real per capita income, or the larger the relative structural fiscal surplus, the lower will be the medium-term level of the real effective exchange rate. We would normally expect that an increase in a country's relative real per capita income would mostly result from higher relative productivity growth, and we would expect this to lead to a higher real effective exchange rate, instead of the lower rate predicted by the model. As to the increase in the relative structural fiscal surplus, it could, in theory, have the effect on the real effective exchange rate predicted by Chart 2 through its reduction of long-term interest rates. But in practice, this theoretical result is not supported by the experience of industrial countries. The May 1996 World Economic Outlook has analyzed episodes of successful fiscal consolidation in industrial countries. These episodes can be viewed as a proxy for increases in relative structural fiscal surpluses, whose theoretical impact on the real effective exchange rate is discussed by the staff. Contrary to the predictions of the model in Chart 2, the World Economic Outlook concludes (p. 60) that "between the year before the fiscal consolidation and the end of two-year contraction, the real exchange rate appreciated slightly in the successful cases, and depreciated slightly in the unsuccessful cases."

Nor do the relationships between changes in the normal savings/investment balance for the major industrial countries (Chart 3) and the changes in nominal and real effective exchange rates (Chart 1) always follow theoretical predictions of the model. For example, in Japan, the normal savings/investment balance continuously strengthened from 1982 to 1992 (reflected as a shift to the right of the S-I line in Chart 2), but the real effective exchange rate continued to appreciate during this period instead of weakening as it should have according to the model. For the United States, the gradual weakening of the normal savings/investment balance up until the mid-1990s should have led to an appreciation of the real effective exchange rate according to the model, but the actual outcome was a weakening of the real effective exchange rate.

We understand that the model refers to equilibrium and not actual exchange rates, but can this explain the contradiction between the model's predictions and actual experience? Perhaps an explanation can be found in the fact that changes in the variables that shift the S-I line to the right (such as higher real relative per capita income) also have the effect of shifting the UCUR line upward and to the right (indicating, for example, that higher relative productivity means that the same UCUR can now be sustained at a higher real exchange rate), and that these two shifts together produce intuitively "correct" real exchange rate effects.

On the issue of which countries to include in the exchange rate assessment, we see some merit in expanding the list beyond the G-3 countries to include systemically important countries. The trend toward more flexible exchange rates is worldwide. We recognize that this trend does not necessarily reflect free choice, since in the less developed countries, specific factors that have nothing at all to do with domestic conditions may influence exchange rate policies. This might make this kind of assessment even more difficult than for the G-3 countries.

Finally, let us repeat what we said three years ago, namely that according to the Articles, the Fund should exercise firm surveillance over exchange rate policies. Recent experience has shown that there are still many problems with countries' exchange rate policies, and we continue to think that the Fund should pay more attention to the consistency of countries' exchange rate policies with the overall macroeconomic framework, than to the consistency of actual exchange rates with theoretical equilibrium exchange rates.

Mr. Vernikov and Mr. Lushin submitted the following statement:

The paper presented provides an interesting and informative description of the staff's approach to addressing the problem of exchange rate misalignments. Since the oversight over the exchange rate policies of member countries is an issue of top priority for the Fund, it is obvious that Executive Directors must be aware of the methodology being used for these purposes. We, therefore, welcome the staff's intention to share its views on this important issue with the Board. Our comments on the topics suggested for discussion are as follows.

To the extent that one believes that markets are not always perfect in identifying "equilibrium" exchange rates, an attempt to measure possible exchange rate misalignments is a step in the right direction, since otherwise the concept of the exchange rate equilibrium would be purely speculative. At the same time, we agree with the staff that, whatever definition of the equilibrium is utilized, it is hardly possible to arrive at its precise quantitative estimates. In this respect even determining the right sign of an assumed misalignment is a big job, not to mention the possibility to obtain reasonable, although rough estimates of the magnitude of this misalignment.

The macroeconomic balance approach used by the staff to define a medium-run equilibrium of an exchange rate and also to derive a model for quantitative assessments of misalignments seems to be more adequate than a widespread PPP approach. Also the combined RES trade and saving-investment model can produce estimates of equilibrium exchange rates within a theoretically consistent framework. Therefore, we share the staff's view that analytic work to further improve this model is warranted (we presume that this is what has been asked in a rather vague wording of item 3 of the topics list).

The advantage of the RES model is its transparency as well as a multilateral framework, allowing globally consistent assessments of current accounts and exchange rates. In our understanding, this means that the model allows a balancing of world exports and imports, perhaps with a reasonable discrepancy, and also world saving and investment. However, the reverse side of these advantages is a simplified analytic framework of the model which is based on cross-country estimates and hence, employs common equation specification and parameter values across countries. Besides a lack of country-specific detail, the endogenously explained part of a current account balance is actually reduced in the model to a trade balance. Such simplifications, while possibly being tolerable in the case of industrial countries, may appear to be inadequate for emerging market economies.

It is, therefore, difficult to disagree with the staff that, in the framework of the suggested methodology, it was right to focus the analysis mainly on the exchange rates of industrial countries. However, we presume that the "systemic importance" of the major world currencies was not the only reason for concentrating on the aforementioned group of countries—availability and quality of the necessary data as well as meeting some of the model's basic assumptions are of no less significance.

The question raised by the staff, "could the approach usefully be applied to a broader set of Fund members," can be twofold. If it means a deepening of the analysis of exchange rate issues for developing and transition countries in general, then the answer is "yes." If the question refers to the application of the RES model methodology as it is to the developing and transition economies, we would need to hear from the staff how to overcome evident difficulties arising in this case. Specifically, (i) in a large number of these countries trade volumes are weakly or not at all sensitive to real exchange rate fluctuations, since such countries are usually price-takers and have nondiversified export and import structures; (ii) the share of nonfactor services and transfers in overall current account balances are usually larger for the developing countries than for the advanced economies. But as the current account model is actually a streamlined trade model, it does not take into account "any projected changes in net factor income payments or transfers over the medium run" (p.22). (iii) one basic assumption of the CGER methodology, such as access to international capital markets, is not valid for quite a number of developing counties, and the staff emphasizes that "the framework is not applicable to cases in which access to these markets is significantly curtailed" (see p.6); (iv) any regional group of developing or transition countries is substantially less homogeneous than a sample based on industrial economies. In this case the assumption that trade elasticities are identical across countries, as well as coefficients of the S-I model, seems to be extremely restrictive.

Deviations of the estimated medium-run equilibrium exchange rates from their prevailing levels should be considered very cautiously, first of all because statistical confidence bands of these estimates cannot be formally obtained. The staff believes, as one may judge from paragraph 55, that these bands could be within a range of 10 or even 15 percent of the estimated equilibrium exchange rates. This means that deviations of say, 5 or 8 percent are statistically insignificant and any conclusion about possible misalignments on such a basis would be questionable. However, even if deviations are large enough, their meaningful interpretation requires a good deal of informal judgment on a case-by-case basis, and we agree with the staff that appropriate policy responses in such situations need to be addressed in the context of a broader perspective. The episodes of retrospective assessments based on the CGER methodology look impressive, but unfortunately, a perfect model performance on the ex post data does not necessarily guarantee the same quality of estimates in the current circumstances.

Concerning the appropriate balance between internal analysis and public statements about the constellation of exchange rates, we are not in favor of broader publicity. Given the role of this Institution in the international monetary system, any public statements on the misalignment of exchange rates, even being occasionally or accidentally correct, may result in market tensions and overshooting of exchange rate adjustments. This is especially true for the countries whose currencies are not leading in the world financial system.

Mr. Szczuka, speaking on behalf of Mr. Kaeser, made the following statement:

Any exchange rate assessment is based on some idea about the 'right' rate. Making these ideas and the reasons behind them transparent is a prerequisite for fruitful discussions on exchange rate misalignments. We therefore welcome this paper which describes the analytical basis of the staff's exchange rate assessment.

The clearing price in the exchange market does not always correspond to what is considered as a medium-term equilibrium exchange rate. There are basically two possible reasons for such apparent misalignments: either the fundamentals deviate from their medium-term equilibrium levels or the exchange markets are wrong (or both of them). In our view, and despite the vast body of economic literature which shows that exchange markets can indeed move away from underlying fundamentals, any analysis has to start with the presumption that the exchange markets are right, and thus that the deviation of the market rate from the equilibrium is due to the policy mix, the cyclical position of the economy, or some other factors of temporary or more fundamental character. Therefore, the equilibrium exchange rates should not be used as a rule to measure the extent of alleged imperfections in the exchange markets, but principally as a useful tool which helps to detect problems within the macroeconomic setting. In this sense, an assessment of exchange rates has always to be seen in the context of a broader macroeconomic analysis.

Having made these introductory comments, we would like to turn to the issues proposed in the staff paper for consideration by the Board.

In line with the Fund's mandate to oversee the exchange rate policies of its members, the Fund staff has traditionally played an important role in the development of methods to calculate equilibrium exchange rates, and more specifically in the refinement of the macroeconomic balance approach. While the broad objective of such assessments remains the same, i.e., to provide some kind of lighthouse in the darkness surrounding exchange rate discussions, their ambitions have become more humble than in the past. Notably, the staff report carefully avoids to argue that the calculated equilibrium exchange rates are the 'right' exchange rates. Instead, it is argued that these exchange rates should form an integral part of a larger assessment aimed at identifying clearly misaligned currencies. We agree that it is impossible to give a precise estimate of equilibrium values of exchange rates. Therefore, the red warning lights should only be turned on when an exchange rate moves beyond a relatively large confidence band, and after a thorough analysis of all important factors affecting the exchange rate. Nevertheless, we note that the distinction between identifying the right rate and identifying wrong rates is somewhat artificial; or to put it differently: we cannot say a rate is wrong if we have no idea about what the right rate is.

The staff's work has until now focused on the exchange rates of the G-7 countries. This concentration can be partially justified by the systemic importance of these currencies and by the complex methodology applied and the large amount of reliable data needed for the calculation of the equilibrium exchange rates. However, the Fund's mandate is not limited to the assessment the exchange rates of the major industrial countries. Since the Fund's assessments should always be based on solid analytical grounds, calculations of equilibrium exchange rates for other member countries would be desirable if only sufficient amount of timely and reliable data is available. We share the position presented in Mr. Wijnholds's and Mr. Levy's paper that the recent currency turmoil in South East Asia has demonstrated the necessity of a continuous assessment of exchange rates and exchange arrangements in a number of developing countries. We appreciate the systemic importance of the currencies of the G-7 countries but at the same time we are of the opinion that the Fund's surveillance and advice on exchange rate policies can be of great importance for countries with a current the Fund arrangement, and/or for countries where a currency misalignment could trigger some broader regional disturbances.

The approach outlined in the staff paper is highly pragmatic. This brings about some limitations identified by the staff in Chapter IV of the paper. Most importantly, due to the difficulties associated with a complete inter-temporal model, the approach used by the staff is not embedded into a dynamic framework—a limitation which somewhat reduces the practical value of the calculated equilibrium rates.

Nevertheless, we believe that continued work on the current methodology would be worthwhile. Many of the possible refinements are probably too technical to be discussed at a meeting of the Executive Board. We therefore suggest that the staff prepares a more technical paper for publication in the Staff Papers or as a Working Paper in order to receive valuable inputs from specialists outside the Fund. We will come back to this point in issue 5.

In addition to the refinements proposed by the staff, it might be useful if the staff tried to quantify the effects of the factors which are only taken into account in step 4 of the current methodology, i.e., the effect of cyclical conditions, interest rate differentials, and fiscal imbalances on the short-term behavior of the exchange rate. This would allow us to give the judgmental assessment a better analytical basis. Moreover, we believe that the assessment of members' exchange rates should not be limited to levels but should give more weight to the effects of exchange rate movements. Large swings can be highly undesirable, even if the exchange rate keeps within the confidence band of the equilibrium rate. The staff studies in this area would be particularly welcome.

In the paper, the staff highlights the importance of a careful interpretation of calculated equilibrium rates. Such an interpretation is indeed necessary, given the various factors that can lay behind an apparent misalignment, the several judgmental elements entering the calculations, and the analytical limitations and the lack of precision of the estimates. Interpretation is also needed because positive estimates of medium-term equilibrium rates cannot easily be used as normative signpost of 'desirable' exchange rates.

As we already noted above, we fully agree that an assessment of exchange rates has always to be part of a broader macroeconomic analysis and should be done on a case-by-case basis.

The Fund's policy regarding public statements on exchange rates is rather prudent. As noted in the paper, the Fund has until now made only a few public statements on currency misalignments. We believe that more openness in this area would be desirable.

In particular, even if public statements on exchange rates are rare, the rationale for such statements should be made more transparent. We therefore suggest that the staff publishes a paper which explains the methods used for the calculation of equilibrium exchange rates and for the exchange rate assessment in general. Ideally, such a paper would be more detailed and more specific with respect to the practice of the Fund than the recent Occasional Paper on Exchange Rates and Economic Fundamentals (Occasional Paper 115).

The Fund could also be somewhat more open concerning the results of the calculations of equilibrium exchange rates. We agree that it would not be a good idea to regularly publish lists with equilibrium exchange rates or with the percentages by which market rates deviate from the equilibrium rates. This kind of publication could give the wrong impression about the reliability of the estimated values, especially if the media disseminate these estimates without the careful interpretation of the Fund. However, we think that a publication of relatively large ranges or confidence bands for the equilibrium values of the real effective exchange rates would be useful to better explain to the public the basis of the Fund's statements on exchange rates. The publication of such estimates could take place in the context of regular consultations under Article IV, e.g. in the PINs.

To conclude we would like to invite the staff to prepare a paper in a related area, namely the future conversion rates for participants of EMU. In light of the high systemic importance of this project, an independent opinion of the Fund about the appropriate level of the future conversion rates would certainly be useful. We have the impression that the methodology presented by the staff might provide valuable inputs for the decisions planned by the European Union for May 1998. A discussion on the bilateral exchange rates and the conversion rates of EMU participants would also perfectly fit into the Fund's mandate to oversee members' exchange rate policy.

Ms. Lissakers and Mr. Sobel submitted the following statement:

The staff paper underscores the fact that surveillance over members' exchange rate policies remains at the core of the Fund's mandate. For this function to be effectively carried out, there must be frank discussion of exchange rate policies among the Fund's membership, and staff must continuously seek to strengthen its analytical capabilities in this area. The paper enhances our understanding of aspects of the current analytical focus and thinking in the Fund on exchange rate issues for the major industrial countries.

The quest to identify significant deviations of exchange rates from levels consistent with "appropriate" levels of savings and investment balances, to the extent this can be meaningfully done, is very useful. In this regard, the CGER process represents an interesting methodological combination of objective and subjective analysis that contains elements of a systematic framework for reflecting on the consistency of domestic and external imbalances with assessments of exchange rates. Indeed, many authorities and private sector institutions make similar types of calculations.

But as the staff notes, any analysis of exchange rate determination should be approached with extreme caution and humility. Notwithstanding all of the important economic work, our knowledge of exchange markets is still rudimentary and it is hard to glean the information content of a particular exchange rate at any given time.

The limits of our understanding are also mirrored in some of the conceptual issues underlying the CGER framework, its reliance on judgment, and its econometric underpinnings. Many basic concepts in the literature are inherently subjective, do not easily lend themselves to definition, and are thus used without great precision. The concepts of exchange rate "misalignments" and "normal" savings-investment balances are relevant in this regard. Box 1, which we found very useful, highlights differing notions of a "misalignment." The sharp rise in the dollar in the early to mid-1980s is often cited as a classic case of misalignment. Many analysts feel in retrospect that U.S. monetary policies were tight at this time and fiscal policy highly expansive, thus driving U.S. real interest rates to extremely high levels. Accordingly, it was not unsurprising that the dollar's real exchange rate appreciated sharply. It did exactly what theory would tell us it should have done.

In this regard, even if the CGER process yields the conclusion that a currency has deviated substantially from its medium-term equilibrium value—and we would argue that identifying the 1985 and 1995 cases does not represent a high bar—this tells us little about the question of who should adjust and how. Indeed, most of our discussions on the major industrial countries highlight the importance of focusing domestic policies on internal balance, rather than exchange rate objectives. We noted with interest staff's conclusion that with the benefit of hindsight, the recommended increase in U.S. interest rates in the spring of 1995 would not have been helpful.

Another such concept is the "normal" level of the savings-investment balance, which CGER estimates in lieu of "normal" capital flows. The S-I norms are based on domestic determinants, which are hard to calculate and fully understand in and of themselves. But in a world in which global capital markets are playing an increasing role, it is also not easy to understand some of the interactions and causality between capital flows and the current account and between savings and the current account. For the United States, given the role of our capital markets, the current account may in some ways reflects portfolio choices and intermediation around the world. Could the staff comment on the extent to which calculated S-I norms are influenced by averages for this variable in preceding periods and to what extent, in its experience, the past averages have proven an appropriate basis for forward looking assessments of S-I norms?

It also goes without saying that "equilibrium" exchange rates, "sustainability" and "desirability" are also concepts which are just as hard to define.

We would also appreciate the staff's clarification as to the balance that is struck between model-driven results and judgmental assessments in the CGER framework. The staff surely is correct in noting that the host of factors cited on pages 30–31 (cyclical divergences among countries, real interest rates, large fiscal positions and structural changes) will help shape current account dynamics and exchange rate movements. But interest rate differentials in practice are not a good predictor of exchange rates; the response of exchange rates to fiscal adjustment is unclear; and it is hard to gauge how structural changes may be affecting the current account at any given time. Indeed, there was some debate on this latter point in the Board's discussion of Japan's Article IV report.

The staff paper observes that S-I norms are adjusted by the country desks, and that for Japan a different estimation model is used. Could the staff discuss how much judgmental considerations cause the CGER process to yield different conclusions than would result from a strict model-based approach and why a different model is used for Japan? Also, how does staff determine what is an acceptable amount of judgment from country to country? Further, on pages 44–45, staff indicates that CGER's assessments were only one input among many in framing an assessment of exchange rate levels; what weight is given the results of the CGER methodological framework as opposed to other inputs?

The econometric underpinnings of the CGER framework are also enormously complicated and subject to a wide range of uncertainty. Most obviously, the CGER framework depends heavily on calculations of potential growth and full employment. But these cannot be quantified with precision and indeed, the Fund and OECD forecasts of these variables differ markedly at times. Also, estimating trade elasticities is complicated. Different empirical approaches can yield a range of estimates and the relationships underlying these estimates may not be stable. In this regard, our authorities note that including confidence intervals for the estimates used in the analysis would facilitate gauging the usefulness of the CGER approach.

On balance, we would very much agree with staff that the CGER process is a useful, technical exercise which can shed light on economic policies and their external ramifications. We also would tend to agree with the staff that given the state of our knowledge, the best we may be able to do is to identify exchange rates that deviate very substantially from some notion of consistency with medium-term fundamentals. But it is important to recognize the fundamental limitations of the CGER framework and that it cannot be used in a mechanistic or formulaic manner.

In short, paragraph 53 states the CGER process is like cooking and the proof of the pudding is in the eating. But given the numerous calculations, methodological assumptions, definitional complexities, and judgmental elements, it struck us that the CGER framework might be better viewed not in the kitchen, but on the stage of performance art.

The foregoing discussion also raises the question of what role the CGER analysis should play in the Fund's work. Indeed, the paper invites this discussion with such unexplored, yet tantalizing, statements as: "Whether anything should be said, publicly, when such a situation (substantial deviation of exchange rate from medium-run equilibrium values) is identified is also left an open question" and "Do Directors consider that the balance between the internal analysis and public statements about major current exchange rates have been appropriate."

The CGER framework is a useful part of the Fund's surveillance over members' exchange rates and analytical approach. We would urge the Fund to continue developing its exchange rate analyses on major industrial countries and the CGER framework. This work should inform Article IV discussions and private communications between the Fund and its members. In this regard, the utility of the CGER framework may lie more in the realm of serving as a forecasting tool of medium-term sustainability of current account positions than in making precise, or imprecise, estimates of "badly misaligned exchange rates" at any given point.

We do not believe that an expanded role for public statements by the Fund on major industrial country exchange rates would be useful or productive. Nor would we view it as helpful to publish the CGER's results. The foreign exchange market is highly sensitive to public statements by officials and official institutions. In recent years, senior U.S. officials have strenuously avoided public commentary on the appropriateness of exchange rates. Such commentary invariably heightens nervousness in the markets, is subjected to numerous and conflicting interpretations among market participants which increase volatility, and often leads to pressures to make clarifying remarks, which can cause further problems.

Mr. Zoccali and Mr. Eyzaguirre submitted the following statement:

The staff is to be commended for its attempt to put difficult and to some extent unsolved analytical issues into a comprehensive and simple framework and into a readable paper. Further analytical and empirical refinement, as well as the extension of the analysis to other countries seem to us highly desirable. Progress in identifying the magnitude and possible causes of exchange rate misalignments, as well as eventual systemic consequences of delays in implementing corrective actions when warranted—particularly in the case of the major currencies in view of their asymmetric impact on world economic conditions—is of utmost importance and lies at the very core of the Fund's work.

Notwithstanding the above, there are two sets of issues that may deserve further clarification. The first one is that the assessment of whether or not the current value of the exchange rate is consistent with fundamentals may not be equivalent to the judgment regarding the strength of the country's fundamentals. The identification of misalignments is based on a comparison of the projected current account balances, once output gaps and lagged effects are accounted for, with the so-called S-I norms. While it has to be recognized that the "normal" saving-investment balance is highly dependent on some structural features including the relative income of the economy and the age structure of the population—that are not easily modifiable by policy—it also depends on factors like tax policy, fiscal prospects, health and education standards, which allow some room for changing the S-I balance over time. It is understandable that since the framework has been developed in the context of major industrial country economies where S-I norms are clearly sustainable ones, as it is apparent from Chart 3 in page 26, the assessment of the quality and sustainability of the fundamentals is not a main feature of the analysis. Although the paper recognizes that the S-I norms may be subject to modification if, in particular, fiscal policy is considered to be inappropriate, it is not clear which criteria are used for that purpose. Therefore, strictly speaking, the fundamentals behind the S-I norms can be inadequate.

In the endeavor of extending the analysis to developing countries the assessment of the sustainability of fundamentals seems to us essential. For instance, low/middle-income emerging market economies where structural reforms have been boldly implemented and macroeconomic policy is adequate, generally exhibit quite high marginal productivity of capital and insufficient domestic savings. The S-I norms, therefore, may show large imbalances. Does it mean that the equilibrium exchange rate accommodates huge current account deficits? Not necessarily. Although high rates of investment are likely to produce high rates of growth and over time increase the rate of savings, a large current account deficit also places the economy in a more vulnerable position. It seems to us that the distinction between possible misalignments of the exchange rate with fundamentals and misalignments of the fundamentals themselves is important. In practice, market exchange rate movements can be induced by the perception of misalignments in any of the two above-mentioned concepts.

The second issue refers to the mechanism of adjustment. A supply and demand theory is supplemented by theory of price determination. In this case, we lack a complete macroeconomic model that explains the adjustment mechanism, or the lack thereof, when exchange rates fail to be consistent with both the underlying current account balance and the savings-investment norms. As staff rightly points out deviations of current exchange rates from their equilibrium level may not necessarily be a matter of concern. In particular, if the desirable adjustment is implicit in the interest rate differentials one can project a smooth adjustment. But if that is not the case as in 1995, should we conclude the existence of a market failure? or that insufficient information has been provided to the markets? or that the estimated equations for the current account and the savings-investment relation are inadequate? Since different interpretations would prescribe different policy actions, this issue is very central to the topic. We agree, therefore, that problems of interpretation suggest that policy prescriptions need to be addressed on a case-by-case basis. However, such a conclusion also highlights the need for further elaboration of the causes that seem to lie behind manifest cases of currency misalignments, particularly given the increasingly globalized nature of financial transactions and Fund´s undertaking to fostering their orderly liberalization.

A somewhat more technical doubt arises when the paper deals with empirical cases. The suggestion that fiscal and monetary policy actions where needed in 1995, although correct, seems to us as coming from outside this framework. Moreover, it is argued in the paper that interest rates are endogenous in this framework, so it is not clear what the role of monetary policy is. Additionally, fiscal policies that are the basis for calculating initial misalignments are implicit in the S-I norms. So it seems to us that when fiscal policies are corrected this would also impact on equilibrium exchange rates, with the net effect on the misalignments somewhat ambiguous. Staff comments would be welcomed.

Finally, although we favor further research to refine the effectiveness of this analysis, we would associate ourselves with Messrs. Wijnholds and Levy on the appropriateness of the current balance between internal Fund analysis and public statements on currency exchange rates in general and, in particular, on the need to remain extremely cautious regarding disclosure of judgments on exchange rate and exchange rate policies, since the margin of error in the calculations is high and random.

The staff representative from the Research Department made the following statement:

The CGER methodology is intended to be applied in a way consistent with the view expressed in the statements of Mr. Ono and several other Directors—in particular, the view that the extent to which policies are consistent with ultimate targets is more important than the extent to which exchange rates deviate from estimates of their medium-run equilibrium levels. There are two senses in which the methodology is oriented toward the ultimate objectives of policy. First, in calculating the underlying current account balance and comparing it with a normal medium-run saving-investment balance, the CGER methodology is asking whether the current exchange rate—in conjunction with current and anticipated policies—is consistent with internal and external balance. In this context, internal balance is essentially equivalent to achieving full employment with low inflation. Second when the methodology identifies the possibility of a major misalignment, the case for action depends on whether policies appear consistent with ultimate objectives.

The methodology is also consistent with the view that considerable deference should be given to the market before suggesting that exchange rates are badly misaligned. Two points may be noted in this regard. First, in applying the methodology the staff has taken the view that a deviation of up to 10–15 percent from the estimates of medium-run equilibrium exchange rates is not necessarily significant. Furthermore, the calculated deviation is simply viewed as a starting point to trigger, when appropriate, a broader assessment which recognizes that substantial deviations may reflect cyclical positions or inappropriate policies, rather than situations in which markets are wrong.

The CGER framework represents a macroeconomic balance approach intended to complement assessments based on traditional calculations of international competitiveness indices or PPP measures. It differs from the simpler methods by focusing on the underlying current account balance and on deviations of the underlying current account from a normal saving-investment balance. While it is important to recognize that one cannot be very precise in estimating underlying current account balances and in judging appropriate saving-investment balances, the explicit focus on the underlying current account can provide relevant insights that are not captured by the other approaches. Policymakers focus on the current account position in forming judgments about exchange rates, and the CGER approach provides an appropriate framework for integrating the current account position into exchange rate assessments.

The approach of estimating underlying current accounts and comparing them with saving-investment norms would seem to have general applicability, but the types of models that the staff has been using for the G-7 countries may not be as appropriate for other countries. As Mr. Vernikov and Mr. Lushin point out, the relationships between trade volumes and exchange rates appear to be different for developing and transition economies than for the G-7 countries. In addition, a current account model for developing and transition economies would need to deal more adequately with nonfactor services and transfers. Furthermore, the saving-investment model for the industrial countries implicitly assumes perfect access to international capital markets, and also uses data that aren't as readily available for developing and transition economies. Nevertheless, where there is a will, there is a way—desks for several developing economies and smaller industrial countries have found it useful to construct underlying current account estimates and form judgments about normal or appropriate saving-investment balances, but it is difficult to extend the framework in each case.

The staff representative from the Policy Development and Review Department made the following statement:

> It is worth emphasizing that the CGER is but one way of assessing exchange rates, complementary to other methods. In many countries other than the G-7, staff analysis and Article IV surveillance have focused on exchange rate issues. In addition, developing countries' exchange rate policies have been explored on numerous occasions in the context of multilateral analysis—for example, in the most recent World Economic Outlook or in the paper on currency board arrangements.
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> The importance of exchange rate assessments in a multilateral context derives from the Fund's mandate to consider the impact of a member's policies on other members. For example, an assessment of the U.S. dollar-yen exchange rate would be relevant when considering recent developments in Southeast Asia. That is because developments between the U.S. dollar and the yen had a significant impact on the competitiveness of some countries with currencies pegged to the U.S. dollar. Surveillance of the currencies of the systemically important countries with potentially strong spillover effects on other members was one reason for the focus of the CGER exercise.

Mr. Toribio made the following statement:

> I thank the staff for a most useful document on the Methodology for Exchange Rate Assessments. It is, in fact, a clear and very illuminating paper on how to evaluate possible misalignments of exchange rates. The problem has concerned many of us for a long time and it seems to be specially relevant today, given the financial circumstances of many southeast Asian economies.
>
> The staff paper not only describes the current methodology, but also the different alternatives that were used in the past (starting by the classical PPP theory), as a better understanding of the forces that shape exchange rates gradually developed. I found the summary of the past very useful, because it saves us from the painful exercise of discussing if a different methodology would be better or worse than the one we are currently using. Economic thinking about exchange rates has evolved in the past few decades and—as I see it—the method we are using to evaluate possible misalignments today is the product of past experiences, and past mistakes made with other methodologies.
>
> From a purely technical point of view, I have, thus, very little to add to the four-step method described by the staff's paper. It is possible, as they recognize it (page 32), that more fully specified and dynamic multicountry econometric models could be used, but if we were to further sophisticate our analytical tools at this moment, I doubt the marginal benefit, in terms of accuracy of the assessment, would pay for the marginal cost in terms of time and resources.
>
> Let me, therefore, limit my remarks to the five specific issues the staff suggest for discussion at this Board.

I certainly agree with the proposal that the Fund continues strengthening its analysis of exchange market developments. We have not only the tools and the human resources, but also the responsibility to promote a better understanding of the exchange rate problems we are compelled to face by our own articles of agreement. I do not object to limiting our present research to simply identifying circumstances in which exchange rates have become inconsistent with economic fundamentals—as the staff explains it. However, in the future we should perhaps continue refining our analytical tools to better identify "equilibrium values" for exchange rates and anticipate currency market movements, to the extent possible.

Besides, current events in Southeast Asia reveal how much an extension of the current methodology of analysis to medium-size dynamic economies could have helped in an early assessment of the exchange rate crisis. I, therefore, encourage the staff to apply the methodology already used for G-7 currencies to the exchange rate of other currencies and especially to the situation of potentially critical areas of the world. Even if the analysis were only applied in a backward time dimension, it would be very interesting to know what its potential might have been in forecasting the southeast Asian events. A confrontation between calculated current account positions at the prevailing exchange rates for the Thai baht and the "normal" equilibrium level of Thailand's saving-investment balance would have been very interesting six months ago. Why not trying it for other selected countries today?

Although significant deviations of actual exchange rates from medium-term equilibrium levels do not always indicate the need for an immediate correction, they constitute a solid ground on which to base a meaningful discussion about exchange rate crisis. Otherwise, purely subjective feelings would tend to prevail. The staff are right, as well, in underlying the need to take more factors into account to assess the exchange rate problems, on a case-by-case basis. But, in that respect, I would like to make a couple of suggestions that may add to the list of those supplementary factors to be considered.

My first suggestion relates to the use of charts, time-series and other elements of the so called "technical analysis" referred to by footnote 15 of the staff's paper. I share the view of those who consider it as a little more than "voodoo economics" but, whether we like it or not, those techniques are very frequently used by traders in the foreign exchange dealing rooms. Therefore, they have a serious bearing on the process of pricing different currencies in the global foreign exchange markets. I am not suggesting that, from now on, the staff use the so-called "Technical Analysis" to assess exchange rate misalignments, but the Coordinating Group in Exchange Rate Issues (CGER) would, perhaps, do well in paying some attention to what traders are actually using as a base for their market behavior.

On the other hand—and this would be my second observation—any person who frequently talks to traders and who observes the dynamics of a trading room would agree that there exists a certain "market sentiment," not necessarily connected (or, at least, not always synchronized) with basic economic events. Whereas the evolution of that "sentiment" may not be easily summarized in a few numbers (or sentences), it constitutes an element that the CGER may also wish to consider to complete the picture. The Fund does not have any dealing room, but other multilateral institutions directly participate in the foreign exchange markets or use the services of professional dealers, and I wonder whether a frequent contact with them to know their impression about the "market sentiment" may be of some help to us. Perhaps the staff would make some comments in this respect.

Finally, the staff's paper raises the issue of whether (and to what extent), the Fund should make public statements on exchange rates as a result of the staff's analysis. This is obviously a very delicate question, since any publicity of the Fund's views could precipitate undesirable events.

In my opinion, the Fund should not make any formal declaration about exchange rates on a routine basis. Only very exceptional circumstances could justify a public statement and a careful consideration of probable consequences should, anyway, be applied beforehand. However, I do not see why the staff papers on that subject should not be more frequently published, with the results of their methodology, using either historical or even current data. The informed public opinion will probably receive those papers as valuable contributions to a better understanding of foreign exchange phenomena (that is, in fact, what they are).

In any event, I insist on congratulating the staff for their paper and hope they will keep us informed about future refinements of the current methodology.

Mr. Bernal made the following statement:

I would like to thank the staff for the interesting paper on methodology for exchange rate assessments.

It is clear that oversight of exchange rate policies of member countries is included in the core of the Fund's surveillance mandate. The effectiveness of Fund surveillance depends on the appropriate understanding and knowledge of the economic conditions of each member country, in which frank discussion of exchange rate issues must be made under a rigorous framework. One of the most difficult tasks of macroeconomic exercises is to identify "equilibrium values" for exchange rates. In consequence, essentially any assessment on misalignments of the exchange rate in a country has to take into consideration not only the current conditions of the economy but also its medium-run fundamentals.

The methodology presented in the paper represents a refinement of the macroeconomic balance approach. The formal analysis focuses on the extent to which prevailing market exchange rates and the implied current account positions are consistent with medium-run fundamentals. However, assessments depend largely on the conceptual models and empirical estimates used to quantify the current account positions and to calculate medium-run equilibrium levels for saving-investment balances. In consequence, and because deviations of the exchange rate could reflect different types of situations, judgments about appropriate policy responses in such situations need to be addressed on a case-by-case basis, taking into account different factors, including the cyclical positions of national economies, and in the context of considering the extent to which monetary and fiscal policies are, or are not, appropriate.

Whether anything should be done when the methodology identifies possible misalignments remains a question to be addressed on a case-by-case basis from a broader perspective. Usually the Fund has avoided public pronouncements on exchange rate constellations; however, the Fund has strengthened its work on exchange rate issues to improve its ability to identify possible misalignments among major currencies. This kind of analysis should be applied to a wider set of Fund members.

Finally, we are of the opinion that the Fund has not only to find the appropriate balance between internal analysis and public statements on exchange rates issues, but the staff must keep in mind also the need to avoid any filtration of this kind of information.

Ms. Srejber made the following statement:

At the outset, let me thank staff for an informative and well written paper. The CGER framework is clearly a "state of the art" platform for analysis of equilibrium exchange rates. As such, I can clearly see its usefulness in aiding the Fund in advising individual countries on exchange rate levels during surveillance discussions, as well as in aggregate analysis of the world economy. Exchange rate analysis is a core task for the Fund, and the Fund should continuously seek to strengthen this function, including with in-house research which could well profit from cooperation with universities.

The paper briefly introduces the alternative views on evaluating equilibrium exchange rates. Many methods exist, but they usually follow either the PPP or the macroeconomic balance approach, or some combination thereof. While there is not yet a theoretical or empirical consensus among economists on equilibrium exchange rates, no method is capable of accurate point estimates, and all methods involve normative judgment and produce considerable margins of errors. Alternative frameworks may also have been effective in predicting the extreme episodes portrayed in the paper, however, the paper does not attempt to formally test this against historical data. Meanwhile, it is a known phenomenon that alternative models can produce different results for the same episode.

In addition to the technical limitations, I would also like to point out that, even if an equilibrium exchange rate model was capable of correctly estimating deviations in equilibrium exchange rates, it would fall short of pinpointing the reasons, which could include controllable events such as the internal policy mix or noncontrollable events such as capital flows, unexpected political events, major real economic shocks, shifts in the terms of trade, or speculative attacks.

Let me add a few comments on the issues for discussion.

On question (1), I agree with staff that it is difficult to make precise estimates of misaligned equilibrium exchange rates, and the CGER framework should only be seen as a common platform that can provide systematic, globally consistent, and transparent estimates of exchange rates—not as an advanced telescope capable of mapping the exchange rate constellation. Hence, one should be careful when interpreting the results and cautious when drawing policy conclusions. Still, it is important for the conduct of monetary policy to get a picture of a possible interval wherein the equilibrium value for the exchange rate ought to be.

In the case of flexible exchange rates, a significant question is why currency markets sometimes appear to neglect economic fundamentals. A drawback in most exchange rate models is that credibility factors are not included. Also, it is important to look at the impact of financial disturbances on the exchange rates, since these can deliver large effects on the exchange rates in the short run. In some cases it may also be interesting to look into the effect of direct investments.

On question (2), I agree that exchange rates in many smaller economies are heavily dependent on exchange rates in the larger economies and hence the major currencies are very important. Nevertheless, identifying badly misaligned exchange rates may be equally important to apply to transition countries and emerging markets economies, in particular where exchange rate regimes are fixed or pegged to a key currency. Mr. Vernikov and Lushin have raised some issues that would need to be looked into when extending the model to a broader range of countries. Such a model could be used as an indicator in connection with annual Article IV consultations, because exchange rate advice is central to the Fund's mandate and the Fund should resort to "state of the art methods." But it need not be done as frequently as for the G-7 countries, but in Article IVs only when there is a need for a more thorough evaluation of the exchange rate.

Question (3) extends the matter to whether continuing analytical work is warranted. While I believe the Fund should generally make a greater effort in outsourcing some research to universities, and that staff tends to be preoccupied with a wide range of research topics, this is an area central to the Fund's mandate and warrants continued analytical work by staff. At the same time, I think the staff's work could benefit from good cooperation with universities, because universities have a comparative advantage when it comes to theoretical advancement. But, as always, there are resource implications and we should also bear those in mind as we go forward.

On question (4), I think that deliberations about appropriate policy responses in situations described in the question ought to be addressed on a case-by-case basis. In this context, I agree that staff should keep a broad perspective on policies and avoid jumping to conclusions about exchange rate levels, or exchange rate frameworks, as a source of misalignment. I would also caution that it may be risky to draw generalizations from the "episodes" described in the paper, even if these examples fit the argumentation nicely.

On question (5), greater openness regarding the Fund's methods would be desirable, Hence, I could consider that we publish a properly edited version of the present document. Regarding the analysis in individual cases, the balance between the Fund's internal analysis and public statements concerning exchange rates must respect the confidential character of the Fund consultations, as well as giving due regard to the sensitivity of financial market. An appropriate way could be for the Fund to complement its general views on exchange rates with a discussion of how those views were reached, for example in the World Economic Outlook.

Mr. Askari-Rankouhi made the following statement:

I think that this is an opportune time to evaluate how the Fund comes to assessments on exchange rates, particularly given the ongoing financial market volatility in Southeast Asia and the related need for the Fund to make such assessments. As is noted in the paper, surveillance over exchange rates remains one of the core activities of the Fund. The assessment of exchange rates, aimed at evaluating the degree, if any, of exchange rate misalignment, should therefore be an important element of Fund work. However, given the uncertainties involved in forming judgments on exchange rate movements, we would urge the Fund to continue to adopt a cautious tone when conveying its assessment of exchange rate movements to the Executive Board.

The paper usefully reminds us that real effective exchange rates in many of the major industrial countries have fluctuated substantially in the post-Bretton Woods era. At times, these exchange rate changes have gone beyond levels deemed consistent with economic fundamentals. Indeed, instances of apparent exchange rate misalignments have in the past prompted major industrial countries, individually or a ss a group, to express their concerns about these developments, and their desire to see a return to exchange rate levels more consistent with fundamentals.

At the same time, it is widely recognized that making a judgment on the appropriateness of a particular level of the exchange rate is a difficult undertaking. Not only is arriving at the equilibrium exchange rate a complicated task, fraught with uncertainty about the result, but the equilibrium exchange rate itself is not a stationary variable, meaning that one is dealing with a moving target. However, this does not obviate the need for a rigorous framework within which to conduct such an analysis. On the whole, we can endorse the CGER framework, which to us seems to represent a reasonable approach to assessing exchange rate changes, and we encourage the staff to pursue further work in this area.

However, we have a few comments on this framework, before addressing some of the broader issues raised in the paper.

The CGER approach presents a number of advantages, a fact that is borne out by the ex post analysis of previous episodes of exchange rate misalignment contained in the paper. One advantage is that the reconciliation of external imbalances is carried out in a multilateral framework to ensure global consistency. Moreover, I think it is appropriate that, in assessing the degree of misalignment, consideration is given to the particular cyclical position of the economies in question and prevailing monetary and fiscal policy stances. This added element of judgment is important, since the word "misalignment" has a negative connotation and carries with it the presumption that policy adjustment is needed. However, policy action is not always needed when exchange rates are deemed to have moved away from their medium-run equilibrium levels, as the spring 1997 episode shows. Thus, it is sometimes the case that the exchange rate is at a level that is consistent with the cyclical position of the economy, and market-determined changes in the exchange rate toward its equilibrium level are part of the mechanism that will bring the economy into equilibrium. On the other hand, perceived misalignments may often reflect tensions that ensue from inappropriate fiscal and/or monetary policies that should be addressed in the first instance.

At the same time, the approach also raises a number of questions. First, the range of estimated equilibrium exchange rates is likely to be quite wide given parameter uncertainty in estimating saving-investment norms and trade equations. It would therefore be useful to get some perspective on the sensitivity of the results to a reasonable range of estimates for the trade elasticities and other relevant parameters. Given these uncertainties, the criterion that is being used to flag misalignments may not be sufficiently conservative.

Second, the exchange rate does not play a role in achieving internal balance in this framework. By ignoring many of the potential effects of exchange rate movements on domestic demand—wealth, income, and price effects—the approach may overestimate the degree of currency misalignment. Here, I would be interested in the staff's comments on how their analysis would be affected if they considered the impact of the exchange rate on the saving-investment balance.

Third, instead of deriving relatively intractable saving-investment norms, consideration might be given to exploring views of external balance in a medium-term framework based on desired net external asset positions in relation to national income. In this case, the analysis would focus less on estimating current exchange rate misalignments and more on the required path of the exchange rate to achieve some desired level of external wealth over the long run.

Let me now turn to some of the broader issues raised in the paper.

Should the Fund make public statements about exchange rate misalignments?

The short answer in my view is NO. First of all, it is not clear what can be achieved by such statements. Secondly, the estimates of the equilibrium exchange rate are based on estimates of potential output and structural fiscal balances, which are both subject to large margins of error. As well, a number of ad hoc adjustments are made to the model. As a result, as I noted earlier, a reasonable range for the estimated equilibrium exchange rate could be very large, and I don't think it would be prudent to make a public pronouncement on the basis of an estimate that is subject to a lot of uncertainty.

What the Fund can do instead, as Mr. Wijnholds and Mr. Levy also suggest, is to limit its public pronouncements to the macro policy requirements, which would naturally be consistent with its views on the exchange rate, without explicitly addressing the issue of exchange rate misalignment.

Should the Fund continue analytic work in this area?

Despite our concerns about the staff's methodology, we think the approach can be useful as indicated by the case studies that are reviewed in the paper. To fulfil its mandate in the areas of surveillance and design of adjustment programs, the Fund needs to assess the appropriateness of the exchange rates. To carry out this task, the macroeconomic balance approach presents a number of advantages over the more traditional competitiveness measures. So, we urge the staff to continue its research in this area.

Having said this, however, I wonder if focusing this work only on the major industrial countries would be the best way to proceed. While not disputing that market exuberance at times might lead to significant currency misalignments for the major currencies, these episodes are rare and mostly self correcting. I think there could be more value in applying this kind of analysis to emerging and developing economies, despite the potential technical difficulties. In program countries, the staff's assessment of the appropriateness of the level of the exchange rate likely affects the design of the program. It would therefore be crucial to use the most rigorous tool available to make this assessment.

In this context, I would welcome staff's response to a couple of questions:

First, has the staff done this kind of analysis for the countries in southeast Asia? If not, would it be possible to do an ex-post assessment of the exchange rates in the region, using the CGER approach? I think , given the currency turmoil in the region, such an analysis would be a good test of this approach.

Second, suppose we apply this methodology to a country that has a currency board, and conclude that the exchange rate is substantially inconsistent with medium-term fundamentals. What would be the appropriate policy advice? The nominal exchange rate cannot be changed. Would it be possible then to put the real exchange rate on the right path without changing the nominal rate?

Mr. Donecker made the following statement:

The paper provided for today's discussion is indeed a very good one. I enjoyed reading about the analytical information the CGER framework can provide, but also the staff's discussion of its limitations and constraints—as well as my colleagues' critical, but certainly valuable comments contained in their BUFFs.

I can also endorse the staff's general conclusions for the surveillance process.

Indeed, a very cautious approach is required when assessing the appropriateness of exchange rates. At best we can strengthen our knowledge and economic foundations with the aim to improve our ability to identify cases of badly misaligned exchange rates i.e. ("wrong rates") at an early stage.

The paper discusses in detail the limitations and weaknesses of the CGER framework, which is highly sensitive to the assumptions and to the specifications of the parameters in the model calculations. The system is also based on a somewhat simplified approach.

Therefore, I share the staff's finding that the suggested results of the CGER calculations have to be interpreted with great caution. Their final interpretation requires substantial judgment. The steps and checks which should guide the judgmental process are very well discussed in the paper, i.e., cyclical and related financial conditions in various countries, interest and inflation rate differentials, but also—very importantly—the stance of the general policy mix. In this context, the sustainability of the fiscal position can be an important indicator. Here too, caution and differentiation are required. Even large structural deficits may have different effects on the exchange rate, depending on the overall situation. In Germany, for instance, a deterioration of the fiscal position following unification caused an upward shift of the equilibrium real exchange rate. On the other hand, there are also cases, where an increase of a fiscal deficit triggered a downward movement. Probably, differences in the credibility of monetary policy might provide an explanation for these differing reactions.

There certainly are other factors which also have to be taken into account when trying to judge whether exchange rates are out of line.

Let me now address some of the issues for discussion. First, the Fund's work in this area is very important and it should be continued. Exchange rate assessments are indeed a crucial part of the Fund's surveillance responsibilities. But we have to avoid giving wrong signals to the markets. The CGER model, as discussed in the paper, has its analytical limitations. It is also relatively demanding with regard to input and required resources. It might be worthwhile considering whether less sophisticated approaches might provide similar or possibly more concrete results. At least those approaches might provide interesting second guesses as well as further insights.

Secondly, I fully endorse the view that it is neither possible nor desirable to develop medium-term equilibrium exchange rates from this CGER approach as a basis for exchange rate targets or target zones. The outcome of the CGER exercise should rather be used as the basis or input for the internal analysis of the exchange rate situation within the surveillance procedure to identify major exchange rate misalignments. But even this requires an appropriate assessment and judgmental interpretation, otherwise it would run the risk of giving the wrong signals to the markets. Therefore—and especially in light of the sensitivity of exchange markets—it is crucial to exercise appropriate restraint and to refrain from discussing results of these models publicly. Here, we very much disagree with some colleagues.

We—like Ms. Lissakers and Mr. Sobel—do not believe that an expanded role for public statements by the Fund on major industrial countries' exchange rates based on this CGER approach would be useful or productive. I also would not suggest to publish this paper, as it is designed for our internal information and discussion. Also, for Article IV considerations, it is crucial to discuss the judgmental factors when assessing the adequacy of the exchange rate. Just to refer to the CGER outcome would not only risk misguiding the authorities, but it would also provide a false sense of precision of what are after all only model calculations.

Thirdly, for the stability of the international monetary system, exchange rate relations between major industrial countries are undoubtedly of great importance. However, recent events in Southeast Asia as well as in Mexico and other parts of the world have demonstrated that the attempt to maintain unsustainable exchange rates also in advanced economies does not only affect their own economic performance but also that of their neighbors. Against this background, I would encourage staff to also extend their work to newly advanced economies whose policies' repercussions are likely go beyond their own borders. CGER analyses could also provide significant insights for the discussion of the sustainability of exchange rate anchors.

And I agree with Mr. Zamani that the staff's immediate priority in this field should be to provide us as soon as possible with a paper on the problems that can arise in fixed exchange rate regimes and the related issue of an exit strategy and the identification of circumstances that call for different types of exchange rate systems. In this context, it certainly would be useful to enumerate once more the pros and cons of a truly flexible exchange rate regime for advanced and less advanced economies. We, too, have asked several times for a further in-depth seminar discussion on these issues. They are certainly of much greater immediate relevance for developing countries than this highly academic but useful discussion of the many limitations of the assessment of the medium-term CGER equilibrium rate, as recent developments in Southeast Asia have shown, yet again.

But for now, I would also like to hear staff's answer to Mr. Sivaraman's question about the existing big dichotomy in the absolute volume of currency trading and trade in goods and services which the currency trading is supposed to subserve—and the meaning of this dichotomy for the staff's work on the CGER equilibrium rate.

Mr. Autheman made the following statement:

I find this paper relevant, very interesting and also very clear—easy to understand for somebody without a profound knowledge of modern econometrics.

I would like to react strongly to the views expressed in several grays, and most forcefully stated by Mr. Donecker. The issue is minor next to the currency crisis in east Asia. The Board cannot be shortsighted to the point where in 1995 we would encourage the staff to preach the Asian model in Latin America and to focus on the fundamental issues of exchange rate imbalances among the G-7 countries, and then in 1997 say that the fundamental issue is the opposite one—that we should perhaps not pay too much attention to the issue of stability among major international currencies, and the only important issue is exchange rate development in emerging countries. We must have a working program which encompasses the balance of all important issues, irrespective of the cyclical fluctuations in world developments which forces us to move our attention from one to another.

On the overall approach followed by the staff, I would point to five interesting features. I like the model's transparency. Regarding the issue of misalignment, Mr. Kaeser is, of course, right when he says that you cannot know what is wrong if you do not know what is right. We are not concerned with right exchange rates; we are concerned with wrong exchange rates. This is where we should focus our attention. Furthermore, what is right is much more difficult to know than the opposite.

I like the attempt to follow a global and consistent methodology. In this regard, maybe the paper is a little too brief regarding the success the staff has achieved in meeting the consistency goal, or on the difficulties they are facing in arriving at a coherent conclusion for all major currencies.

I find the concept of an underlying current account position quite attractive, and I wonder whether we could do more in popularizing this concept.

Finally, there is a wise attempt to balance the analytical framework on the one hand, and a judgmental analysis on the other hand, with consideration given to cyclical developments, interest rate differentials, and structural changes, among others. Incidentally, I would like to ask how the staff would characterize the creation of the euro; is it a cyclical development or a structural change which would deserve attention in that regard?

My main criticism relates to the saving-investment norm. The paper is extremely cryptic on the model used by the staff to develop such a norm. It appears when one reads paragraph 39 that the norm is a reference, an abstract concept which is applied in a very pragmatic manner. The de facto approach followed by the staff has been to smooth observed, saving-investment balances by using a few theoretical concepts such as the dependency ratio, fiscal position, et cetera, as reference points.

I find it hard to believe that there can be a norm for a saving-investment balance in any given country. I would think, rather, that there is a range of sustainable positions and thresholds at which either the current account deficit, i.e., a savings deficit, or current account surplus, i.e., a savings surplus, becomes potentially unsustainable. While I welcome the efforts given by the staff to convey the message that one can only identify a range of equilibrium exchange rates, I am surprised by this reference of what appears to me to be a mythical saving-investment norm.

My second criticism is that we are looking only at one side of the coin, which is the real economy, and overlooking the other side, which is the determinant of capital inflows and outflows. In a recent paper reviewing 40 years of the Fund monetary model, Mr. Polak makes the interesting point that the major weakness of the still very strong model is the fact that it treats capital inflows as exogenous, and he points that they need to be made at least in part endogenous, dependent on both domestic interest rates and exchange rate expectations.

I refer to this paper because one of my surprises is the lack of any bridge existing in Fund work between the analytical tools used for industrialized countries mostly focused on the real economy, fiscal policy and current account determinants, and the tools used for potential program countries, where the focus is mostly on monetary policy and overall balance of payments balance.

To be more specific on that point, it seems that we cannot build our conclusions on a model which completely ignores, either in its analytical component or in its judgmental component, the mere fact that among the major industrialized countries capital markets are much more integrated than goods and services markets, leaving aside the specific case of continental Europe.

Therefore, it seems to me that, with the exception of circumstances where we fear that unsustainable current account positions may lead to major macroeconomic imbalances, the fundamental issue of exchange rate stability is an issue of the stability of the global financial market. It is striking to remark that in the recent episode of successful coordination, the emphasis given to concerns to preserve the stability of the international bond market was central in the minds of decision makers.

One final remark on this issue. Why is the U.S. saving-investment norm a deficit? It does not appear to be related to an unsustainable fiscal position. It does not appear also to be related to the dependency ratio. One cannot consider that this country has either a low GDP per capita or a major domestic imbalance in terms of higher unemployment. So, I wonder whether we should not take the issue from the other side, as suggested by Ms. Lissakers. It may be that the norm is a deficit because the U.S. issues the world currency and, therefore, the rest of the world needs to have a currency base available for it to trade and invest in dollar assets.

To conclude these remarks, I would like to make three other points. First, the Japanese issue deserves further work. In a very consistent manner, since we first discussed this topic in 1994, our Japanese colleagues are pointing to the matter of policy-led and market-led misalignments. One can easily understand the background of this remark, the assumption that if there is a misalignment of the yen, it is not related to Japanese policy but to market misalignments.

In reviewing its 1995 analysis, the staff suggests that they were part of a market misalignment at that time when it says that the advice given at that time appears to have been inappropriate—for instance, that the U.S. should raise interest rates.

Are there new developments in economic theory which can help us address the point? On my way back from Hong Kong, I accidentally discovered a recent book by the founder of the fractal theory, which makes the case that the fractal theory could be powerful in explaining apparently erratic and chaotic market movements such as stock market and exchange rate movements. Therefore, it opens the hope that there is an order in this apparent chaos of irrational market behavior. Mr. Ono is right in pointing to the need for us to continue to look at this issue.

On the matter of publication, everybody has to be cautious, but not to the point of general censorship. Therefore, I would find interesting Mr. O'Donnell's suggestion to publish ranges of assessment; equilibrium exchange rates could be one option. In the initial stage, I would prefer focusing on the publication of underlying current account positions. More information should be made available on the analytical framework developed by the staff and on its interpretation. To be useful, the publication of the staff's paper should have several annexes to explain fully the analytical basis of the framework. But I do not see a need to censor the paper; I do not think that we would create a major shock in the market by publishing it.

Mr. Donecker commented that it would be useful to publish the portions of the paper dealing with methodology. However, given the uncertainty inherent in estimates of exchange rate misalignments, it would be preferable to leave out the examples of individual countries discussed in the paper.

Mr. Autheman remarked that in 1995 and 1997 the Fund had made public statements on the pattern of exchange rates. By making the analytical background material public, the Fund, rather than introducing new judgments, would merely provide technical support to its previous statements.

Mr. Al-Tuwaijri made the following statement:

I join others in thanking staff for an interesting and informative paper on their methodology for exchange rate assessment. An enhanced understanding of this methodology should facilitate discussion on this important issue, which is clearly central to the Fund's mandate.

The macroeconomic balance approach which underpins the CGER methodology is an appealing concept and has a number of advantages over the PPP. However, empirical estimation of an equilibrium exchange rate using the macroeconomic balance approach is clearly subject to substantial margins of error. Therefore, I agree with staff on the need for caution in trying to pinpoint the equilibrium exchange rate. Even pinpointing a range for the equilibrium rate is subject to substantial uncertainties. Nevertheless, the approach provides a useful framework to generate additional indicators of whether exchange rates are broadly in line with economic fundamentals. To this end, further work in this area would be warranted.

In addition to the uncertainties in pinpointing the equilibrium exchange rate, it is important to be careful when interpreting deviations from the calculated rate. Here, I fully agree with staff that, responses need to be addressed on a case-by-case basis and take into account the specific circumstances and policies for each country.

I can appreciate why the main focus of the CGER has been on the exchange rates of the major industrial countries. The currencies of these countries are of systemic importance to the stability of the international monetary and financial system. Data availability may have also played a role. However, as some Directors noted, it would be useful to increase the number of countries subject to this analysis. Here, extreme caution may be necessary not only because of data weaknesses in some cases but also due to structural changes in emerging economies that make the estimating exercise even more difficult.

Finally, on the issue of dissemination of Fund views regarding the exchange rate, I agree with Mr. Kiekens and Mr. Jonas that the most important conclusion of the paper is that, "we cannot judge the proper level of real exchange rates with sufficient confidence to justify public statements about the inappropriateness of existing exchange rates." Moreover, such public statements may become a self-fulfilling prophecy, especially in the case of smaller countries. Therefore, extra caution is needed in this area.

Mr. Taylor made the following statement:

I would like to support what Mr. Donecker said at the beginning of this meeting. There are an awful lot of grays that came out too late for me to read them. I suppose I probably never will read them. If there is a time guideline, I would like to know what it is and I will try and observe it. I think we need a guideline on grays that goes both to time and length. It is one aspect of our procedures that needs to be tightened up, and I think we need some guidance.

We do not need instructions from the Secretary, but we need guidance from the Secretary on this.

Just a few remarks directed to the questions at the end of the paper.

Should the Fund keep doing this sort of analysis? Well, the Fund needs to seek to continuously strengthen its analysis of exchange rate developments. At the same time, I do not believe this model should or could ever be the centerpiece of the Fund's analysis; it needs to be part of the toolbox, the analytical toolbox.

On the question of whether the model can usefully be applied to a broader set of Fund members, in principle the answer must be yes. I had quite a lot of sympathy for what Mr. Zamani and some others had to say about this. I am not quite sure how to read the footnote on page 6, I think it is, footnote 5, which addresses some of the methodological limitations concerning countries with capital controls. It would be very helpful, I think, in the light what has been said by others, if we could have some more observations from the staff about what the limitations are on extending the use—can it or can it not make a contribution in present circumstances to analyzing the southeast Asian situation. If it cannot, if the data limitations or the nature of the situation precludes use of this approach, where are the limits—for example, a country like Korea; is it useful in analyzing a country like Korea at its stage of liberalization?

Whatever the state of robustness of the model, I would also agree with Mr. Zamani and Mr. Donecker that we have been waiting for a very long time for the paper on the exit strategy and it appears to have been postponed again. I would like to understand why, and when that will be available.

Is continuing analytical work warranted? Well, I think that is certainly the case. If we are to continue to use the methodology or refer to it at all, it needs more work done on it. The economic underpinnings, of course, are subject to a wide range of uncertainties, which have been pointed out in the grays and underlined again this morning. There is a host of technical questions. I do not think any of these uncertainties should preclude publication; in fact, the paper should be published. The only question there should be whether it is of sufficient professional quality and relevance. I guess, though, we would need to look extremely closely at any subject-specific annexes.

Should appropriate policy responses be addressed on a case-by-case basis? Well, if the results of the model indicate that an exchange rate is misaligned, it tells us little, if anything, about why that result has occurred and what should be done about it. The focus needs to be on analyzing why the model's result has occurred rather than the result itself, and in this respect I guess I really feel rather nervous about seeing how it could be used in practical circumstances. The difficulty, I think, is that as soon as you produce a number for the exchange rate, it becomes a magnet and everyone fastens to it—not only the markets but policymakers to some extent, too—and that could have some quite perverse effects. It is easy to think of cases where focus on the exchange rate would be unhelpful. For example, the saving-investment equation may be out of alignment because there is a large fiscal deficit and because the tax system discourages savings. Then the action should be with fiscal policy, not on an apparent exchange rate misalignment.

Moreover, the exchange rate change is usually the beginning, not the end, of policy adjustment. If an exchange rate change is resisted by interest groups within the country, it will come out in terms of price developments which undo the exchange rate. Furthermore, sometimes if policy is preoccupied with a highly inflationary situation, holding the exchange rate may be an essential tool for a time in squeezing inflationary expectations out of the system.

One final example. I do not think the analysis says anything in the face of well-observed differences in national characteristics. After all, there are lotus eaters and honeybees among member countries. If the exchange rate changes, I do not know that that is going to turn the one into the other.

Should the Fund make public statements? Well, in current circumstances, the extraordinary circumstances of the immediate present, I think we do have to be extremely careful about what is said in this and any other context about exchange rates. I think the general answer is we should be guided by the source of the misalignment. If it is flowing from wrong-headed policy, then the Fund should be talking to the country and to the policymakers; that is the port of call, not the markets but the policymakers. If the misalignment is stemming from wrong-headed market sentiments, then presumably the Fund should be coordinating what it has to say with what the authorities themselves have to say.

The Acting Chairman remarked that the paper on exit strategies was in draft and was currently being reviewed by management.

Ms. Zheng made the following statement:

I welcome the study on the methodology for Exchange Rate Assessments over Major Industrial Countries. This study is indeed important to sharpen the Fund's sense of smell over the possible exchange rate misalignment among major industrial countries. While methodology of assessment is important, it is more important to implement and react effectively toward significant misalignment. I would like to offer some general remarks on the surveillance over exchange rates and then go through the issues raised by the staff.

First, we view the staff study on CGER helpful for management to judge the major exchange rate misalignments. Exchange rates are not only determined by economic fundamentals, but also by cyclical positions and important policy changes. Notwithstanding some critical technical difficulties to gauge the degree of exchange rate misalignment precisely, the CGER model can at least offer theoretical reference to the equilibrium exchange rate benchmark and find out the timing of the major misalignments. Therefore, Fund management, while not entirely relying on the result of the model, should be able to strengthen its dialogue with the major countries concerned and adjust the CGER result by incorporating important policy elements which are unable to be caught in the model.

Second, we view the Fund's role in identifying and reacting to major exchange misalignments important in securing an orderly international monetary system. Undoubtedly, the exchange rate pattern of the major industrial countries is of critical importance for the world economy, trade and capital flows, and, therefore, has a significant impact on the economies of the developing countries. Exchange rate volatilities can be very detrimental to world economic activities, especially to those developing countries whose markets are too shallow to adjust to the shocks. It is particularly the case that measures to deal with possible exchange rate volatilities should be developed in the context of the Fund's drive toward capital account convertibility. Enhancing the Fund's role on exchange rate surveillance over the major industrial countries should by no means be a slogan, but an urgent need befitting the current global situation where world capital market developments are accelerating, developing countries are catching up and need a more stable development environment. The Fund's past involvement in coordinating the exchange rate issue with major industrial countries had to some extent contributed to the early smoothing out of the exchange market and we would like to encourage such efforts to enhance the effectiveness of the Fund's role in international coordination, in particular the G-7 or G-3 coordination mechanism.

Third, given the important impact of the emerging EMU on the major exchange relationship in the world, there seems a need for the Fund to adjust the exchange rate model, and possibly establish a new model. The Fund's surveillance over the industrial countries in the post-EMU era could have a new dimension over the present surveillance framework. I wonder whether, at this stage, the staff have any thoughts on this issue.

Now, allow me to go through the major issues raised by the staff.

On question 1, we support the staff effort to strengthen the analysis of exchange market developments and enhance the precision of the model. We also agree that the key objective could be to try to identify circumstances in which exchange rates have become substantially inconsistent with the medium-run fundamentals.

On question 2, which is whether the approach should be applied to a broader set of Fund members, I share Mr. Ono's view that they do not fit into the market access assumption built into the model and that surveillance over developing countries should be more focused on building an early warning system to identify the major deviation of the exchange rate development from the trend. I listen with interest to those Directors who advocate the extension of the CGER model to newly advanced economies who bear the impact on neighboring countries. I agree that such efforts could help the Fund to identify the possible misalignment situation in an early stage. However, I would like to note, these countries, despite their advanced level in comparison with average developing countries, differ fundamentally with the sample countries in the model, especially in the depth of the financial market and transmission mechanism of monetary policies. Furthermore, I would like to hear from the staff how the application of CGER could fit into the multilateral consistency assumption in the model. All in all, I hope that such an intention will not deviate from the Fund's focus on exchange rate surveillance over major industrial countries.

On question 3, it is evidently important that the staff continue to improve the analytical framework to quantify the influence of exchange rates on current account positions since both the exchange rate level and the impact of the exchange rate are important in the Fund's surveillance exercises. Chapter IV detailed two important technical "limitations" affecting the precision of the model: the lack of dynamism in the model and the uncertainty surrounding the estimates of medium-run "equilibrium" exchange rates. I wonder what the direction of the "continuing analytic work" is in this regard and whether such work can involve overcoming the above two limitations.

Question 4 raises the question of how to interpret the result of the model. I fully agree that in the case that the large deviation from the medium-run equilibrium level reflects reasons other than exchange rate misalignment, it is practical to analyze the situation on a case-by-case basis. It is also important to distinguish which are the factors owing to market overreaction and which are to policy changes in the economy.

Concerning the publication of the Fund assessment based on CGER, I agree that this practice should observe the Fund's confidentially rule and should be handled very cautiously to avoid market overreaction. However, I see the merit in Mr. Zamani's statement that the Fund can first communicate with officials from affected countries about its concerns on the exchange rate problems. Such an approach might be more effective than a public announcement.

Mr. Shaalan made the following statement:

At the outset we would like to thank the staff for providing us with an interesting paper on the methodology used by the Coordinating Group on Exchange Rate Issues (CGER) in assessing the appropriateness of the exchange rate level and its possible application in Fund surveillance. I particularly appreciate the fact that the paper presents alternative views about how such assessments should be made and on the usefulness of evaluating exchange rate misalignment.

As widely accepted, many factors will influence the exchange rates in the short run. Some of the factors may be economic, others are financial, or political. Of course, expectations of market participants play the major role in determining the level of the current exchange rate. In many cases, in fact too many, deviations of exchange rates from their medium-term equilibrium levels (whatever that means) do not necessarily call for corrective action. I am not as sanguine as others on the rational behavior of markets, particularly in the short run.

Measuring the degree of misalignment is a difficult task, since it attempts to measure the deviation from unobserved variable, the "equilibrium" exchange rate, which is itself a moving target. In addition, there are differing views on what constitutes an equilibrium exchange rate, and using different assumptions in calculating the equilibrium exchange rate yields different estimates. Hence, as the staff suggests, it makes sense to use ranges rather than point estimates of equilibrium rates to form benchmark for estimating the degree of misalignment. But again, the ranges may need to be so wide; that being the case wide ranges may not be very useful for policy guidance.

Neither the CGER framework nor any other model that I am aware of can deliver precise estimates of the medium-run equilibrium levels of real exchange rates. The staff discussed openly the limitations of the CGER framework in paragraphs 54 and 55. As a result of the different sources of uncertainties, statistical confidence intervals were not calculated and the staff used its judgment in selecting the range of deviation from the "equilibrium" rate that is considered not to be significant.

Exchange rate surveillance is the most important responsibility of the Fund. The objective of the surveillance according to Article IV of the Charter is to help "assure orderly exchange arrangements and promote a stable exchange rate system." The Fund's Principles of Exchange Rate Surveillance define "disorderly" exchange rates as involving protracted large-scale intervention, extensive official borrowing, or the application of balance of payments restrictions or monetary or fiscal policies that provide abnormal incentives to capital flows. Given that and the imperfect state of knowledge I referred to, the Fund would be in a better position to focus on the consistency of the exchange rates with prevailing fundamentals and not to insist on precise links between program design and monitoring, on the one hand, and exchange rate levels, on the other. Given the level of uncertainties and limitations of the CGER framework and other econometric models pointed to by the staff, a considerable degree of judgment is required before concluding whether or not exchange rate misalignment exists.

While we welcome the attempts to improve on the macroeconomic balance framework, we are not entirely sure that this current objective has been achieved. As I indicated, there are serious limitations associated with the CGER framework. Indeed, the staff points out in paragraph 13 that "substantial parts of most of the wide swings of major currency exchange rates do not have convincing and generally accepted explanations in terms of movements in economic fundamentals." If this is the case, even with the benefit of hindsight, we wonder how it is possible to develop a model to determine the so-called "right exchange rate." The staff's exposition of the CGER's 4-step approach suggests that the marginal benefit of the "formal analysis" embodied in the model is very limited compared to what is referred to as "judgmental factors." These judgmental factors, as explained in paragraphs 49 to 52, include considerations of (i) cyclical and related monetary and financial conditions; (ii) short- to medium-term interest rate differentials adjusted for differences in expected inflation rates; (iii) exchange rate implications of fiscal imbalances; and (iv) underlying structural conditions. In our opinion, there is greater merit in focusing on these four elements, in explaining exchange rate swings than in the modeling approach.

Mr. Nord introduced an important dimension to exchange rate misalignment, namely the spillover to other countries of significant misalignment in key currencies. Here, I have in mind specifically the $/yen misalignment of 1995 and its impact on a number of Asian countries. I believe that the staff could usefully explore this dimension further.

On public announcement by the Fund on exchange rate assessments, I have serious misgivings on pursuing such a course of action. Many Directors have expressed their reservations. I find myself in agreement with the views of Mr. Ono, Ms. Lissakers, and Mr. Sobel on the subject.

Mr. O'Donnell remarked that placing the staff paper in the public domain would allow the Fund to receive independent feedback from outside experts on the merit of the CGER methodology, including a comparison with new models of exchange rate determination.

Mr. Shaalan considered that the goal of transparency would not be advanced by publishing a methodology that produced results that were less than satisfactory, which appeared to be the case with the CGER.

Mr. Eyzaguirre said that the CGER framework attempted to rationalize where exchange rates should be. It was not a theory of exchange rates determination that would purport to explain the present level of exchange rates or their movements.

Mrs. Guti made the following statement:

Like others, I wish to commend the staff for the clear presentation on the conceptual framework and analytical process which currently forms the basis of the Fund's surveillance over the exchange rates of the major industrial countries. A welcome aspect of the methodology is the way in which it seeks to bring judgment regarding a broad range of factors that bear on the formal analysis and the results from empirical estimation. On the whole, the approach appears to be reasonably adequate for the purpose and probably offers scope for further development.

On the issues for comment, I think the suggestion that the Fund should seek to strengthen its analysis of exchange market analysis and possibly extend such analysis to a larger set of Fund members is a useful and timely one. As pointed out in the paper, freely functioning markets have not, as theory might have suggested, kept exchange rates of the major industrial countries closely aligned with the equilibrium values. This experience does not seem to be limited to these countries, but seems to be quite widespread. Thus there continues to be a potential role for appropriate policy response in cases of substantial exchange rate misalignment. Although the objective of such policy intervention should not be to achieve some equilibrium rate or targets, recent developments in the currency markets probably suggest that the focus of the Fund's analysis needs to go beyond the currencies of the major industrial countries and perhaps include currencies that are important in a regional context. As to whether the analytical framework could usefully be applied to a broader set of Fund members, clearly this will require some adaptation and further development, but I consider the idea worth exploring.

On the issue of what the objectives of Fund analysis of exchange rates should be, the staff suggests that the Fund should focus on identifying situations in which market-determined exchange rates are seriously out of line with medium-term fundamental equilibrium. We agree with this. However, the staff points out that it is difficult to provide precise estimates of the medium-term equilibrium exchange rates. They also say that their own estimates are subject to a margin of error of between 10 and 15 percent. In this context, we wonder whether we are likely to be able to identify a case of an emerging misalignment.

Regarding the CGER framework itself, the staff seems to have developed a relatively simple and yet useful approach that enables them to estimate a country's current account position, calculate savings investment equilibria, and thereby estimate the exchange rate consistent with medium-term fundamental equilibrium. The paper discusses some of its limitations, and there seems to be scope for work to enhance its usefulness. One area that might be important in this regard is adjusting for changes in the medium-run exchange rate arising from underlying structural conditions. This seems to be particularly relevant if this framework is to be applied to countries undergoing rapid structural changes.

The exercise involving the application of the CGER framework to the episodes of currency misalignments described in the paper appears to suggest that the framework is capable of delivering correct signals. However, it seems that it would be useful if in the hypothetical cases the estimates obtained were further analyzed in the light of those broader issues that entered in stage 4 of the process. This would have allowed one to see whether or the methodology as a whole would have indicated the need for policy responses.

Mr. Santos made the following statement:

We welcome today's discussion, which we find particularly opportune. Surveillance over exchange rates is at the core of the Fund mandate, and we believe that the need for the Fund to have an independent assessment of exchange rate developments is pertinent, at least for a couple of reasons.

First, the increase in turnover in international capital markets and the predominance of financial flows in setting the conditions in foreign exchange markets lead to higher potential for exchange rate misalignments. Indeed, these flows tend to be more volatile than trade-related flows and sensitive to factors sometimes not clearly related to economic fundamentals.

Second, with the advent of EMU and of a new reserve currency, there is the potential for the emergence of misalignments among the main currencies as economic agents reshuffle their portfolios in order to accommodate the new reserve currency. This is compounded by the uncertainty on the strength of the euro, reflecting both institutional and economic factors: institutional factors, as the degree of independence of the future European central bank are not yet clear; economic factors, as ultimately the strength of the euro depends on future progress in fiscal adjustment and structural reforms by EMU participants.

As is recognized in the report, despite the gradual refinement of the analytical framework, a great deal of judgment is needed to assess the position of exchange rates and existence and extent of any misalignment. Hence we believe that efforts should be made to minimize the call for judgments. This could be achieved first by identifying the circumstances and policy regimes that are more likely to lead to the development of a misalignment. Indeed, rather than trying to correct misalignments which are identified with heavy recourse to judgments, we believe focus should be placed on avoiding the emergence of those circumstances that are more likely to lead to developing misalignments.

Specifically, we believe it would be interesting to investigate whether some exchange rate regimes are more conducive than others to the emergence of misalignments. For instance, are those regimes where the flexibility of the real effective exchange rate is attained through changes in prices rather than changes in nominal exchange rates more likely to lead to misalignments?

Finally, we believe it would be interesting to refine the framework so that it is able to provide some insight on the trend of the equilibrium exchange rates rather than on an estimate for a point in time.

Mr. Ismael made the following statement:

We would like to join others in commending the staff for providing us with an interesting and informative paper which describes as plainly as possible the methodology being used to assess the exchange rates of major industrial countries. We find this an important exercise given that the oversight of exchange rate policies is at the core of Fund's policies.

From the staff paper and previous speakers' statements, it is clear that our present state of knowledge does not allow us to make precise estimates of what an "equilibrium" exchange rate should be. However, it would appear that for the major industrial countries, by using appropriate models and personal judgment, it is possible to identify significant deviations from levels consistent with good economic fundamentals. Despite the weaknesses, we find the exercise to be very useful in helping the Fund to discharge its responsibility as regards the oversight over members' exchange rate policies. However, in view of weaknesses that have been highlighted and the potential adverse effect on markets, we agree that the Fund should avoid making any public statement about the appropriateness of exchange rate, and for the same reasons, we encourage the staff to continue its analytic work in this area, and to continue to refine the models. We consider appropriate the present approach of the CGER to look for cases where exchange rates are largely misaligned and to inform the authorities about it.

On the issue of which countries to include in the exchange rate assessment, we agree with Directors who see merit in expanding the list beyond the G-3 countries to include countries whose policies can have a major impact on their neighbors. However, here also we need to exercise extreme caution, because the models have weaknesses which have been highlighted by the staff and these models may not fully capture all the factors affecting exchange rates in these countries. As has been mentioned by a few Directors, in the smaller economies, very often a change in policies rather than an adjustment in exchange rate is called. Here also we agree with others that more work needs to be done regarding the exchange rates of developing and emerging countries.

Mr. Sivaraman, in his statement, has drawn our attention to the dichotomy between trade in goods and services markets and that of the currency markets which are several times bigger, and the potential adverse effect that this can have on the exchange rate of smaller economies. Quite often, these currency trades magnify the exchange rate weaknesses and lead to severe problems for the authorities, as we have witnessed recently in Asia, and I would like to hear staff's answer to his question on this matter.

In conclusion, we would say that we broadly support the CGER's approach, while also encouraging the staff to continue to work on improving the models, and to follow closely the work that is being done in this area in the academic field.

Mr. Daïri made the following statement:

I welcome today's discussion and commend the staff for a concise and clear paper on such a complex topic. I find the CGER framework interesting and most appropriate for the need to strengthen the Fund's analysis of exchange rate developments.

Since the collapse of the Bretton Woods system, a measure of exchange rate instability is inherent to the international monetary system. In particular, short-term deviations of the exchange rate from medium-term equilibrium levels could be explained by various factors, including changes in economic cycles, inconsistent policies, lags in the effects of policies, or overshooting of markets. In view of these factors, I agree with the staff that a 10–15 percent deviation from medium-term equilibrium exchange rate is not to be considered alarming. I also share their view that the Fund should not express its views on appropriate or target exchange rates of major industrial countries, or of any country, but rather limit its assessment to cases when the rate is clearly out of line.

However, whenever the misalignment reaches a level that could have systemic implications, the Fund should express its views, and, if necessary, publish them. This would provide markets and the public with a concise message about the Fund's role in oversight of the international monetary system. While exchange rates of major industrial countries are market-determined, there are limits not to be exceeded and the Fund should draw the attention to them.

In view of the instability inherent to the system and unless a great deal of integration of trade and financial flows with a major international currency center is achieved, a country pegging its exchange rate to such a currency would run the risk of adverse turbulence or economic instability. This is all the more important in view of the fact that major international currency centers may have shown a stronger resilience to significant changes in exchange rates than developing or transition economies. This resilience can be explained by the very nature of these international currencies in providing safe havens in crisis situations and in view of their weight in total trade and capital flows. In the same vein, correction of exchange rate misalignments of these countries does not respond only to policy changes, but to other factors as well. The staff may wish to comment. The difference in resilience to exchange rate changes of advanced economies and developing or transition economies strengthens the case for the Fund to pay more attention to exchange rate systems in the latter countries, with a particular focus on the exchange rate arrangement that would better serve the achievement of the country's objectives, including its credibility with markets. The Fund's assessment should also address the appropriateness of the exchange rate, especially when it is clearly out of line. In this respect, I join Mr. Zamani in calling for an application of the CGER methodology to a broader set of countries to supplement the traditional real exchange rate calculations.

I agree that a case-by-case approach to exchange rate assessments is warranted, and that further analytic work is welcome. I also share the reservations expressed by several Directors regarding greater openness in Fund's assessment of exchange rates of member countries. Except in the case of the major international currencies where there is a need to preserve the integrity of the international monetary system, and where the major misalignments should be pointed out, the Fund should refrain from making its assessment public for other members. However, this should not prevent the Fund from publishing—preferably with members' assent in the PIN framework—its views on the stance of policies of member countries and their consistency with their medium-term growth and balance of payments objectives.

I support the publication of the paper.

The staff representative from the Research Department indicated that the saving-investment norms for industrial countries, and for the G-7 countries in particular, were derived from the Research Department's saving-investment model, which provided econometric estimates relating saving-investment balances to variables suggested by theory as relevant in the medium run. The focus on the saving-investment norms could be seen as an attempt to respond to Mr. Polak's exhortation against treating capital flows as exogenous.

The model was intended to focus on the difference between saving and investment in a world in which the sum of saving-investment balances had to be zero, the staff representative explained. Hence, the explanatory variables were expressed in relative terms—income per capita relative to the world average, demographics relative to the world average, and fiscal positions relative to the world average. Moreover, the world interest rate dropped out of the model, even though it had important separate effects on saving and investment. It should be noted that the equations for individual countries had different intercepts—country-specific constants—that could be used to explain differences in saving and investment rates across countries, including the effects of portfolio choices and intermediation alluded to by Ms. Lissakers and Mr. Sobel. That consideration helped explain why the intercept for the United States was negative. The model provided a basis for quantifying what would be historically normal saving-investment balances for different countries, given their relative income positions, relative demographics, and relative fiscal positions. A degree of global consistency was being achieved by using a model with common coefficients, apart from the intercept terms.

Although the staff had not investigated the impact of differences in interest rates across countries, cyclical factors were being captured through the inclusion of an output gap, the staff representative indicated. Moreover, to the extent that interest rate differentials contained medium-term components, they were captured implicitly in the differences between the country-specific constants.

It should be emphasized that, in deriving the saving-investment norms, the medium-term structural fiscal positions were conceived as sustainable, the staff representative said. An unsustainable fiscal position would be inconsistent with the concept of a normal or equilibrium saving-investment balance.

Regarding the links between fiscal positions and saving-investment balances, there had been a growing awareness during the 1990s that, when fiscal deficits were initially large, fiscal consolidation could be expansionary via its effects in reducing interest premiums, the staff representative indicated. Consequently, investment could increase, while precautionary saving would decline—the opposite of the effect embodied in the present saving-investment model. That suggested that a more sophisticated model might be desirable for capturing the links between fiscal positions and saving-investment balances. On a related issue, it was unclear how the inclusion of exchange rates in a saving-investment model would affect the results. Theory might suggest a complicated set of possible effects, some of which would not be linear.

Although an explicit consideration of net foreign asset positions did not appear so important in modeling saving-investment balances for the G-7 countries, the staff representative suggested, it might be important for countries that did not enjoy easy access to credit markets or countries with high debt positions.

The 10–15 percent threshold used as a criterion to uncover possible misalignments should not be interpreted as a statistical confidence interval, the staff representative said. It served as a filtering device to identify cases that warranted additional investigation. In such situations, knowing the statistical confidence bands that surrounded estimates coming from any particular model seemed much less important than applying more than one set of models. Currently, the staff considered two sets of estimates of underlying current accounts: those generated by the Research Department's trade model and those prepared by country desks as part of their World Economic Outlook projections. Greater scope remained for bringing alternative models and judgments to bear in quantifying the saving-investment norms.

Although, in principle, a framework focusing on the underlying current account and the saving-investment norm should be applicable to all countries, data deficiencies and other complications would likely necessitate greater reliance on judgment in quantifying norms and underlying current account balances in the case of countries other than the G-7, the staff representative suggested.

The CGER methodology did not take a view on whether or not, or how, the behavior of exchange rates was affected by the tremendous growth over recent decades in the volume of currency trading relative to imports and exports, the staff representative continued. It did not attempt to model the short-run behavior of exchange rates—rather, it focused on medium-run equilibrium, defined on the basis of models of the underlying current account and the medium-run saving-investment balance independently of the volume of capital account transactions. The existence of a medium-term component to capital account transactions, or a shift in a country's attractiveness for foreign direct investment expected to persist over the medium run, could be considered when extending the CGER framework to developing countries.

The idea of trying to quantify the effects of factors that are only taken into account in the judgmental step of the current methodology—in particular, the effects of cyclical shocks on the behavior of exchange rates—would require supplementing the CGER analysis by analysis from a more dynamic model, such as MULTIMOD, the staff representative suggested. The feasibility of such an extension could be explored, although it should be recognized that the cyclical behavior of exchange rates generally depended on the types of shocks generating the cycle. However, there was a difference between introducing dynamics into the CGER analysis and using MULTIMOD to calculate the equilibrium path of the exchange rate. MULTIMOD could be used to generate a long-run equilibrium exchange rate and then derive the equilibrium path for the exchange rate, but the results would depend on some strong assumptions about the pace at which growth rates converged in moving to the long run. The CGER framework defined equilibrium on a five-year horizon—a horizon used by country desks in making their World Economic Outlook forecasts. In light of the thought that went into the World Economic Outlook projections and the arbitrary assumptions required to pin down the levels of the long-run exchange rate in MULTIMOD, basing estimates of equilibrium on the World Economic Outlook horizon was preferable.

Other approaches, such as international competitiveness indices—for example, a simple purchasing power parity-type approach and its variants, including the Balassa-Samuelson version—were useful complements to the CGER methodology, the staff representative continued. However, the important advantage of the CGER approach over the other methods derived from its focus on the underlying current account. Even the reduced form methods that were embedded in a theoretical framework reminiscent of the macroeconomic balance approach did not offer insight into underlying current account balances. While some reduced form models might prove useful in exchange rate forecasting, and as a result might be employed by some market forecasters, they still represented approaches distinct from the one offered by the CGER framework.

The staff—in particular, the international capital markets group—maintained contacts with market participants, the staff representative continued. However, it would not accord high priority to preparing a survey of the literature on the subject of foreign exchange market structures and trading strategies. Some good survey papers on the subject were in the public domain already, for example, the Shleifer and Summers paper cited in the staff's paper's reference list. The surveys conducted by the G-10 central banks after the 1992 exchange market turmoil suggested that market participants relied heavily on technical analysis; and it was common knowledge that models linking exchange rates to short-run fundamentals performed miserably. Consequently, it should come as no surprise that markets sometimes tended to get out of line with fundamentals in the short run. To reiterate the staff did not aspire to model the short-run behavior of the exchange rates. The CGER approach offered a framework for analyzing where current account balances were likely to move in the medium run based on macroeconomic fundamentals, and for deriving the levels of exchange rates consistent with the projected current account changes.

Ms. Srejber said that she considered it useful for the staff to maintain contacts with foreign exchange market participants. While such discussions might not lead to any refinements to the CGER model, the information could be weighed against other input when applying judgment to the model results.

The relevance of the question about the turnover in the currency markets being disproportionate in relation to the volume of trade in goods and services was unclear, Ms. Srejber remarked. It seemed to imply that one could identify a "correct" turnover, and that some transactions were useful, whereas others were not. Such determinations were impossible to make—for example, if a pension fund invested in overseas markets to diversify its portfolio and hedged its positions in order to protect the savings of their customers, could one conclude that such transactions were not useful?

The Economic Counsellor remarked that of the staff made an effort to read some of the literature on market dynamics and to follow the market commentary to keep abreast of currency market developments and the views of market participants. The models involving fractal theory focused on very short-run dynamics of market prices and might be useful to those trading on a short-term basis. However, the issues driving short-run market dynamics and technical trading were not the proper basis for the type of assessments that the Fund staff and management wished to reach and discuss with the Board and with national authorities. Keeping abreast of the technical trading literature—and of the variety of estimates, based on different techniques, of equilibrium exchange rates in the academic and market literatures—remained useful and worthwhile, although the staff did not necessarily subscribe to all new theories and techniques.

It was characteristic of all organized asset markets that the volume of trading was a large multiple of the volume of underlying economic transactions, the Economic Counsellor continued. That was true not only in the foreign exchange market—where a trillion or two trillion dollars was transacted every day to effect final goods markets and capital markets transactions that represented only 1 percent of that trading—but also in the stock market and on the futures exchanges. Even in the money market—at least judging by the figures from the New York Federal Reserve on the transactions velocity of circulation of money—the turnover of cash balances was 300 times larger than annual GDP. The increase in the velocity of transactions in recent years could be attributed to technology advances that had reduced transactions and communications costs. The motivation behind all the transactions was an interesting issue not fully understood in the academic literature. Rather than being confined to the foreign exchange market, it represented a general phenomenon.

The staff representative from the Policy Development and Review Department commented that the difficulty of estimating potential output was one of the complicating factors in the application of the CGER methodology to emerging market economies, which were characterized by rapid structural change.

The question of what results the CGER approach would have yielded for Southeast Asia was interesting, the staff representative continued. It could be noted that, for example, in the case of Thailand, the staff and the Board had no difficulty coming to the conclusion that the exchange rate needed adjustment, even without employing the CGER framework. That served to underline the fact that the CGER framework constituted only an element that could be helpful in an analysis but would never replace the judgment based on a comprehensive economic analysis in the context of surveillance. The 1995 CGER analysis of major international currencies could make a contribution to an analysis of the subsequent developments in Southeast Asia. It appeared that the dollar-yen constellation had played an important role in shaping the economic environment of Southeast Asian economies.

The applicability of the CGER approach was not without limits, the staff representative added. For example, in the case of a currency board a judgment on the appropriateness of policies was likely to be of greater relevance because an exchange rate adjustment was not a preferred option. Neither was the CGER approach, with its wide confidence bands, likely to be well suited for a calculation of the appropriate conversion rates under EMU.

Mr. Daïri inquired whether the threshold of 10–15 percent had been selected based on experience that misalignments of that magnitude had subsequently been reversed through market dynamics without policy changes.

The staff representative from the Research Department replied that the threshold was based in part on calculations of the implications of the uncertainty in the saving-investment model for the uncertainty in the estimate of the equilibrium exchange rate under the assumption that the trade equation model contained no uncertainty. The calculations suggested that the width of a 50 percent confidence band around the equilibrium exchange rate would be roughly plus or minus 7½ percent for most of the G-7 countries, and somewhat wider for Japan and the United States because their economies were less open.

The Acting Chairman noted that there appeared to be general agreement that the paper on the CGER methodology should be published, although some concern had been expressed in regard to some of the examples. It had been suggested that for those cases where management had spoken out on exchange rates—in 1995 and 1997—the underlying exchange rate assessments could be made public. The other cases featured in the paper which represented purely internal assessments that had never been made public—such as the Italian example—should be excluded from the published version.

Directors expressed agreement with the suggested approach.

The Acting Chairman, in response to a question from Mr. Donecker, said that the paper would incorporate some additional comments made in the Board discussion.

Mr. O'Donnell indicated that he favored a technical annex that would make all technical issues clear.

The Acting Chairman agreed that it would be a useful addition.

Mr. Sobel wondered whether the Fund would publish regular assessments of the appropriateness of exchange markets, for example, at the time of the World Economic Outlook. In that respect, the relative weights of the formal framework and the subsequent judgment in generating the results should be more clearly delineated.

The Acting Chairman replied that the Board discussion had revealed that opposition to publication of current exchange rate assessments was stronger than support for it. Hence, a decision to publish the paper would not imply publishing similar assessments on a regular basis. The balance between the formal model results and judgment in regard to their impact on the results of an exchange rate assessment needed to be clarified. In its initial stages, the analysis was model-driven, but the final conclusions were based on judgment following a staff discussion on interpreting the model results.

The Acting Chairman made the following concluding remarks:

> Executive Directors welcomed the opportunity to discuss the methodology of exchange rate assessments and its application in Fund surveillance over major industrial countries. Directors emphasized that the Fund, as the central institution of the international monetary system, must continuously seek to strengthen its analysis and surveillance over exchange rate policies. It was observed that the Fund has the advantage of a global perspective and blend of technical expertise and practical policy experience that enables the staff to add value in advancing the analytical framework and making judgments on exchange rate issues. In that context, the need for cooperation with academia was noted.
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> Policies of the major industrial countries and countries with systemically important currencies have important spillover effects on other countries. A key aspect of the Fund's role in its assessment of exchange rates of major industrial countries is to contribute to the consideration of the external dimension and effects of these policies. At the same time, Directors emphasized that Fund staff should continue to give high priority to its operational and research work on exchange rate issues for other countries, particularly to a continuous assessment of exchange rates and exchange arrangements of emerging market economies.
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> Directors encouraged efforts to further strengthen the macroeconomic balance methodology used by the Coordinating Group on Exchange Rate Issues (CGER). They emphasized the importance of continuing to view this as an approach that complements, rather than substitutes for, the various measures of international competitiveness and financial market conditions that also have traditionally played a major role in the Fund's surveillance over members' exchange rates and exchange rate policies. Directors generally agreed that it was impossible to be precise in identifying "equilibrium" values for exchange rates, and that point estimates of notional equilibrium rates should generally be avoided. Nevertheless, Directors agreed that a rigorous, systematic, and transparent methodology was important to underpin the Fund's surveillance. They generally regarded the CGER framework as a useful starting

point for judging the appropriateness of prevailing exchange rates in the context of a broader range of macroeconomic considerations and as a basis on which the staff's judgment could be applied to produce a final assessment of exchange rate constellations.

Directors emphasized that in discussing exchange rate misalignments it was important to take into account the broader macroeconomic context. It was essential to consider the appropriateness of exchange rates against the background of prevailing cyclical positions and the attainment of overall macroeconomic objectives. In that context, Directors observed that deviations of exchange rates from their medium-run equilibrium levels may be warranted even helpful in cases where the cyclical positions of major industrial countries diverge. For these reasons, Directors emphasized that it was important to take a case-by-case approach in considering what, if any, actions need to be taken when exchange rates appear to deviate substantially from their medium-run equilibrium values.

Many Directors felt that the current CGER approach could usefully be applied more broadly to other Fund members that also have systemic regional importance and that enjoy access to international capital markets. However, some Directors recognized that various complications, including data deficiencies and diversity of economic conditions, may limit the applicability of the CGER framework to emerging and developing economies. They encouraged the staff to continue to refine their approach to exchange rate assessment for these economies.

Directors noted that the analytical framework had been helpful in promoting more candid and focused discussions of exchange rate issues in the context of Article IV consultations. A few Directors thought that a more public posture of the Fund regarding its views of major exchange rates could be considered, but most Directors felt that the current approach had struck the right balance that is, that staff and management should continue to present their quantitative assessments carefully and refrain from premature public judgments about exchange rates. A suggestion was made to make publicly available on a regular basis possibly in the World Economic Outlook the Fund's estimates of equilibrium exchange rates, but I do not believe there is a sufficiently broad consensus on that in the Board.

Many Directors suggested that it would be useful to publish the staff paper prepared for the Board discussion, focusing on the methodology and supported by the necessary technical annexes, and taking into account today's discussion. On that basis, I suggest the staff proceed to edit the paper for publication in the Fund's series of Occasional Papers.

REINHARD H. MUNZBERG
Secretary