

Summary of Proceedings

Concluding Workshop on RETA 5869
Strengthening and Collection of Financial and Monetary
Statistics in Selected Developing Member Countries (DMCs)
16 -18 May 2001
ADB Headquarters, Manila



Statistics and Data Systems Division
Economics and Development Resource Center
Asian Development Bank

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TABLE OF CONTENTS

Background and Introduction	1
Summary of Workshop Sessions.....	1
Inaugural Session	1
Functional Sessions.....	3
Working Groups Sessions	10
List of Commonly Agreed and Additional Indicators.....	12
Commonly Agreed Indicators.....	12
External Debt and Financial Flows.....	12
Money and Credit	12
Banking.....	13
Interest Rates.....	14
Stock Markets and Bonds.....	14
Trade Exchange and International Reserves	15
Business Survey Data (Manufacturing, Construction, Trade, Services).....	15
Additional Indicators	16
External Debt and Financial Flows.....	16
Money and Credit	16
Banking.....	16
Interest Rates.....	16
Stock Markets and Bonds.....	16
Business Survey Data (Manufacturing, Construction, Trade, Services).....	17
Supervisory Surveys	17
Additional Topics from IMF Indicator List.....	17
Others.....	18
Annex 1	19
Agenda.....	19
Annex 2	23
Interpretation of ADB Macroprudential Indicators	23
Directory of Participants	27
A. Country Participants	27
B. Resource Persons.....	29
C. International Organizations	29
E. Observers.....	30
F. Workshop Secretariat	31

Background and Introduction

The high social costs caused by the recent Asian financial crisis affecting governments, economies at a whole, and particularly the poor led to intensified efforts in theoretical research and applied politics to prevent future financial crisis or at least minimize their negative effects. There is general agreement that the past crisis was influenced by a lack of timely, frequent, easily accessible, and sufficiently disaggregated statistical information.

The availability of additional statistics and a key set of crisis monitoring indicators could play a significant role in addressing the vulnerability of asset and financial markets and thus significantly reducing the risk of crisis recurrence. Therefore, ADB had decided in early 2000 to provide Regional Technical Assistance (RETA) on "Strengthening and Collection of Financial and Monetary Statistics in Selected DMCs". RETA 5869 included five DMCs, namely Fiji, Indonesia, Philippines, Thailand and Viet Nam. In addition Taipei,China joined the project on its own and participated fully in the program. Observers (footnote)

In the inception workshop held in April 2000 at the ADB headquarters, a list of 67 indicators was agreed which were to be included in a harmonized financial and monetary monitoring system. An additional 43 indicators were identified as highly recommendable as components of the indicator system (the list of indicators at the end of this text). Review missions and consultations by Email and Fax in the past 13 months were undertaken to ensure that each of the participating countries set up the system of the commonly agreed 67 indicators and as many as possible of the 43 additional indicators. The results of these joint efforts were presented and discussed at the concluding workshop held from 16-18 May 2001 at the ADB Headquarters, Manila (Agenda attached as Annex 1).

The concluding workshop was attended by 13 participants from six countries namely; Fiji, Indonesia, Philippines, Taipei,China, Thailand, and Viet Nam. There was one representative from the IMF, one from the European Central Bank, eight from the ADB (including an ADB consultant from IFO Institute, Germany), one from the University of Asia and the Pacific, and five observers from the Ministry of Finance, Viet Nam, the Ministry of Economy and Finance, Cambodia, the Ministry of Finance and Revenue, Myanmar, the Bangko Sentral ng Philipinas, and Regional Monitoring Unit (REMU), ADB.

Summary of Workshop Sessions

Inaugural Session

At the inaugural session of the workshop Mr. Charles Adams, ADB Senior Economic Adviser and acting Chief Economist, stressed the importance of this RETA by underscoring the need of strong and sound statistical data, particularly monetary and financial statistics. He stressed in particular the forward-looking character of indicators needed for an early warning system. However, he tempered somewhat the belief that a mechanistic approach of monitoring a given set of indicators will be sufficient to avoid future crisis. A flexible and analytically well founded approach appears to be necessary as the causes of future crisis may change.

Also Mr. Bishnu Dev Pant, Officer-in-Charge of Statistics and Data Systems Division (EDSD), ADB stressed in his statement the importance of a sound and up-to-date statistical data base to monitor on a regular basis in short intervals (at least quarterly) the performance of the economies and in particular the financial markets. He emphasized the need to streamline the huge amount of indicators in the future by identifying a core set of leading indicators and constructing composite indicators to facilitate the analysis.

Mr. Biswanath Bhattacharyay, ADB, Project Officer-in-Charge and Workshop Coordinator, summarized in his opening statement the aims of this RETA. The main objective of the RETA was to strengthen the institutional capacity of central banks (CBs) of the selected DMCs by helping: a) identify the new demands for monetary and financial statistics raised by the crisis; b) specify a set of key financial and monetary indicators that can be used to monitor the asset and financial markets; c) produce these additional statistics and indicators; and d) disseminate these through print and electronic media. Furthermore, the RETA should attempt to improve the timeliness of the availability of existing and the above new statistics and indicators to ADB from CBs. Eventually, these statistics will be integrated into ADB's statistical database system (SDBS) and published in ADB's web site and hardcopy publications thereby making them widely and easily accessible to users.

He stressed the relatively tight schedule of the project. Within 13 months the participating DMCs managed to set up their indicator systems, even in Fiji where political events jeopardized the project for almost five months. The results achieved are very remarkable and hopefully constitute the nucleus of an effective economic and financial warning system in the region as a whole.

The objectives of the concluding workshop were as follows:

- (i) present and discuss the country compendium on commonly agreed MPIs as per the conclusion of the Inception Workshop as well as provide an analysis of the indicators;
- (ii) discuss the various approaches and methodologies used in producing the MPI's and the problems and issues encountered in generating them;
- (iii) appraise participants on the appropriate analysis and interpretation of the indicators and the usefulness of composite indicators for monitoring the asset and financial markets; and
- (iv) provide recommendations and share the countries' future plans on compiling, analyzing, interpreting, and disseminating MPIs and other activities related to the monitoring of the vulnerability of the asset and financial markets.

Mr. Bhattacharyay presented a paper on " Strengthening and Harmonization of Macroprudential Indicators for Monitoring Financial and Asset Markets in Asia and Pacific". Some of the general problems and issues in compilation and analysis of MPIs were:

- Spread of data in various databases within and outside Central Bank

- Non-availability or non-applicability of some indicators
- Incomparability of indicators over time
- Lack of transparency and problems in the disclosure of data
- Late/incomplete/inaccurate replies from other institutions and agencies
- Need for professional/institutional judgement for interpretation of MPIs
- Limitations in inter-country comparisons of MPIs
- Harmonization of MPIs
- Early warning capability of MPIs
- Capacity Building
- Benchmark/threshold levels
- Composite Indicators.

He also presented some topics for group discussion in the area of compilation and dissemination, analysis and interpretation, dissemination of MPIs, monitoring vulnerability and regional and inter-regional cooperation. The above problems issues would be dealt with in the concluding workshop

Functional Sessions

The operational workshop started in the second session with the presentations by the countries on their achievements setting up the commonly agreed set of indicators and assessing the performance of these indicators in the time span 1995 up to now which allows to draw conclusions of the suitability of these indicators to signal the outbreak of the past financial crisis and to monitor the following recovery process.

Mr. Charles Adams, Senior Advisor, ADB; Mr. Gunter Hecker, Chief, Philippines Country Office (PhCO), ADB, as well as Mr. Brahm Prakash, Assistant Chief Economist, ADB acted as moderators for the country presentations.

According to the presentations of the representatives of all five DMCs participating in the RETA plus Taipei, China, the build-up of the agreed database went relatively smoothly despite the involvement in each country of multiple organizations outside the central bank. Only part of the necessary data is collected directly by the central banks.

Almost all of the agreed 67 harmonized indicators and a significant proportion of the additional indicators proposed at the inception workshop were delivered by the participating countries. Also with regard to the frequency countries mostly fulfilled the requirement of quarterly or – even better – monthly reporting. Only in the case of Viet Nam were quarterly or monthly data not yet available in many cases. However, Viet Nam plans to introduce this year quarterly national accounts and also quarterly Business Trend Surveys (BTS), which should help to close the gap of short term data in the near future.

In some cases, participating countries did not follow exactly the definitions laid out in the harmonized Metadata. However, in cases of deviations, this was made explicit. A list of the harmonized indicators supplemented with country-specific modifications of the Metadata was distributed.

In some cases (e.g. Fiji), year-to-year rates of change were applied instead of quarter-to-quarter rates as proposed. The reason for this lies mainly in strong seasonal movements of some series resulting in strong variations of the quarterly rates of change. Nevertheless, it was agreed to stick to quarterly changes because they capture better than annual changes the dynamics of short-term developments of a series. However, in the future seasonal adjustments – where appropriate – should be applied help to smoothen these changes (see section: Workshop recommendations).

The economic assessment of the newly established set of indicators needs further development. Nevertheless, the possibilities to detect warning signals much clearer with such a system were cited, particularly in the presentations by representatives from Fiji, Thailand and Taipei, China. For example, in the case of Taipei, China indicators like foreign reserves and external debt are in much better shape than before the past Asian crisis in 1997/98, but indicators related to internal demand are giving worrying signals. Growth of M2 money supply is very weak and close to the lower limit of the indicator; also growth of loans and investments of domestic banks is very feeble signaling danger of a recession in the real sector in the economy, which could have negative consequences on the credit portfolio structure of the banks. Thus, more expansionary measures via monetary and fiscal policy appear to be appropriate.

It was generally proposed by the presenters of the country reports that in follow up activities emphasis should lie on the interpretation of these indicators in form of annual reviews of current stability conditions in the light of the collected indicators and how the regional economy will be affected. In this context, thresholds for the different indicators could be elaborated to enable better economic analysis of the data. Also the construction of composite indicators may help to facilitate the economic analysis (see section: Group Discussion).

The second day of the workshop was mainly devoted to international experience with macroprudential indicators. The sessions were chaired by Mr. Russell Krueger, IMF; Mr. Praudumna B. Rana, ADB; and Mr. B. Bhattacharyay, ADB.

Mr. Russell Krueger presented an update of the MPIs in the Fund's Survey on the Use, Compilation, and Dissemination of Macroprudential Indicators and compared them with the ADB's list of MPIs. Generally speaking Mr. Krueger stressed that MPI research is a relatively new field and there does not exist a set of indicators which can be regarded as optimal at this stage. Therefore, he proposed that the ADB should stick for the time being to its list of 67 commonly agreed indicators and the set of voluntary additional indicators and gain experience in using this information as an analytical tool before changing the list of indicators. Thus, the deliberations of IMF concerning the list of MPIs should be seen more as a background information than as a cause for changing the current list of indicators.

In the category "External Debt and Financial Flows" of the ADB list of MPIs it might be useful to have in addition indicators on the servicing of debt, that is, the interest cost and repayment schedules. Moreover, in the longer run, information on the

foreign currency component should be included because it can be volatile and strongly affect debt repayments. Also, use of residual maturity of debt might be advisable, as well as a breakdown of debt by to sector of borrower.

With regard to the second category "Money and Credit" the significance of traditional money supply aggregates like M1 or M2 might be impaired by innovations in financial markets that have created many close substitutes for monetary instruments. Thus, according to the Fund, a broad empirically based monetary base designed according to each country's institutional and financial market conditions special needs may be the most appropriate approach though this might impede somewhat international comparisons. Also, it should be empirically determined if foreign exchange deposits and foreign currency in circulation in an economy should be included in the monetary aggregates. For example, this approach is followed by the European Central Bank which is applying an all- currency approach.

With regard to the other categories (Banking, Interest Rates, Stock Markets, and Bonds, as well as Trade Exchange and International reserves) no additions or changes were recommended by the Fund. Finally two other points were raised by Mr. Krueger: The problem to construct US\$ denominated stock price indices (indicator number 46: Composite Stock Price Index in US\$) can be solved easily by dividing the stock price index in national currency by the US% exchange rate. The capital adequacy ratio (indicator 20) should be better included under the heading "Banking" than under the heading "Money and Credit". The same holds true for indicator number 21 (Liquidity Ratio in %).

With regard to the proposed additional indicators, analysts at the Fund have strongly recommended to put more emphasis on the financial condition and profitability in the private sector as this can quickly and strongly affect the quality of loan portfolios of banks. However, worldwide, such data are difficult to compile, not timely, and are often revised heavily. For that reason, in the discussion it was pointed out that business surveys can provide very good proxies for profit trends. This is one of the great advantages of business surveys that supports their use within early warning systems.

Another important indicator is the so-called coverage rate which is calculated as earnings of corporations before interest and taxes compared to interest and principal expenses. Here again business survey results may provide very useful up-to-date proxies. An alternative to indicator number 35 of the additional list of ADB MPIs (Rate of Growth of New Depository Corporations) is the change in the number of all depository corporations (new or old) with subgroups "due to merger and acquisitions" and "due to closings of institutions under stress, e.g. losing their license).

After these more technical remarks concerning the IMF and the ADB approach to collect MPIs Mr. Krueger gave a brief summary report of the MPI activities at the Fund. In the past Fund's monitoring activity has traditionally been concentrated on external conditions and macroeconomic policy concerns of its member countries, giving less attention to the review of the stability of financial sector.

In 1996, the IMF study *Financial Soundness and Macroeconomic Policy* documented the important role of financial sector soundness to the overall macroeconomic environment and proved instrumental in changing the focus of IMF work to emphasize financial soundness. The study found that financial crisis or near crisis

during the 1980's and early 1990's had been very common and were often deep and costly. Public losses were large, governments incurred large fiscal costs dealing with crisis, and execution of monetary policy was often impaired. The subsequent Asian crisis painfully reinforced many of the conclusions of the study.

The change in perspective affected both IMF surveillance and statistical policy. Regular Article IV surveillance of IMF member countries expanded coverage of the financial sector, including listing a number of types of information that could be useful in analysis of the sector. Subsequently, the joint IMF/World Bank Financial Sector Assessment Program (FSAP) was created in which countries volunteers for comprehensive, in-depth reviews of their financial sectors. About two dozen assessments are now being done each year, and it is hoped that ultimately all countries will participate. MPIs are an integral part of the program and it is possible that systematic collection of MPIs will become a part of the FSAP.

The statistical changes also have been large. The IMF began work in three statistical areas identified as important in the history of the Asian crisis – a template of information on country's international reserves and drains on holdings of reserves, the compilation of more information on external debt, and macroprudential indicators (MPIs), which focused on the availability of timely and useful information on financial sector conditions.

The work on MPIs began about two years ago after work in the other two areas was well underway. This was a largely new area of inquiry and information on the potential scope of the project and priorities in the field was drawn from the experiences with Article IV surveillance of IMF members and the views of public and private experts in the field who were convened in a meeting in September 1999 at the Fund. The meeting concluded that the work on MPIs was important, but that at the stage on development of the field at that time, there was no consensus on conceptual models to use or the types of data needed. Participants called for further conceptual and empirical research and recommended a survey be undertaken of needs for MPIs and compilation and dissemination of MPIs. The IMF Executive Board subsequently endorsed these conclusions.

Research on the design of the survey was undertaken in Spring 2000, which included extensive consultations with international organizations, central banks and supervisory authorities, and the private sector, as well as participation in the April 2000 meeting of this group. The survey was designed to help in identifying a small, feasible set of MPIs to meet the needs of national authorities, the Fund, and the public; assessing national practices and international best practice in compiling and disseminating MPIs; and evaluating whether the SDDS or other modalities were most appropriate to encourage the public dissemination of MPIs and macroprudential information.

The survey was undertaken in mid 2000. The structure of the survey and the mechanics of distributing the survey via national central banks also to specialists outside the central banks and collecting responses were described. The rate of response to the survey was about 75% and far exceeded expectations, which can be taken as an indication of the importance attached globally to issues of financial stability and to the possible role of MPIs in assessing the condition of the financial sector.

The wide range of information collected revealed areas of strength and weakness in the compilation and dissemination of MPIs, and helped in identifying a set of MPIs that are rated as highly useful by a broad range of respondents and appear feasible to compile in a wide range of countries. It was not possible to provide detailed information on the results of the survey until after deliberations by the IMF Executive Board. However, it was indicated by Mr. Krueger that there was near consensus on the importance of the several types of MPIs, such as capital adequacy, non-performing loans and provisioning, and bank profitability. The survey results would be considered along with analytical needs to develop of specific recommendations on compilation and dissemination of MPIs.

In total, based on this survey about 15 indicators were assessed as very important and about another 25 as also important. (A publication of the findings of the survey and the Fund's conclusions concerning MPIs were published on the web in July 2001.) As the Fund's priorities increasingly emphasize crisis prevention and early warning systems, it can be expected that MPIs will play a more prominent role in the Fund's priorities than in the past.

In the meantime, adoption by countries of the new standards in the *Monetary and Financial Statistics Manual* can be encouraged because numerous MPIs can be drawn from the sectoral balance sheets framework employed in the Manual. Moreover, there are existing national and international infrastructures for monthly compilation of monetary statistics, which is important for rapid development of the MPIs.

At the time of the meeting, the direction of future work by the IMF was uncertain, pending Board decisions. Further IMF contributions to the ADB project are uncertain, but the type of effort being undertaken by the ADB and the participating countries is what the IMF hopes will happen. Moreover, the statistical foundation being laid at this meeting and the work being undertaken on early warning systems (EWS) would contribute to the codevelopment of a regional analytical infrastructure for the analysis of financial stability issues that could help build a stronger financial sector and possibly avoid future problems.

Recent policy statements by the international community are continuing to highlight the importance of projects such as the ADB's. Work on strengthening the financial sector and the development of Early Warning Systems (EWS) are now among the IMF's highest priorities. Work of the Financial Stability Forum (FSF) and the Basle Committee on Banking Supervision's new Capital Adequacy Accord with its emphasis on building of market discipline through a broad range of disclosures can be cited as two further manifestations the new priorities and the important role of statistics in the process. The ADB project dovetails very well with such priorities

Finally, some features of various methods of organizing and transmitting MPI data for dissemination purposes were briefly discussed, including Excel, GESMES/CB used by the European Union, HTML, and XML. The XML internet language makes use of tags for individual data items that could be useful for flexible compilations of macroprudential information from diverse sources in multiple countries. The IMF is establishing a working group on an EDML (Economic Data Mark-up Language) based on XML technology, in which the ADB and countries in the RETA were invited to participant.

Mr. Juzhong Zhuang from the Regional Economic Monitoring Unit (REMU) of ADB informed participants about the aims and activities of REMU. There appears to be general agreement that surveillance systems at the global level (in particular IMF) and at the individual country level are not sufficient. The regional and sub-regional levels become more and more important mainly due to contagion effects. One of the main REMU activities linked to this RETA project is the Asia Recovery Information Center (ARIC), a web-based clearinghouse of information on Asia's recovery from the 1997 financial crisis. The ARIC web-site currently covers Indonesia, Republic of Korea, Malaysia, Philippines, and Thailand.. Differently from the approach followed in RETA 5869 ARIC does not rely on harmonized data collection directly from the central banks but draws information from existing web-sites of different providers of information. Thus, the two approaches of RETA 5869 and ARIC appear to be complementary in the way that ARIC can use the harmonized data set provided by the RETA participants and take this information – possibly condensed in form of composite indices – and enhance the analysis and the authenticity of the ADB approach in monitoring.

Mr. Marcel Fratzscher, European Central Bank stressed the importance in forward looking data in the context of financial early warning systems as experience has shown that many of the structural data like foreign debt exposure and real exchange rates give ambiguous signals. Thus, he prefers forward rates in the capital markets and the development of sovereign spreads (i.e. the difference in interest rates government bonds denominated in one currency, e.g. US\$, yield in different countries). However, it was noted in the discussion that this approach is often limited in developing and emerging markets as the capital markets are as a rule underdeveloped or illiquid, which impedes the usefulness of interest rates spreads as measures of market conditions.

Thus, in conclusion Mr. Fratzscher recommended a broad set of indicators that is flexible enough to capture originating financial crisis regardless from which side they were primarily caused. He pointed out that financial health and stability depends mainly on four groups of factors (domestic, international, real, and financial). According to him, the Asian crisis had mainly a external financial origin (Balance of Payment Crisis) which spread to a Banking Crisis and then to the real sector (Recession) ending via contagion effects in an International Systemic Crisis. In a next crisis this pattern may change. Thus, a flexible indicator approach for monitoring financial stability is necessary.

Mr. George Manzano from the University of Asia and the Pacific, Philippines, emphasized the importance of the regional dimension of the surveillance process and the need for more openness in providing information on important economic and financial issues In the same lines as Mr. Zhuang , he argued that before the outbreak of the Asian crisis not much of surveillance was going on at the regional level. The focus was on the one hand on the international perspective (IMF) and on the other hand on national aspects. Due to the regional gap in financial monitoring spillover effects were not sufficiently captured. It was underestimated that contagion has a strong regional scope. Also, information disclosure was generally poor before the crisis. However, the effectiveness of crisis prevention depends strongly on more transparency. If countries do not disclose information international financial market investors keep on guessing. If there are unpleasant surprises in one country herd behavior sets in with negative effects for the whole region. More information would allow financial investors to discriminate between markets that would reduce spillover effects.

Mr. Marcel Fratzscher from the European Central Bank, Germany, started his presentation with a literature review showing that many economic models may be relatively successful in explaining ex-post financial crisis but not in forecasting them. The starting point of his research was the experience that crisis cluster at certain times and are more severe than traditional econometric models signal. The explanation for these effects is according to him strong contagion effects. For the practical work with MPIs the conclusion is that not only indicators of neighboring countries should be monitored but also in addition also those of important trading partners irrespective of physical distance. Moreover, due to the overwhelming importance of the big players in the world economy also leading indicators for the USA, Europe, and Japan should be included in an early warning system.

Mr. Gernot Nerb, ADB consultant, presented a paper prepared jointly with B. Bhattacharyay, ADB on the selection of core leading indicators for monitoring asset and financial markets. The main purpose of the paper was to attempt to select the most relevant indicators out of the group of 67 generally agreed indicators. The usual procedure for doing this would be first to take out seasonal influences where necessary and establish a benchmark in order to measure the lead time of the indicators under consideration. However, due to the shortness of data both was not possible. Thus, the preliminary selection was based on a graphical inspection of all 67 time series for each of the six countries participating in the project – provided quarterly or monthly data for the specific series were available. Special emphasis was laid on the performance of the series in early 1997, i.e. before the financial crisis set in, in the second half of 1997 and the first half of 1998, i.e. during the main brunt of the crisis and after the second half of 1998, i.e. in the beginning recovery phase. This procedure helped to identify 22 series which appear to be particularly promising to be leading indicators within an early warning system. For each of these 22 series a short theoretical foundation of the found lead is added. The selected 22 indicators are:

Money and Credit — M1 Growth (%); M2 Growth (%); Central Bank Credit to Banking System; M3 Growth (in %); Domestic Credit Growth (in %); Credit to Private Sector (in % of GDP).

Banking — Net Bank Profits (in % of total assets); Total Bank Loans (in % of total assets); International Borrowings with Maturities one year and less (Mn US\$); Real Estate Loans.

Interest Rates — Money Market Rate/Inter Bank Rate

Stock Markets and Bonds — Composite Stock Price Index; Market Capitalization (in % of GDP); Stock Price Earning Ratio.

Trade Exchange and International Reserves — Real Effective Exchange Rate; International Reserves.

Business Survey Results — Current Business Situation; Expected Business Situation (next six months); Stocks of Finished Products; Employment (present situation); Financial Situation (present situation).

It has to be kept in mind that this approach is very rudimentary and should be replaced in a later stage by methods proposed above, which however will take some

time as for this purpose (application of statistical methods like seasonal adjustment, factor analysis etc.) longer time series are necessary. Another approach to streamline the informational content contained in the multitude of series might be to use all 67 indicators and construct composite indicators for each of the seven categories, i.e. one composite each for "A) External Debt and Financial Flows; B) Money and Credit; r C) Banking; D) Interest Rates; E) Stock Markets and Bonds; F) Trade Exchange and Reserves; and finally G) Business Survey Data ". For the time being, it is proposed to collect and publish all 67 indicators and put special emphasis in the analysis on the 22 selected indicators which appear to show a better leading performance than the other ones.

The final sessions on the third day of the workshop dealt with a technical paper on the role of Business Trend Surveys (BTS) within MPI, the results of the group discussions and the concluding remarks was chaired by Mr. Bhattacharyay.

Mr. Nerb, ADB consultant and director of the business survey research at the IFO Institute in Germany, started his presentation on the use of BTS within the framework of MPIs with a brief review of the history of BTS, which have spread in the past 50 years to more than 50 countries. One of the main reasons of the success of these surveys is their ability to capture current and future profitability trends in the corporate sector. As it is well known since the studies of Mitchell and others, profit expectations are the driving force in the business cycle influencing investment-, employment-, and production trends to give only a few examples. This ability makes BTS also very valuable as a component within MPIs. As has been mentioned by the IMF representative during this workshop the quality of the loan portfolio of commercial banks can be affected very quickly and strongly if profitability in the corporate sector deteriorates.

All countries participating in RETA 5869 conduct already business surveys or are in the process of introducing them, which will help to get more leading indicators in the MPI framework. Due to the qualitative nature of the questions the necessary survey size can be relatively small to get statistically meaningful results. Details of BTS related questions are dealt with in a separate RETA.

Mr. Biswanath Bhattacharyay, Project Officer in Charge, ADB presented a brief review of economic literature on selected MPIs. These findings which may be helpful for the analysis and interpretation of indicators is attached (Annex 2).

Working Groups Sessions

To achieve the objective of the workshop, participants were split into two working groups and were tasked to prepare proposals on the compilation, dissemination, analysis and interpretation, and future co-operation. Mr. Bhattacharyay distributed a format (guide questions) for the topics for group discussion to each country. The results of group discussion on the above selected topics prepared by the country groupings and individual country work plans prepared by the participants were presented and discussed. Messrs. Krueger and Fratzscher were the facilitators for the group discussion.

The working groups came up with these main results:

- a) Countries should receive from the ADB two types of templates, a monthly and a quarterly one. For each type of template a deadline has to be set until when data have to be submitted via Email to ADB. The number of indicators – particularly those with monthly periodicity – will vary from country to country. Preliminary data should be notified, e.g. with the symbol (p). Revisions should be made available as soon as possible.
- b) An agreement will be signed with all participating countries to submit the MPIs on a regular basis to ADB and to put them on the ADB web-site.
- c) In cases of ratios (e.g. in % of GDP), it is possible to publish only the nominator in cases the respective denominator is not yet available or does not exist on a monthly basis. However, this has to be explained in the metadata.
- d) The submitted indicators will be published on the ADB web-site in form of graphs and figures.
- e) It is the prerogative of the national central banks to put the all or part of the submitted indicators on their own web-site and supplement them possibly with other indicators.
- f) A fully harmonized method or approach for analysis and interpretation is of the project not possible at this stage. Each national authority is free to comment on their own indicators, but should refrain from a public interpretation of other countries' MPIs. The ADB will add only technical notes to the graphs and figures, but will put no analysis of the results on the web-site. At a later stage, the ADB may move in regional analysis of data and could have a committee of national participants supporting this work.
- g) It was generally agreed that seasonally adjusted data (where applicable and possible) should be used because year-to-year comparisons reflect turning points with a lag. In cases of ratios, it might be useful to apply seasonal adjustment separately to the nominator and denominator. However, it was stressed that as a rule 5 to 6 years of data are needed for seasonal adjustment. Bad adjustment make things worse; in this case working with the original data is preferable.
- h) The topics of a possible technical workshop might be: 1) Construction of Early Warning Systems (EWS); 2) construction of composite indicators (including multivariate analysis, e.g. factor analysis); 3) Seasonal adjustment; 4) Experience with Real Estate data and asset prices data; 5) Identification of benchmarks and thresholds.

Mr. V.N. Gnanathurai, Assistant Chief Economist and new manager of the Statistics and Data Systems Division (EDSD), ADB stressed in his concluding remarks the great importance of the project which should be continued. Thus, he outlined some possible follow-up activities which should focus on gaining more experience with the set of commonly agreed indicators and application of statistical methods like the technique of composite indicators in order to condense the informational content of the series and thus to facilitate the interpretation. ADB will put the commonly agreed indicators on its web-site and plans to extend the coverage of countries participating in this project, particularly by including the big players in the region like the People's Republic of China,

India and South Korea. He encouraged the participants of the workshop to give feedback for the next phase of the workshop.

Remarks by Mr. Bishnu Dev Pant, ADB, followed. He expressed his appreciation on the successful completion of the deliberations and his hope of the continuation of the project. He took note of the cooperation of other international organizations like the IMF and the ECB in strengthening the transparency of the international financial system, stressing that efforts in the area are proving to be very successful and must be continued. He also spoke on how the workshop served as venue for countries, whether developing or developed, to learn from each other's experiences. He underscored the need for the mutual exchange of ideas to be continued during the entire project. In closing, he thanked all participants and organizers for the success in accomplishing the objectives of the workshop.

The workshop concluded by recap of activities, summary of proceedings and follow-up activities by B. Bhattacharyay. He stressed once more the importance of accurate national metadata and asked the country representatives to notify users of differences from the general definition. Finally he announced that ADB will send a formal request for monthly respectively quarterly update of available MPIS for each participating country. These data will be integrated into ADB statistical database and will post to ADB-RETA web-site.

List of Commonly Agreed and Additional Indicators

Commonly Agreed Indicators

External Debt and Financial Flows

1. Total Debt¹ (% of GDP) – ratio of total debt on nominal GDP.
 - a. ...of which public debt
 - b. ...of which private debt
2. Long Term² Debt (% of total debt) – ratio of long term debt to total debt.
3. Short Term Debt (% of GDP) – ratio of short-term debt to nominal GDP.
4. Short Term Debt (% of total debt) – ratio of short-term debt to total debt.
5. Foreign Direct Investment (% of GDP) – ratio of foreign direct (expressed as flows) investment to nominal GDP.
6. Portfolio Investment (% of GDP) – ratio of portfolio investment (expressed as flows) to nominal GDP

Money and Credit (these data can be drawn from IFS)

7. M1 Growth (%)– percent difference from previous period. M1 are liabilities of the monetary system consisting of currency and demand deposits.
8. M2 Growth (%)– percent difference from previous period. M2 equals M1 plus quasi-money.

¹ As defined in the World Bank, Global Development Finance 2000 on CD-ROM and categorization of maturity according to the remaining maturity instead of original maturity.

² As defined in the World Bank, Global Development Finance 2000 on CD-ROM.

9. Money Multiplier (Ratio) – ratio of M2 to money base. Money base is the sum of currency in circulation, reserve requirement and excess reserves (with the central bank).
10. M2 (% of International Reserves) – ratio of M2 to international reserves.
11. M2 (% of GDP) – ratio of M2 to nominal GDP.
12. M2 to international reserves growth – the growth rate of M2 over international reserves.
13. Quasi money (% of GDP) – ratio of quasi money to nominal GDP.
14. Money Base Growth (%) – percent difference from previous period.
15. Central Bank Credit to the Banking System – Central Bank's credit to the banking system.
16. Growth of Domestic Credit (%) – percent difference from previous period. Consists of net claims from central government, claims on official entities and state enterprises, and claims of private enterprises and individuals.
17. Domestic Credit (% of GDP) - ratio of domestic credit to nominal GDP.
18. Credit to Public Sector (% of GDP) – ratio of credit to public sector to nominal GDP.
19. Credit to Private Sector (% of GDP) – ratio of credit to private sector to nominal GDP.
20. Capital Adequacy Ratio (%) - ratio of total capital on risk weighted assets (threshold value is 8 % meaning that the ratio should not be less than this value). Ratio of Tier 1 + Tier 2 capital to risk weighted assets. Tier 1 capital includes issued and paid-up share capital, non-cumulative preferred stock and disclosed reserves from post-tax retained earnings. Tier 2 capital can include a range of other entities. These are undisclosed reserves that passed through profit and loss account, conservatively valued revaluation reserves, revaluation of equities held at historical cost (at a discount), some hybrid instruments, general loan loss reserves (up to 1.25 % of risk weighted assets) and subordinated term debt.
21. Liquidity Ratio (%) – The ratio of commercial banks' liquid assets to total assets: a) domestic liquid asset ratio and b) foreign liquid asset ratio.

Banking

22. Bank Capital (% of Total Asset) – ratio capital equity including reserves, profits and loss to total assets.
23. Total Asset (% of GDP) – ratio of total assets (as in Monetary Survey without interbank positions) to nominal GDP.
24. Growth of Total Asset (%) – percent growth from previous period.
25. Share of 3 Largest Banks (% of total asset)
26. Net Operating Profits (as % of Average Assets)
27. Loan-Loss Provision (% of Non-Performing Loan) – ratio of loan loss provision to non-performing loans
28. Non-Performing Loans (% of total loan) – ratio of non-performing loans

29. Loans to the Key Economic Sector & (% of Total Loans)
30. Real Estate Loans (% of Total Loans) – ratio of real estate loans to total loans.
31. Total Loans (% of Total Deposits) – ratio of total loans to total deposits (i.e., demand deposits, savings deposits and time deposits.)
32. International liability from Banks with Maturities, Total (Mn US\$) – total international liability from commercial banks.
 - a. short term borrowing
 - b. long term borrowing – more than one year
33. International liability with Maturities, one year and less (Mn US\$) - total international liability from commercial banks.

Interest Rates (mean rate)

(In case of monthly data average of daily rates, in case of quarterly data monthly averages are to be applied)

34. Central Bank Lending Rate (a.o.p.) - end of period; rate at which the monetary authorities lend or discount eligible paper for deposit money banks.
35. Commercial Bank Lending Rate (a.o.p.)/ Prime Rate - average of period; ratio of commercial bank lending rate to prime rate. Prime rate refers to the short and medium term financing needs of the private sector.
36. Money Market Rate/Inter-Bank Rate (a.o.p.)- average of period; rate at which short-term borrowings are effected between financial institutions.
37. Short-term (3 mos.) Time Deposit Rates – interest rates of savings account held in a financial institution for 3 months or with the understanding that the depositor can withdraw only by giving a notice.
38. Long-term (12 mos.) Time Deposit Rates – interest rates of savings account held in a financial institution for 12 months or with the understanding that the depositor can withdraw only by giving a notice.
39. US\$ (international market)/Domestic Real Deposit Interest Rate – unweighted averages of offered rates quoted by at least 5 dealers early in the day for 3-month certificates of deposit in the secondary market.
40. Bond/Treasury Bill Yield (short term) – yield to maturity of government bonds (short-term)
41. Bond/ Treasury Bill Yield (long term) – yield to maturity of government bonds (long-term)

Stock Markets and Bonds

42. Foreign Share in Trading (% of Total Volume of Trading) – proportion of foreign share in trading to total volume of trading.
43. Share of 10 Top Stocks in Trading (% of Total Volume of Trading) – proportion of top 10 stocks in trading to total volume of trading.
44. Composite Stock Price Index (Capital City; in national currency unit) – equity price index of national capital city and expressed in national currency unit.

45. Composite Stock Price Index Growth (Capital City) – percent difference from previous period of equity price index; end of period and based on national currency unit.
46. Composite Stock Price Index (Capital City; in US\$)– equity price index of national capital city and expressed in US\$.
47. Market Capitalization (% of GDP) – ratio of market capitalization to nominal GDP. Market Capitalization refers to the total market value of stocks or shares.
48. Stock Price Earning Ratio

Trade Exchange and International Reserves

49. Export Growth (%) – export growth (fob) percent difference from previous period.
50. Import Growth (%) – import growth (cif) percent difference from previous period.
51. Trade Balance (Mn US\$) – difference between exports (fob) and imports (cif)
52. Current account deficit/surplus(Mn US\$)
53. Exchange Rate (average of period) – national currency unit to the US\$
54. Exchange Rate (end of period) – national currency unit to the US\$
55. Real Effective Exchange Rate – ratio of an index of the period average exchange rate of a currency to a weighted geometric average of exchange rate for the currencies of selected countries adjusted for relative movements in national prices of the home country and the selected countries. Refers to the definition used in the IMF, IFS series.
56. International Reserves (Mn US\$) – international reserves include total reserves minus gold plus gold national valuation.
57. Growth of International Reserves (%) – percent difference from previous period.
58. International Reserves (% of imports) – ratio of international reserves to total imports.

Business Survey Data (Manufacturing, Construction, Trade, Services)

59. Assessment of Current Business Situation
60. Expectations on Business Situation in Next Months/Quarters
61. Limits to Business (Present Situation)
62. Stocks of Finished Products (Present Situation)
63. Assessment of Order Books
64. Selling Prices (Future Tendency)
65. Employment (Future Tendency)
66. Financial Situation (Present Situation)
67. Access to Credit (Present Situation)

Additional Indicators

External Debt and Financial Flows

1. Short Term Debt (% of foreign reserves)
2. Use of IMF credit (% of GDP) – ratio of IMF credit to nominal GDP

Money and Credit (these data can be drawn from IFS)

3. Growth of Currency in circulation (%)
4. M3 Growth – percent difference from previous period. M3 equals M2 plus liabilities of other financial institutions.

Banking

5. Non-Performing Loans (% of Average Assets): simple average of assets over the period
6. Loans to Commercial Real Estate Sector (% total loans)
7. Loans to Residential Real Estate (% total loans)
8. International liability from bank with Maturities, over 1 year and up to 2 years (Mn US\$) - total international liability from commercial banks.
9. International liability from bank with Maturities, over 2 years (Mn US\$) - total international liability from commercial banks.
10. International liability from bank with Maturities, unallocated (Mn US\$) - total international liability from commercial banks.
11. Gini co-efficient of market shares of banks in terms of assets.

Interest Rates

12. Real Deposit Rate (3 mos.) (a.o.p.) - Average of period; defined as the difference between deposit and inflation rate.
13. Real Lending Rate (3 mos.) (a.o.p.) - average of period; defined as the difference between commercial bank lending and inflation rate.
14. Real Lending Rate – Real Deposit Rate (each 3 mos.) – difference between commercial bank lending rate and deposit rate.
15. Real Lending Rate/Real Deposit Rate (each 3 mos.) – ratio of real lending rate to real deposit rate.

Stock Markets and Bonds

16. Gini Coefficient of Market Share of Stocks in Trading – measure of concentration of market capitalization (inequality of market share among the stocks traded during the day). It is the ratio of the actual concentration of total value stocks among traded companies to the maximum concentration.

$$GiniCoefficient = \frac{N+1}{N-1} - \frac{2}{N(N-1)A} \left(\sum_{i=1}^N P_i a_i \right)$$

where:

P_i is the rank of each company in the stock market counting from the top in terms of stock assets or market capitalization

a_i stock asset of i th company

$A =$ total asset or market capitalization of all securities

$N =$ total number of companies listed

17. Turnover in stocks (as % of Market Capitalization)

18. Turnover in Bonds (as % Market Capitalization)

a. Volume of Government Bonds Traded

b. Volume of Corporate Bonds Traded

19. Turnover in Mutual Funds (as % Market Capitalization)

20. Foreign investment in stock by sector

Business Survey Data (Manufacturing, Construction, Trade, Services)

21. Production/Turnover (Present tendency)

22. Production/Turnover (Expected Tendency)

23. Capacity Utilization (Present Situation)

24. Credit Demand by Sector (only for Survey in Financial Sector)

Supervisory Surveys

25. Lending and Credit Standards of Financial Institutions

Additional Topics from IMF Indicator List

(For definition No. 20-38 see IMF Questionnaire)

26. Number of applications for protection from creditors

27. Corporate debt-equity ratio

28. Ratio of Corporate Post-Tax Profits to Equity

29. Ratio of Corporate Debt Service Costs to Gross Corporate Income

30. Corporate Net Foreign Currency Exposure

31. Ratio of Household Total Debt to GDP

32. Ratio of Household Mortgage Debt to GDP

33. Household Debt Owed to Depository Corporations

34. Ratio of Household Debt Service Costs to Household Gross Income

35. Rate of Growth in Number of New Depository Corporations

36. Proportion of Institutions Having License Withdrawn

37. Spreads Between Reference Lending Rates and Reference Borrowing Rates

38. Spreads Between Depository Corporations' Securities and the Rate of Comparable Treasury Securities

39. Spreads Between Depository Corporations' Subordinated Debt Securities and the Rate for Comparable Treasury Securities
 40. Distribution of 3-Month Local Currency Interbank Rates for Different Depository Corporations
 41. Average Interbank Bid-Ask Spread for 3-Month Local Currency Deposits
 42. Average Maturity of Assets
- Others**
43. Real Estate Price Index and Its Growth Rate

**CONCLUDING WORKSHOP ON RETA 5869
STRENGTHENING AND COLLECTION OF FINANCIAL AND MONETARY STATISTICS
16-18 May 2001
ADB Headquarters, Manila, Philippines**

Agenda

16 May, Wednesday

9:00 – 9:30	Registration of Participants	
9:30 – 10:45	Welcome Remarks	Charles Adams Senior Economic Advisor Economics and Development Resource Center (EDRC), ADB
	Introductory Remarks	Bishnu Dev Pant Officer-in-Charge Statistics and Data Systems Division (EDSD), ADB
	RETA 5869: Review of Objectives, Outputs and Accomplishments	Biswanath Bhattacharyay Project Officer-in-Charge, ADB
10:45 – 11:00	Coffee Break	
11:00 – 11:45	Presentation of Country Paper on Compilation, Analysis, Interpretation and Dissemination of ADB Macprudential Indicators (MPIs) Fiji	Moderator: C. Adams, ADB
11:45 – 13:00	Lunch	
13:00 – 15:15	Continuation of Country Paper Presentation: Indonesia Philippines Thailand	Moderator: Gunter Hecker Chief, Philippines Country Office (PHCO), ADB
15:15 – 15:30	Coffee Break	
15:30 – 17:00	Continuation of Country Paper Presentation: Taipei,China Viet Nam	Moderator: Brahm Prakash Assistant Chief Economist, Economic Analysis and Research Division (EDAN), ADB
17:00	Welcome Reception and Cocktails (hosted by ADB)	

17 May, Thursday

9:00 – 9:30	Comparison of IMF and ADB MPIs	Russell Krueger International Monetary Fund (IMF)
9:30 – 10:00	Group Photo/Coffee Break	
10:00 – 11:30	Paper Presentation by International and Regional Organizations on MPIs/Regional Monitoring	Moderator: Pradumna B. Rana Manager, Regional Economic Monitoring Unit (REMU) ADB
	- Current Status of IMF MPI Survey:	R. Krueger, IMF
	- ADB Initiatives in Supporting Regional Economic Monitoring	Juzhong Zhuang REMU, ADB
11:30 – 12:00	The Use of MPIs at the European Central Bank	Marcel Fratzscher European Central Bank (ECB)
12:00 – 13:00	Lunch Break	
13:00 – 13:30	Technical Paper Presentation on Regional Surveillance and Financial Crisis	Moderator: B. Bhattacharyay
	- Regional Surveillance and Monitoring With Special Reference to East Asia	George Manzano University of Asia and the Pacific (UAP), Manila
13:30 – 14:15	- The Role of Contagion Versus Fundamentals in Emerging Market Crisis	M. Fratzscher, ECB
14:15 – 14:30	Coffee Break	
14:30 – 15:30	Technical Paper Presentation on “Compilation Analysis, Interpretation and Dissemination of MPIs”	Moderator: B.D. Pant, ADB
	- Evaluation of ADB MPIs and Selection of Core MPIs for Monitoring the Asset and Financial Markets	G. Nerb, ADB
15:30 – 17:00	Group Discussion/ Workshop on Harmonizing and Strengthening of MPIs in the Asia-Pacific Region: Analysis, Interpretation and Dissemination	Facilitators: B. Bhattacharyay, ADB G. Nerb, ADB R. Krueger, IMF M. Fratzscher, ECB

18 May, Friday

9:00 – 9:45	Use of Business Tendency Surveys Indicators for Monitoring and Forecasting	Moderator: B. Bhattacharyay, ADB Resource Person: G. Nerb, ADB
9:45 – 10:15	Presentation of Group Discussion/Workshop Output	Facilitators: R. Krueger, IMF M. Fratzscher, ECB
10:15 – 10:30	Interpretation of ADB MPI: A Review	B. Bhattacharyay, ADB
10:30 – 10:45	Coffee Break	
10:45 – 11:15	Workshop Summary, Follow-up Activities and Participants' Feedback on the Workshop	Facilitators: B. Bhattacharyay, ADB G. Nerb, ADB
11:15 – 11:45	Concluding Remarks	V.N. Gnanathurai Assistant Chief Economist EDSD, ADB B.D. Pant, Sr. Statistician, ADB

Interpretation of ADB Macprudential Indicators

Biswanath Bhattacharyay, SPD, ADB

Indicators	Interpretation	References	Other studies
Domestic credit (% of GDP) [growth]	Considered as an indicator of a monetary policy stance w/c is incompatible with the currency peg. Very high growth rates of domestic credit may serve as a crude indicator of the fragility of the banking system. This ratio usually rises in the early phase of the banking crisis. It may be that as the crisis unfolds, the central bank may be pumping money to the banks to alleviate their financial situation.	Kaminsky and Reinhart, 1998	
M1& M2 growth	These indicators are measures of liquidity. High growth rate of these indicators might indicate excess liquidity which may fuel speculative attacks on the currency thus leading to a "currency crisis".	Eichengreen, Rose and Wyplosz, 1995	
Quasi money (% of GDP)	Represents liquid banking deposits such as savings and time deposits that are not directly used as money. This has a slower velocity of circulation than Money.	www.cbr.ry/eng/dp/Denob_97_engl.htm	
M2 (% of GDP)	Measure of "financial deepening". An increase in this indicator (and a stable inflation rate) signifies that the economy is effective in translating liquidity expansion into output.		
Money Multiplier (M2/money base)	An indicator associated with financial liberalization. Large increases in the money multiplier can be explained by the large reductions in reserve requirements that often accompany financial liberalization.	Kaminsky & Reinhart, 1999	Calvo & Mendoza (1996); Goldstein (1998)
M2 (% of International Reserves)	Captures the extent to which liabilities of the banking system are backed by international reserves. In the event of a currency crisis, individuals may rush to convert their domestic currency deposits into foreign currency, so that this ratio captures the ability of the central bank to meet those demands.	Kaminsky & Reinhart, 1999	

Indicators	Interpretation	References	Other studies
M2 to international reserves growth			
Credit to Public Sector (% of GDP)	Solvency indicator of the public sector. Solvency is defined as the ability to meet the present value of external obligations.	Evans et. al., 2000	Edwards (1989)
Net Profits (as % of Avg. Assets) [banks]	One of the most commonly used measures of profitability. Unusually high profitability may be a sign of excessive risk taking.	Evans et. al., 2000	
Share of 10 Top stocks in trading (% of total volume of trading)	If the share of the top 10 stocks in stocks is large, any shock affecting the stock prices of these companies may have adverse effects in the stock market.		
Short-term debt (% of foreign reserves)	The inverse of this indicator is the single most important indicator of reserve adequacy in countries with significant but uncertain access to capital markets.	Evans et. al., 2000	
Real lending rate - Real deposit rate	An increase above a threshold level possibly reflects a deterioration in credit risk as banks are unwilling to lend.	Kaminsky & Reinhart, 1999	
Bank Capital (% of total Asset)	Capital adequacy and availability ultimately determines the robustness of financial institutions (especially banking institutions) to shocks to their balance sheets.	Evans et. al., 2000	
Total Asset (% GDP)			
Growth of Total Asset			
Share of 3 Largest Banks (% of total assets)	The analysis of financial sector stability may sometimes require information on the condition of individual large banks because of their market power or the possibility of contagion to other firms. If the assets of the financial institutions are highly concentrated to these big players, any shocks to these banks will have adverse effects on the banking system as a whole.	Evans et. al., 2000	

Indicators	Interpretation	References	Other studies
Loans to the Key Economic Sector	A large concentration of aggregate credit in a specific economic sector or activity, especially commercial property, may signal an important vulnerability of the financial system to developments in this sector or activity. Loan concentration can be dangerous in almost any sector of the economy.	Evans et. al., 2000	
Real Estate Loans	In the past, many financial crises have been caused or amplified by downturns in particular sectors of the economy spilling over into the financial system. This has often been the case for concentration in real estate which can be subject to severe boom and bust price cycles.	Evans et. al., 2000	
Non-performing loans (% of total loans)	An increasing trend in this ratio signals deterioration in the quality of credit portfolios and, consequently, in financial institutions' cash flows, net income and solvency.	Evans et. al., 2000	
Foreign Direct Investment (FID)	The composition of capital flows has been considered an important factor in a number of currency crises in emerging market countries. Two important types of these flows which are portfolio vs. FDI. FDI includes long-term capital inflows that might increase the productive capacity of the country and produce the revenues necessary to cover future capital outflows; portfolio investments are often perceived as low-productivity investments. Countries may be vulnerable if their current account deficits are accompanied by low FDI or by over-investment in low productivity investments.	Evans et. al., 2000	
Portfolio Investment			
Capital Adequacy Ratio (ratio of total capital on risk weighted assets)	A declining trend in this ratio may signal increased risk exposure and possible capital adequacy problems.	Evans et. al., 2000	
Central Bank Credit to Financial Institutions	A large increase in central bank credit to banks and other financial institutions -as proportion of their capital or their liabilities- often reflects severe liquidity (and frequently also solvency) problems in the financial sector.	Evans et. al., 2000	

Indicators	Interpretation	References	Other studies
Current Account Deficit (% of GDP)	A rise in this ratio is generally associated with large external capital inflows that are intermediated by the domestic financial system and could facilitate asset price and credit booms.	Evans et. al., 2000	
Total Loans (% of Total Deposits)	The ratio of credit to total deposits may give indications of the ability of the banking system to mobilize deposits to meet credit demand. A high ratio may indicate stress in the banking system and a low level of liquidity to respond to shocks.	Evans et. al., 2000	
Real Effective Exchange Rate	Real appreciation of the currency which occurs in the context of a large current account deficit is a source of increased vulnerability of the country.	Goldstein, 1998.	
International Reserves	Rapid growth of domestic credit relative to the demand for money, fiscal imbalances and credit to the public sector would deplete international reserves. A low ratio of international reserves (in central bank and financial system as a whole) to short-term liabilities is seen, particularly by investors, as a major indicator of vulnerability.	Kaminsky, Lizondo & Reinhart, Evans et. al., 2000	
International Reserves (% of imports)	An indicator of reserve adequacy or how the financial system can respond to the economy's import demands.		
Composite Stock Price Index	A sharp decline in the stock prices may signal adverse market perceptions of the health of the stock market.		
Total Debt (% to GDP)	This indicates the solvency of the country, particularly the ability to repay total external debt using the a year's income.		

References:

Evans, O. et. al, 2000. Macprudential Indicators of Financial System Soundness. IMF Occasional Paper 192, IMF, April 2000.

Kaminsky, G. S. Lizondo and C. Reinhart. 1998. "Leading Indicators of Currency Crises", IMF Staff Papers, Vol. 45 (March).

Goldstein, M. 1998. Early Warning Indicators and the Asian Financial Crisis. Prepared for EMEAP meeting.

Kaminsky, G. and C. Reinhart. 1999. "The Twin Crises: The Causes of Banking and Balance-of-Payments Problems", American Economic Review, Vol. 89.

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