PROVISIONAL AGENDA
SUMMARIES OF INVITED AND CONTRIBUTED PAPERS

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT
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MEETING ON OECD LEADING INDICATORS
PROVISIONAL AGENDA

Château de la Muette, Paris
17-18th October 1996

Thursday, 17th October 1996

09.15-10.00 Reception of participants.
10.00-10.20 Opening of Meeting, adoption of agenda and introduction by the meeting chairman, C.L. Kincannon (Chief Statistician of the OECD).

Session 1: Review of the OECD System of Leading Indicators

Discussant: Professor J. Cullity (Rutgers & Economic Cycles Research Institute - ECRI).
10.20-10.30 Introduction by the discussant, Professor Cullity.
10.30-11.00 Turning points in the international business cycle: An analysis of the OECD leading indicators for the G7 countries. (M.J. Artis, European University Institute, R.C. Bladen-Hovell and W. Zhang, University of Manchester).
Presented by M.J. Artis, European University Institute.
11.00-11.30 An Update of OECD Leading Indicators (G. Petit, G. Salou, P. Beziz, C. Degain, OECD Secretariat).
Lunch Break - 2 hours 15 minutes

14.00-14.30 Discussion, overall comments and summary for session 1.

Session 2: Methodological Issues

Discussant: Professor M.J. Artis, European University Institute.
14.30-14.40 Introduction by the meeting Chairman, C.L. Kincannon (Chief Statistician of the OECD) and by the discussant, Professor Artis.
Coffee Break - 20 minutes
16.30-17.00 Leading indicators (M. Weale and E. Salazar, National Institute of Economic and Social Research (NIESR), R. Smith, University of Bristol and S. Wright, Faculty of Economics and Politics, Cambridge).
Presented by M. Weale, NIESR.
17.00-18.00 Discussion, overall comments and summary for session 2.
18.00 Cocktail - Delegates Restaurant.
Friday, 18th October 1996

Session 3: National experiences with Leading Indicators

**Discussant:** J. Popkin (Joel Popkin and Company).

10.00-10.15 Introduction by the meeting Chairman, C.L. Kincannon (Chief Statistician of the OECD) and by the discussant, J. Popkin.

10.15-10.45 The “Caisse des Dépôts et Consignations” leading indicator (P. Artus, Caisse des Dépôts et Consignations).


Presented by R. Nilsson, OECD Secretariat.


11.45-12.30 Discussion, overall comments and summary for session 3.

*Lunch Break - 1 hour 30 minutes*

Session 4: Contributed Papers

**Discussant:** R. Nilsson, OECD Secretariat.

14.00-14.10 Introduction by the meeting Chairman, C.L. Kincannon (Chief Statistician of the OECD) and by the discussant, R. Nilsson.


*Coffee Break - 20 minutes*

15.15-15.30 The Spanish system of cyclical indicators: methodology, structure and main results (E. Quilis and A. Abad, Instituto Nacional de Estadistica INE).

15.30-15.50 Leading indicators of the Turkish Economy:

- Construction of a New Leading Indicator for Turkey (C. Aysoy, C. Kogar, C. Ozcan, A. Peker, National Bank of the Republic of Turkey, Research Department).

- The Leading Economic Indicators Experience in Turkey (G. Ugur, Undersecretariat of Treasury of the Republic of Turkey).

15.50-17.00 Discussion, overall comments and summary for session 4.

A room document by Mr B. Beckman, from the US Bureau of Economic Analysis (BEA) will also be distributed.
SUMMARIES OF INVITED AND CONTRIBUTED PAPERS

Session 1. Review of the OECD system of Leading Indicators

TURNING POINTS IN THE INTERNATIONAL BUSINESS CYCLE: AN ANALYSIS OF THE OECD LEADING INDICATORS FOR THE G-7 COUNTRIES

M.J. Artis, European University Institute, R.C. Bladen-Howell and W. Zhang, University of Manchester

Presented by M.J. Artis, European University Institute

The OECD routinely maintains a system of business cycle indicators pertaining to 22 of its Member countries (Nilsson, 1987). This system, which is in the line of analysis established by Burns and Mitchell (1986), comprises both a “coincident” or “reference” series which represents the cycle itself and in addition a leading indicator series. Timely recognition of the impending arrival of a business cycle turning point is of obvious value to policymakers. This paper provides an evaluation of the usefulness of the OECD's leading indicator series in making such predictions. Specifically the paper provides an assessment of the OECD indicator system for the G-7 countries from the early 1960s. Since the value of a leading indicator series depends on the method used to extract information from it, the paper employs a method based on a sequential probability approach which has proven useful in several recent applications.

The paper contains five sections. The characteristics of the reference cycle chronology constructed for the G-7 countries by the OECD are described in the first section. In the second section, we describe the framework for treating turning point prediction as a problem of pattern recognition and the sequential probability model which is used to extract information contained in the leading indicators in order to predict turning points in the reference cycle. The results of applying this model to the leading indicators for the United States, Japan and Germany are presented in the third section (the remaining G-7 countries are covered in Annex 4). In the fourth section, in view of its particular interest, we focus on the performance of the method in predicting the recent troughs of the G-7 countries. An international comparison of the performance in predicting turning points for the G-7 countries is provided in the final section. The main text is completed by a summary of the main results and conclusions.

AN UPDATE OF OECD LEADING INDICATORS

G. Petit, G. Salou, P. Beziz, C. Degain - OECD Secretariat

This partial study of the OECD system of leading indicators has been completed with tight deadlines and taking account of the work priorities of the Statistics Directorate. It deals with four OECD Member countries. A new leading indicator for Mexico that correctly predicted the downturn of the Mexican
economy at the end of 1994 is proposed. The OECD leading indicators of the United States (small repair), Germany (simplification of the previous indicator) and Norway (review of the existing components) are updated.

The study illustrates several questions which need to be answered. The choice of the reference series for the determination of the business cycle and the smoothing procedures for constructing its leading indicator are briefly discussed. For components, it shows that business survey data has continued to send good advanced signals of turning points, whereas in some cases, the performance of interest rates has deteriorated over time. Money supply data now seem irrelevant.

These conclusions can be discussed at the meeting and may be confirmed if resource allocation permits a more extensive review of the OECD system of leading indicators in 1997.
SESSION 2. METHODOLOGICAL ISSUES

PROCEDURES FOR CONSTRUCTING COMPOSITE INDEXES: A REASSESSMENT

J. Cullity, Rutgers and Economic Cycles Research Institute - ECRI and A. Banerji, ECRI

In 1990, Charlotte Boschan and Anirvan Banerji prepared a paper which examined various procedures used in the construction of composite indexes. They discussed the pros and cons of the various procedures used to standardise the components of the cyclical indexes. They recommended an ecumenical approach which would incorporate the advantages associated with the different approaches and drop the disadvantages attaching to each.

Since the preparation of this paper, it has become increasingly clear that the business cycle - once thought to be obsolete - remains a persuasive force in the operation of market economics. Business cycle recessions have occurred in the United States, Western Europe and Japan. This development has important implications with respect to the selection of appropriate methods for standardising index components.

The objective of the paper for the OECD meeting examines how well the Boschan and Banerji procedures for constructing leading composite indexes would have performed during recent expansions and contractions in the U.S. and elsewhere. Specifically, it compares the performance of the indexes relative to those constructed using alternative approaches.

The paper also assesses the performance of the U.S. Commerce Department’s cyclical indicators since they were revised in late 1993. For many years, a common feature of the composite indexes for Commerce and the Centre for International Business Cycle Research (CIBCR) was that they were adjusted to contain trends in aggregate economic activity (usually represented by the average growth rate in real GNP or GDP).

This adjustment was performed for a number of reasons:

1. to reduce the number of false signals in the leading indexes;
2. to reduce the contrast between long leads at peaks and short or no leads at troughs; and
3. to make the leading and coincident indexes differ mainly with respect to cyclical movements but not with respect to long-run trends.

The added growth trend factor is still retained in the CIBCR leading Index but it was eliminated in the Department of Commerce Leading Index in its last (December 1993) revision. We will seek to evaluate whether this revision makes the leading index a more effective tool for tracking business conditions.
MEASURES OF DISEQUILIBRIUM
AS COMPONENTS OF LEADING INDICATOR INDEXES

J. Popkin, Joel Popkin and Company

The majority of U.S. leading indicator components measure developments in the manufacturing and construction sectors. The probable reason is that disequilibria show up most quickly in manufacturing sector variables, such as new and unfilled orders and in inventories; and, such disequilibria are the fundamental sources of cyclical disturbances. Thus, progress in the improvement of leading indicator indexes depends importantly on increasing the use of time series that reflect various aspects of disequilibria.

A relatively new disequilibrium index is developed in Popkin, “Why Some of the Leading Indicators Lead” in Analyzing Business Cycles: Essays Honoring Geoffrey H. Moore, Sharpe Press, 1990, P. A. Klein, editor. It measures demand by unfilled orders at the beginning of a period and new orders received during the same period. Supply is production at full capacity plus existing finished goods inventories held in the manufacturing sector. The ratio of demand to supply, so defined, appeared to be a good leading indicator through the mid-1980s.

This paper will evaluate the ratio’s leading index performance since then. It will also extend the approach to encompass the goods distribution sector, principally retail and wholesale trade, and the state of inventories held in those sectors. Such a distribution-sector disequilibria measure will be constructed and evaluated as a leading indicator, both singly and jointly with the manufacturing sector indicator referred to above.

LEADING INDICATORS AND MACROECONOMETRIC MODELS:
THE CPB EXPERIENCE

H. Kranendonk, CPB Netherlands Bureau for Economic Policy

The CPB Netherlands Bureau for Economic Policy Analysis was founded fifty years ago as the Centraal Planbureau (Central Planning Bureau). Despite its name, economic planning was never part of its work. Rather, the Bureau provides independent forecasts and analyses that are scientifically sound and up-to-date and that are relevant for the policy decisions of government, parliament, and other societal organisations such as political parties, trade unions and employer’s associations.

Four times a year CPB publishes a short-term forecast, mainly based on the results of a quarterly macro-econometric model. But even with a quarterly model the prediction of turning points of economic activity remains very difficult. Moreover, accurate information on many aspects of the state of the economy comes available with a lengthy delay. For these two reasons, prediction of turning points and analysing business cycles, we also developed a system of leading indicators for the Dutch economy.

Not only the “business cycle” is analysed, but our system also gives a breakdown by demand categories. The causes of a cyclical slowdown or upturn can then be better traced. In this way the leading indicator can be used in the forecasting process with the macro-econometric model. The signals can be incorporated in the model by means of add-factors.
Beside this short-leading indicator, the CPB-system of leading indicators consists of a long-leading indicator and an employment indicator. The short-leading indicator has a lead of six month and is a weighted aggregate of 16 time series. Five variables qualified as long-leading (e.g. long-term interest, money supply and share prices). The employment indicator consists of four time series: the short term (production) indicator and three labour market indicators.

Leading indicators and macro-econometric models are not two conflicting instruments. That is the conclusion of seven years experience at the CPB. Both approaches have their merits. It is necessary to combine every piece of information available.

LEADING INDICATORS

M. Weale and E. Salazar - National Institute of Economic and Social Research - NIESR, R. Smith - University of Bristol and S. Wright - Faculty of Economics and Politics, Cambridge.

Presented by M. Weale, National Institute of Economic and Social Research

This report was prepared for the UK Office for National Statistics in 1995. The analysis of the performance of the forecasting models will be updated for the conference in October 1996.

The existing leading indicators have been the subject of much criticism, most recently in a Reuters report (10 March 1995). They are constructed using a technique which was established in the late 1940s before much of the basis of econometrics had been established. They are intended to anticipate turning points in the economy but not to provide quantitative predictions of the growth of the economy.

Selection on the basis of fit at turning points poses some problems. First of all, there are relatively few turning points, so it is difficult to make a conventional econometric assessment of performance at turning points. Secondly, if the movement of the reference cycle (GDP) is close to a random walk there is no logic to defining performance with reference only to turning points. All the movements in GDP should have equal status.

In order to facilitate the identification of the cycle, the indicator variables and the co-incident indicator of the cycle itself are smoothed. This makes it impossible to estimate any satisfactory econometric equation linking the indicators to the co-incident cycle. The reason for this is clear. If both dependent and independent variables are approximately white noise, the removal of the highest frequencies will leave variables with strong positive autocorrelation. It will then be almost impossible to find a regression equation where the residual terms are white noise.

An alternative approach is to construct a leading indicator by means of econometric methods. We have produced four regression equations which predict growth in GDP (excluding North Sea Oil and non-traded Public Services) one, two, three and four quarters ahead, using a range of economic variables as leading indicators. These regression equations cannot be estimated independently. One would expect that a variable which is used to predict growth in GDP four quarters ahead will, with a lag of one quarter but with the same coefficient, be useful in predicting growth in GDP three quarters ahead. The use of Zellner’s Seemingly Unrelated Regression Estimation (SURE) allows us to test and impose these cross-equation restrictions.

We tested our model in two ways. We estimated it over the period 1971 - 1989 so that the data for 1990-1993 would be available as a genuine test. In this pure forecast period the $R^2$ between our forecast date
and the outturn was 0.66 which is a good performance for a pure forecast. We correctly predicted whether growth would be above or below average 16 out 19 times.

We also looked at recursive forecasts, taking our model structure but estimating recursively over the period 1980-1989. Here the forecasts were on the correct side of the mean 36/40 times. Over the whole period 1980-1993 the fit between the forecasts and the outturn was $R^2 = 0.71$.

These are good performances from stringent tests. However, the model does not have a perfect fit. The CSO may find it helpful to present the forecasts not as point projections but as probabilities of above-average or below-average growth. This will draw attention to the air of uncertainty which must be inherent in any projection.
SESSION 3. NATIONAL EXPERIENCES WITH LEADING INDICATORS

THE “CAISSE DES DÉPÔTS ET CONSIGNATIONS” LEADING INDICATOR

P. Artus, Caisse des Dépôts et Consignations

In countries (such as the United States) in which a leading indicator is available, it is merely a synthetic variable (with interpretable components) representing the available data on the state of the economy. Our ambition is to set up one (or several) more sophisticated indicators which will not only synthesise the available information but will also enable GDP growth to be predicted.

The methodology we have chosen is the following:

• We select a great number of variables which we see as providing forecasting information about the economic cycle, while restricting our choice to series available on a monthly basis;

• We transform these variables (generally by differentiation) to make them stationary;

• We carry out a principal components analysis on this set of transformed variables; the initial components synthesise therefore the cyclical data available at a given moment. We shall see that they can be interpreted econometrically;

• We construct econometric equations which explain the GDP growth rate (of the previous quarter, if not yet known, the current quarter and the forthcoming quarter) and which use as explanatory variables the principal components derived from the analysis.

It will therefore be possible, on the one hand, to comment on the movements in these components, as these movements summarise in a synthetic manner the cyclical situation as described in the initial variables, and on the other hand, weight the various variables (using coefficients derived from the econometric estimates) to construct a single leading indicator which predicts GDP growth (in fact there are several leading indicators, since forecasts are made each month about GDP growth in the current quarter, the coming quarter and even the past quarter in so far as the GDP in that quarter is not yet known).

This approach differs from the one used by the OECD in drawing up G7 leading indicators in the statistical method used to extract cycles and in the calculation of the indicator itself. The OECD extracts cycles by direct observation of turning points, whereas we use an econometric forecasting approach to determine which variables display a cyclical lead.

The indicator we thus obtain is also different from the American leading indicator, in particular because of the method of weighting the various basic variables, which is arbitrary in the United States (cf. Annex 3) and econometric in our case.
Business cycle analysis is an area in which post-socialist countries have little experience at present, but which is likely to become increasingly important as they move to market economies. The analysis of business cycles in market-oriented countries relies mainly on the work of the National Bureau of Economic Research (NBER) in the United States. In the work by the NBER, business cycles are defined as recurrent sequences of altering phases of expansions and contractions in the levels of a large number of economic and financial time series. These fluctuations are persistent and the duration of a business cycle lasts as a rule several years. The expansion phases tend to be longer than the contraction phases (recessions) in business cycles due to the general occurrence of upward long-term growth trends in economic time series in market oriented countries.

Fluctuations in economic time series have been observed in the past in socialist economies, which had some of the characteristics of cycles in market economies. Future cycles in post-socialist countries are likely to follow much the same path as in OECD countries as they move to market economies and become more integrated in the world economy.

The OECD Secretariat has developed a “leading indicator system” for its member countries which is used by the Secretariat and its member countries for analyzing business cycles and for predicting cyclical turning points. The OECD leading indicator system uses the “growth cycle” or “deviation from trend” approach. This is necessary because essential cyclical similarities between series may be obscured by different long-term trends. In periods with very high long-term growth trends, the turning points in many level series are a poor guide to cyclical fluctuations in the economy because the series are dominated by the trend. This was the situation in much of the early post-war period in many industrialised countries. High growth rates may also be expected in the future in post-socialist countries. For this reason the concept of growth cycles is more appropriate for use on an international level.

Leading indicators in Poland

The report presents the results of a research project undertaken at the Research Centre for Economic & Statistical Studies in Warsaw in co-operation with the Transition Economies Division of the Statistics Directorate in the frame work of the work program of the Centre for Co-operation with Economies in Transition at the OECD. The project aimed to explore the possibility of applying the OECD indicator approach for cyclical analysis to the Polish economy. The research focused on the identification of a set of potential leading indicators and the construction of an overall composite leading indicator for Poland.

The paper is organised as follows: Part I is an introduction. Part II outlines the methodology employed and the choice of reference series and the reference chronology is presented in part III. Growth cycles in Poland and the OECD area as a whole are examined in part IV. A set of potential leading indicators is
evaluated in part V and the construction of a set of composite leading indicators is presented and evaluated in part VI. The final part contains a summary and some concluding remarks.

**Leading indicators in Hungary**

The paper reports on the construction of leading, coincident and lagging indicators for Hungary and on composite indices. The method is based on the technique developed by the OECD Secretariat. As the observation period (1985-1995) is characterised by the transition process from planned economy into a market one the indicators may differ from those of “western countries” and have to be re-considered regularly. Two of the leading indicators are inverted values of the consumer price index and the short-term credit rate for enterprises, which show the negative effect of high inflation on production.

**THE KOREAN SYSTEM OF LEADING INDICATORS**

*E. P. Hong, National Statistical Office of Korea*

It was not before the early 1960’s when Korea experienced an economic downturn that it became interested in measuring economic fluctuations using business indicators. After the Korea Productivity Centre (KPC) started compiling a Business Survey Index (BSI) in 1965, a series of cyclical indicators such as BSI, WI (Warning Indicators), DI (Diffusion Index), CI (Composite Index), econometric models were developed by various organisations for economic analysis and forecasting.

CI has been playing the most important role for short-term economic analyses such as determining reference turning dates or measuring growth rates for the past fifteen years. The methodology of compiling CI is very similar to what is being used by the US Department of Commerce except weighting and trend adjustment. The National Statistical Office of Korea (NSO) publishes each month a set of three composite indexes through the Composite Indexes of Business Indicators: leading composite index; coincident composite index; lagging composite index. Leading index indicates turning points about 10 months ahead.

Since their first development in 1981, the composite indexes have been revised four times and the fifth revision is in progress and expected to be completed by June of 1996. Every revision consists of introduction of new components to reflect the latest trend in Korean economy and evaluations of compilation methods to enhance the quality of composite indexes. In spite of these efforts, there still remain many difficulties in obtaining an accurate picture of the Korean economy via the business cycle due to the ever-changing economic conditions.

CI has been criticised for a couple of technical matters. First, the impact of the filter to eliminate trend or non-cyclical components from the series. The second is the problem of selection of component series extensively on the basis of turning points. Finally and most importantly, the shortage of proper components. All these are too difficult questions to be solved directly in the short-run.

In recent years, this dilemma has been so overwhelming that the NSO decided to utilise qualitative information as a supplement for economic analysis and forecasting. A new qualitative indicator is expected to be developed by the end of this year.
Statistical routine data sets are estimated to include about 1-10% or more of gross errors, which are the most frequent reasons for outlying observations, outliers. Outliers create many problems and confusion in statistical analysis both when forecasting single series or indices and in modelling.

The most traditional statistical methods are very sensitive to outliers and it can happen that only one “bad” outlier ruins the estimation results. In leading indicator analysis outliers are particularly troublesome in increasing the risk of false signals of direction and prospects of an economy or an industrial sector. Some recent research papers include results that many of the identified outliers seem to be associated with turning points in the business cycle; furthermore outliers tend to be clustered both within and across series.

Our aim in this paper is to present some basic types of outliers in a time series context, to consider the influences of outliers and how to try to prevent and diminish these negative effects on business cycle forecasts. Already a small decrease in the risk of false signals is worth the trouble. Fortunately we have nowadays to some extent the statistical tools of robust analysis also by microcomputers for linear regression and time series analysis.

Finally we consider briefly indicators and outliers in business cycle forecasting in future. One interesting area will be the analysis of outliers and leading indicators in cross-section, survey and panel data context. As some researchers point out outliers may occur more regularly in some of these data sets than for instance in the relatively short macroeconomic time series. Further research of outliers is, however, needed in all kind of data sets. This concerns the development of outlier robust procedures too.

This paper aims at building a composite index which sums up the information contained in a business survey. The natural framework, when the dynamics of the data are specified, is provided by dynamic factor models. Such models have a state-space representation and the index can be obtained through a Kalman filter technique. Besides, this representation is flexible enough to deal with monthly and quarterly data simultaneously. Yet, it can be shown that static factor analysis procedures also lead to consistent estimates of the parameters in a dynamic framework. It is then possible to use standard factor analysis packages in such a case, as well as the rotation procedures they provide when the model contains several factors. We estimate a one factor model with data from the French industrial monthly business survey,
and comment on the results obtained. We also use monthly and quarterly data simultaneously, and we study the balances of opinion at a less aggregated level as well.

Keywords: Business surveys, dynamic factor models, factor analysis, Kalman filter.

THE SHORT-TERM FORECAST OF INDUSTRIAL PRODUCTION IN THE MAIN EUROPEAN COUNTRIES: A MODEL WITH INTERNATIONAL LINKAGES

G. Bodo, FIAT Economic Studies and E. Giovannini, G. Piras, Instituto Nazionale di Statistica - ISTAT

The main purpose of this paper is to present a small econometric model useful to derive a short term forecast of industrial production in the main European countries (France; Germany; Italy; United Kingdom). International linkages among expectations of industrial entrepreneurs are used as a key factor of the behaviour of the model.

The paper is organised in two section. In the first one, after the estimation of a set of ARIMA models based upon monthly industrial production data (1987.01-1994.12), we deal with transfer functions models, where the number of working days and production expectations derived from business surveys are included. The forecasting performance of the latter class of models proves satisfactorily high, generally better that the one typically found under ARIMA models.

In the second part of the paper, four small national models are developed in order to estimate the industrial production forecast over 6-12 months ahead; each model consist of a set of five equations referring to effective demand, expected demand, inventories, production plans and actual production.

We find a broad homogeneity in the national models structures, which is coherent with the theory used to build the models. In each national model, expectations on future demand are based on the dynamics of the expectations formed in other countries. The result confirms the dependence of the European business cycle on the dynamics of the American economy and the relevance of the international transmission operating through the expectation channel.

The relevance of the real interest rate variable in the effective demand equation and the presence of an extrapolate component in the demand expectation, point out a peculiar channel of international transmission of a monetary impulse born in a single country. Indeed an interest rate shock in a single country affects the production in other countries through demand and production forecasts change and effective demand movements. A feedback effect is also discovered for the country where the shock was originated. The international spill over of the monetary shocks are crucially effected by the expectations formation process.
THE SPANISH SYSTEM OF CYCLICAL INDICATORS: METHODOLOGY, STRUCTURE AND MAIN RESULTS

E. Quilis and A. Abad, Instituto Nacional de Estadistica - INE

The main objective of this paper is to present the methodology of the Spanish System of Cyclical Indicators and its current structure. The methodology has four stages:

1. **Filtering**: estimates of the cyclical signal of a time series using low-pass filters designed from the frequency domain.

2. **Dating**: detection of turning points as the output from a sequence of non-linear filters.

3. **Classification**: determination of the dynamic relationship between each pair of series using a criterion of minimum distance computed with the lags between their turning points.

4. **Scoring**: estimation of composite indicators by means of factor analysis techniques.

A software system has been developed to perform states 1, 2 and 3 in an automatic (hence objective) fashion. The programme has been written in the Pascal programming language and it is currently used at Instituto Nacional de Estadistica to realise short-term economic analysis. This software will be available with the paper (in a diskette).

Leading Indicators of the Turkish Economy

CONSTRUCTION OF A NEW LEADING INDICATOR FOR TURKEY

C. Aysoy, C. Kogar, C. Ozcan and A. Peker,
National Bank of the Republic of Turkey, Research Department

The main objective of the study is to predict the likely evolution of the Turkish economy, that is to forecast the timing of the turning points of economic activity by relying on series which are closely correlated with this activity and give a good guide to the overall performance of the economy a short period ahead. A possible way of fulfilling both objectives is the construction of an appropriate leading indicator system. This study will be based on the findings of a previous project undertaken by the Central Bank of Turkey in 1991, which attempted to construct a leading indicator system for Turkey between 1962 and 1991. The previous study used the Central Bank monthly industrial production index as the reference series. The composite final leading indicator included 6 series which were chosen among more than 50 series on production, employment, foreign trade, inflation rates, construction and financial sector (see Altay, S. et al. 1991). The candidate series nevertheless, were mostly concentrated on non-financial variable. Another shortcoming of the previous study was the exclusion of the series concerning the public sector and the capital movements.

As it is well known, the execution of a stabilisation and comprehensive set of structural adjustment programmes in Turkey since the early 1980s brought about major structural changes in the overall economy, especially in the financial sector. The structural changes in the financial sector, in turn, altered the methods of public sector financing. Moreover, the liberalisation of the capital movements in 1990 was one of the most determinant factors in the developments observed in the Turkish economy since then.
Especially with the financial crisis experienced in the first half of 1994 and taking into account its wide spread effects on the overall economy in a relatively short period of time, it became evident that the integration between the financial and the real sectors of the economy, the financial requirements of the public sector standing at the core of this linkage, was intensified. Considering these developments, in our study, we will attempt to overcome the above mentioned shortcomings of the previous leading indicator system by incorporating financial and public sector variables into it. In the previous study, in conformity with the OECD’s leading indicator system and in order to enable comparisons between the business cycles of the OECD countries and Turkey, the “growth cycle” or “deviation from trend” approach was employed by using the Bry-Boschan Phase Average Trend Method. In our study, on the other hand, we plan to apply other detrending techniques and to compare the results with that of the former method.

THE LEADING ECONOMIC INDICATORS EXPERIENCE IN TURKEY

G. Ugur, Undersecretariat of Treasury of the Republic of Turkey
General Directorate of Economic Research

Studies on Leading Economic Indicators (LEI) are relatively recent in Türkiye. The main reason for this is the unavailability of monthly and quarterly data on many economic indicators till the 1990s. During the last two decades, due to either its own dynamics or to exogenous factors, the Turkish economy has confronted rather volatile fluctuations in the GDP growth and in the industrial production. This demonstrated the need for a system of leading indicators involving both the real and monetary sectors, which would also serve as an “early warning” system for the financial markets. The progress on the collection and publication of monthly and quarterly data in the recent years also encouraged the researchers to work on LEI.

Two main studies involving this subject are by Altay, et al. (1991) and Neftçi and Özmucur (1991). The first one was prepared for the Central Bank of Türkiye (CBRT) by the Bank’s own experts and the latter was prepared by two academicians for the Turkish Industrialists and Businessmen’s Association (TÜSIAD). In this paper, a comparative summary of the two papers will be provided and, also, the outlines of the project involving the development of a leading indicators and financial “early warning” system for the real and monetary sectors of the Turkish economy which will be carried out by the Undersecretariat of Treasury will be given.