1. Introduction

Inflation is an important issue for the Turkish economy. In recent years several measures have been taken in Turkey to fight against inflation. In such an anti-inflationary policy environment, monitoring of inflationary developments, especially monitoring of early signals, and forecasting of inflation are important subjects that could help assessment and revision of the anti-inflationary policies. With this motivation, this study aims to make a modest contribution to these subjects by investigating the existence and availability of leading indicators of inflation in Turkey between January 1988 and January 1999.

2. Data, Methodology and Application

Since the key policy variable of the recent anti-inflationary policy is public prices and the primary target variable is wholesale price index (base year=1987) was chosen as the reference series. In order to identify the turning points in the reference series, monthly growth rate of the standardised reference series, namely monthly inflation rate in private sector wholesale price index divided by its standard deviation ($Z_{SLVS}$), was transformed via a (3x3x5) centered-moving-average (CMA) filter which approximates the commonly accepted inflation turning-point dates best. Before the standardisation and transformation, the original reference series were extended backward and forward using the first and preceding 3 months’ growth rate in the original series, to prevent the observation losses at the end-points of CMA. Although this approach resembles the OECD’s approach described in Niemira and Klein (1994), it is different than the OECD’s approach since it suggests the extension of the original series instead of transformed series.

From the transformed reference series ($w_{ipsp}$), 4 growth cycle phases were identified through graphical analysis. The turning point dates that match these phases were determined as T(jun88), P(dec88), T(jun90), P(jan92), T(jun92), P(apr94), T(jul95), P(nov97), T(jul98). The average duration of the cycle phases (from through to through) is 31 months.

Using the results of cross correlogram and visual inspection analyses, 14 series were selected as potential leading variables. These series are:

For classification of the potential leading indicators as leading, lagging and coincident indicators, growth series of all potential variables were filtered using the same CMA(3x3x5) filter. Also, in this part of the study, the period between January 1994 and December 1994, during which all series moved with the same timing, were excluded from the sample in order to omit the effect of “currency crisis” experienced in April 1994.

3. Findings and Conclusion

Cross correlogram analysis of the CMA(3x3x5) filtered growth rate of potential variables showed that only variables $c_2$, $c_3$, $k_1$, $m_3$, $m_4$, $m_5$ and $w_l$ had significant correlation with the reference series at lead lengths higher than 3 months. Other variables except than $e_l$ were classified as either lagging or coincident series. A second growth rate calculation on the filtered growth rate of $e_l$ changed the timing between $e_l$ and the reference series and $e_l$ was classified as a leading indicator with an average lead length of 5 months.

The timing relation between $m_3$, $m_4$, $m_5$ and $wpispf$ shows that short-term capital movements play important roles on the money creation and hence on the inflation in Turkish economy. Besides the short-term capital movements and monetary developments, changes in consumer demand appear to have important effects on wholesale inflation as the time relations between $c_2$, $c_3$ (both leads 3 months on the average) and $wpispf$ indicates. Wholesale inflation in Turkey also seems to be affected from the changes in capacity utilisation and primary input prices for both $k_1$ and $w_l$ leads $wpispf$ at lead lengths higher than 3 months. The most interesting relation, however, is the relation between inflation and expectations. Accelerations or decelerations in expectations were concluded to be effective on the inflation rate observing the fact that growth rate of the expected inflation rate of raw material prices leads wholesale inflation rate 3 months on the average.

Using $c_2$, $c_3$, $m_3$, $m_4$, $m_5$ and $w_l$ an experimental composite indicator ($lci$) was also formed. The composite index was calculated by summing $c_2$, $c_3$, $m_3$, $m_4$, $m_5$ and $w_l$, which implies equal weights in the composite. A second composite leading indicator was formed ($lci2$) via adding $k_1$ to $lci$ and multiplying the sum by growth rate of $e_l$. The second composite index has a shorter span since $e_l$ and $k_1$ are available only for the period between February 1992 and January 1999.

The timing relations between the leading composite indicators of inflation ($lci$-leads 3 months) and ($lci2$ leads 3 months) and the filtered reference series ($wpispf$) are exhibited below graphically.

![Graph 1: Filtered Private Sector Wholesale Inflation and Leading Composite Indicators](image1.png)

REFERENCES