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BUSINESS CYCLE PROPERTIES OF SELECTED U.S. ECONOMIC TIME SERIES, 1959 - 1988

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ABSTRACT

This paper catalogs the business cycle properties of 163 monthly U.S. economic time series over the three decades from 1959 through 1988. Two general sets of summary statistics are reported. The first set measures the comovement of each individual time series with a reference series representing real economic activity. These statistics focus on comovements at business cycle horizons. The second set of statistics examines the predictive content of each of the series for aggregate activity, relative to different sets of conditioning (or predictive) variables. These statistics are constructed and presented in a way that facilitates comparisons across series and across conditioning sets. They also provide new lists of leading indicators based on predictive content for overall economic activity. Some of the results confirm previously recognized empirical regularities, while others provide new or different insights into the business cycle properties of various series.

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1. Introduction

This study documents the relation between 163 aggregate monthly U.S. time series and measures of monthly aggregate economic activity over the three decades from 1959 through 1988. The objective of this research is to catalog the properties of these variables in a way that is consistent and thus comparable across series and that provides a useful characterization of the comovements of these time series with overall macroeconomic conditions. This purpose is similar in spirit to the descriptive research initiated by Wesley Mitchell, Arthur Burns, and their colleagues at the NBER fifty years ago (e.g. Mitchell and Burns [1938], Burns and Mitchell [1946], and more recently Moore and Shiskin [1967]) and continued in association with the Bureau of Economic Analysis in the U.S. Department of Commerce (e.g. Zarnowitz and Boschan [1975], Moore [1990]). Burns and Mitchell's work involved the examination of many U.S. time series (for example, Mitchell and Burns [1938] used 487 series), and provided enduring insights about the historical comovements of aggregate time series with the business cycle. The tabulations presented here reflect some of the advances in time series methodology that have occurred over the intervening decades. We hope that this catalog, like Burns and Mitchell's, provides a useful resource for the development of theories of aggregate fluctuations.

The series that have been chosen are ones that enter into some theory of aggregate fluctuations, that measure dispersion and concentration of aggregate fluctuations across industry, or that historically have been viewed as important leading or coincident indicators of economic activity. The series fall into 13 categories: output and capacity utilization; consumption, sales, and income; inventories, orders, and vendor performance; housing and construction; money and credit (quantity variables); stock prices and volume; interest rates and spreads; aggregate employment and labor force participation; employment by sector; productivity and wages; prices; exchange rates and foreign trade; and miscellaneous government and other series.

This study reports two sets of statistics that address different aspects of the relation between each series and aggregate activity. The first set of statistics summarizes the business cycle properties of the series as measured by the strength and timing of the relationship between each of the series and a monthly measure of overall economic activity. This requires an operational definition of what is meant by the business cycle. Burns and Mitchell (1946) defined the business cycle in terms of a reference series, which was an average of several key aggregate time series. Their measures of cyclicality for individual series were then constructed with respect to this reference cycle; these measures included average leads or lags at peaks and troughs and an index of conformity (related to a sign correlation coefficient). Our definition of a business cycle is similar: we use the Index of Coincident Indicators (ICI) described in Stock and Watson (1989a) as our measure of monthly economic activity. This index is a weighted average of four monthly time series (employment, industrial production, manufacturing and trade sales, and personal income), and is quantitatively similar to the Index of Coincident Economic Indicators currently maintained by the U.S. Department of Commerce. We interpret comovements over business cycles in terms of whether series are correlated with this index at business cycle frequencies, interpreted here as periods of 1-6 years. Thus our measures of comovement and timing are the coherence and cross-correlation of each of the series with aggregate output at business cycle frequencies.

The second set of statistics addresses a somewhat different question: of these series, which have the greatest predictive content for measures of economic activity over the short and medium run? This question is of practical interest for at least two reasons. The first relates to a weakness in the traditional NBER scheme for classifying a series as leading, coincident, or lagging: even if a series is leading, say in terms of leads at business cycle turning points, it does not follow that this series is useful for forecasting output once lagged values of output are taken into account. The second reason is that measures of marginal predictive content can

provide insights into the types of theories that are consistent with observed economic behavior. A leading example is the large literature on whether money has marginal predictive content for output (i.e. whether money "Granger-causes" output). In this literature, a typical question is whether money has marginal predictive content once lags of some additional variables (prices and interest rates) are included in a forecasting equation for output. The second set of statistics therefore focuses on the marginal predictive content of each of these series for two measures of monthly activity, the ICI and the index of industrial production. This marginal predictive content is measured with respect to a variety of sets of forecasting variables.

This catalog of empirical relations both confirms some existing results and provides some new insights. For example, these findings accord with the observations that productivity is procyclical, that employment slightly lags the business cycle, and that, at business cycle frequencies, employment and output at the sectoral level typically move in tandem with overall economic activity. Some results of this analysis that are perhaps less widely recognized are the importance of public-private default spreads as predictors of economic performance and the extent to which some measures of employment transitions, in particular the layoff rate and the number of part-time workers, are useful leading indicators.

The outline of this paper is as follows. The criteria for selecting the 163 series and for choosing preliminary data transformations are discussed in Section 2. The next two sections describe the statistical analysis without any attempt at interpretation. The first set of statistics, summarizing the business cycle properties of each series, is presented in Section 3. Section 4 presents the second set of statistics, which summarize the marginal predictive content of each series for aggregate activity. This section also presents some results for the 1948:1-1988:12 sample for those series for which the earlier data are available. One result of this analysis is the identification of new lists of leading indicators; these lists are presented and discussed in Section 5. Section 6 provides a partial discussion and interpretation of the results. Section 8 concludes.

2. Series Selection and Preliminary Transformations

A. Selection of a measure of aggregate activity.

There are two alternative strategies for obtaining a time series that represents aggregate economic activity on a monthly level: either adopt a single series as the variable of interest or use a function of several variables. Both approaches have long traditions in empirical macroeconomics. For example, the empirical literature on the monthly money-income relation focuses on the predictability of monthly Industrial Production (IP; all mnemonics refer to the list of definitions in Appendix A). Alternatively, Burns and Mitchell (1946) constructed a reference series by averaging several different major aggregate time series; this reference series was then used to date their reference cycles.

The empirical analysis that follows adopts the second of these two approaches and uses an index of several variables to represent overall macroeconomic conditions. There are two main reasons that we use an index rather than a single series, say IP. First, all aggregate time series are measured with error, and this measurement error is arguably more important at the monthly level than at longer sampling intervals. For example, Miron and Zeldes (1987) describe the difficulty of reconciling IP – a natural candidate for a single monthly series that describes economic activity – with another measure of production derived from the monthly statistics on inventories and sales. If measurement error is imperfectly correlated across series, then this source of inaccuracy can in principle be reduced by using an average of several series. Second, the business cycle is generally viewed as reflecting common movements in multiple series, not just movements in a single measure of (say) output; see, for example, the discussions in Burns and Mitchell (1946, p.3) and Lucas (1977). This leads to using the comovements in several

series, not just the movements in an individual series, as the basis of an empirical measure of aggregate activity.

The specific index adopted here (the ICI) is computed as an estimate of the common unobserved factor in a dynamic single-factor model of four key aggregate monthly time series: IP, real personal income less transfers (GMYXP8), real manufacturing and trade sales (MT82), and employee-hours at nonagricultural establishments (LPMHUADJ). The dynamic factor model is a parametric, time-domain version of the nonparametric, frequency-domain models considered by Sargent and Sims (1977), Geweke (1977), and Singleton (1980). Although the procedure by which the ICI is constructed differs from the procedure used at the U.S. Department of Commerce to construct its Index of Coincident Economic Indicators, it turns out that the two series are quantitatively similar: in growth rates, they have a contemporaneous correlation of .95, and their average coherence for periods exceeding 8 months is .97. For details of the construction and for a comparison with the Department of Commerce series, see Stock and Watson (1988, 1989a).

B. Selection of individual time series.

Three general criteria were used to select the 163 individual monthly series. First, series that enter some theory of macroeconomic fluctuations were included. Most of the included series fall in this category. For example, this criterion led to the inclusion of output, labor input, interest rates, aggregate prices, factor prices, consumption and investment, measures of the quantity of money and credit, exchange rates, productivity, and measures of fiscal policy. Second, some series that measure dispersion of economic fluctuations across sectors were included, specifically measures of employment in different sectors of the economy. These two criteria still omitted several series that have been featured prominently as leading indicators, such as the index of vendor performance (the percent of manufacturers reporting slower

deliveries from their vendors) published until recently by the Department of Commerce in *Business Conditions Digest*; such series were included to facilitate comparisons with previous work in this area.

The complete list of series, definitions and sources are given in Appendix A. Of the 163 series, 108 were obtained directly from the Citibase data base, while the remaining series involved some additional data collection, splicing, or construction. The analysis covers the period January, 1959 to December, 1988. This starting point was chosen because several important series are officially available on a monthly basis starting in January, 1959, in particular measures of the quantity of money and credit. In a few cases, series that start in the 1960's were included if they were considered potentially important. For example, the Federal Reserve Board's trade-weighted exchange rate is available only from 1967; to complement it, four additional trade-weighted exchange rate series were constructed to cover the full period from 1959 to 1988. An alternative to limiting the analysis to 1959-1988 would be to examine the properties of each series over the full sample for which that series is available. However, using a consistent sample period across series has the major advantage of producing directly comparable results. A drawback of this relatively short sample is, of course, that it provides only limited evidence on the cyclical co-movements of these series: during these 3 decades there were only four complete business cycles.

Plots of the series and summary statistics (mean, standard deviation, extrema) are given in Appendix B. As is evident from the plots, many of the series exhibit slowly-changing trends over this period. Several aspects of this empirical analysis assume that the series have finite spectral densities. We therefore transformed many of the series prior to subsequent analysis. Almost all of the transformations were of three types: no transformation, taking first differences, or taking first differences of the logarithms (i.e. growth rates). In choosing the transformations, we were primarily guided by historical tradition, assisted by some simple

statistical tests for the presence of stochastic trends in the series. Series that measure real or nominal quantities (labor, output, money supply, etc.) were in general transformed into growth rates. Series that measure real or nominal quantities but that need not be positive (the trade balance) were expressed as a percent of national income. Price indexes were expressed in growth rates, i.e. as the rate of inflation derived from that price index. Dickey-Fuller (1979) statistics fail to reject the hypothesis that nominal interest rates and constructed estimates of ex-ante real interest rates contain a unit root over this period; thus the monthly changes in nominal rates were used. Interest rate spreads were used without further transformation, so the two interest rates used to form the spread were implicitly treated as being cointegrated. There were some series which did not fit into these general categories, such as the Index of Vendor Performance and capacity utilization rates; for these, we relied on Dickey-Fuller test statistics to suggest whether it was appropriate to difference the series or to leave it in levels. Finally, although most of the series either have no seasonal component or are already seasonally adjusted (indeed, many are available only on a seasonally adjusted basis), some of the series (for example, auto sales) showed sharp seasonal patterns. Additional transformations were made to these series. The transformation chosen for each of the series (growth rates, differences, none, or some series-specific transformation) is given in Appendix B.

3. Results I: Measures of Comovement with Aggregate Activity

This section presents two sets of summary statistics. The first set describes the univariate properties of the 163 series, and the second set describes the comovements of each series with our monthly measure of aggregate activity, the ICI.

The task of quantifying comovements with the business cycle – as distinct from co-

movements with aggregate activity in general – is conceptually difficult. Burns and Mitchell (1946) quantified comovements in terms of leads or lags at turning points of each series relative to the reference cycle and in terms of their index of conformity. More recent work has focused on the second moments of the joint distribution of the series of interest and the reference series. For example, Hymans (1973) summarized cyclical timing by estimating phases in the frequency domain at business cycle frequencies, and Koch and Raasche (1988) quantified comovement and timing of leading indicators in terms of the properties of estimated bivariate transfer functions between the series and IP. This focus on second moments is appropriate if one models the series as having a stationary jointly normal distribution, for in this case the first two moments provide complete information about the joint distribution. To the extent that the series are non-Gaussian and the relationships are nonlinear, one must hope that the first two moments nonetheless summarize important links between the series.

This perspective – focusing on second moment properties of the series – is adopted here. We consider two different measures of comovements at business cycle frequencies, one in the frequency domain and one in the time domain. In the frequency domain, a natural statistic to consider is the coherence (a measure of R^2 by frequency) at business cycle frequencies. (See Sargent and Sims (1977) or Sargent (1987) for discussions of spectral interpretations of business cycle fluctuations.) In the time domain, one strategy would be to examine cross-correlations between the individual series and the ICI. However, these cross-correlations involve comovements between all components of these series, not just those components that fluctuate at business cycle frequencies. We therefore examined cross correlograms of smoothed versions of the series. Each series was smoothed by passing them though a filter a(L): for a series Y_t analyzed in differences or levels, the filtered series Z_t is $Z_t = a(L)Y_t$, while for a series analyzed in growth rates or log levels, $Z_t = a(L)\ln(Y_t)$. The cross-correlation between Z_t and $a(L)\ln(ICI_t)$ was then computed.

An ideal filter a(L) would eliminate all movements in the series other than those at business cycle frequencies. Two practical problems arise in implementing this ideal filter, however. The first is that the phrase "business cycle frequencies" is imprecise, that is, it does not delimit a specific band of frequencies. The second is that, given an ideal passband, all finitely parameterized filters are imperfect in that will be leakage from outside the passband. Thus the choice of a particular filter is somewhat arbitrary, and the calculations reported here were performed using two different filters. Both are bandpass filters that eliminate the high and very low frequency components of the series. The first filter, $a_{24}(L)$, is the first difference of a weighted 24-month compounded moving average: $a_{24}(L) = (1-L)(1+L)^{23}$. The second filter is the eighth order Butterworth filter with a design passband of $(2\pi/72, 2\pi/18)$, which corresponds to periods of 1½ to 6 years (see for example Bose [1985, Ch. 3]).

The key property of these filters is their (frequency domain) gain $|a(e^{i\omega})|$; these are plotted in Figure 1, normalized so that their maximum is 1. Because the same filter is applied to both the ICI and the trial series, the phase of the filter can be ignored, that is, filtering induces no shifts in the lead-lag relation by frequency. The Butterworth filter $a_B(L)$ passes a lower frequency signal than the 24-month moving average filter. The passband of $a_{24}(L)$ is 9 to 51 months, as measured by the full width at half-maximal gain; 90% of the gain is for periods over 8 months, and more than two-thirds corresponds to periods from 1 to 6 years. Thus $a_{24}(L)$ can be thought of as focusing on movements in the 9 month to 4 year range, while $a_B(L)$ focuses on the 18 month to 6 year range.

Both filters have $a(1)=0$ (zero power at frequency zero) so that in steady state these filters eliminate linear time trends. The filter $a_{24}(L)$ has finite order and the steady state is achieved after two years. However, $a_B(L)$ is an infinite impulse response filter. To eliminate spurious effects of initial conditions involving a linear trend component, each series was linearly detrended before filtering by $a_B(L)$.

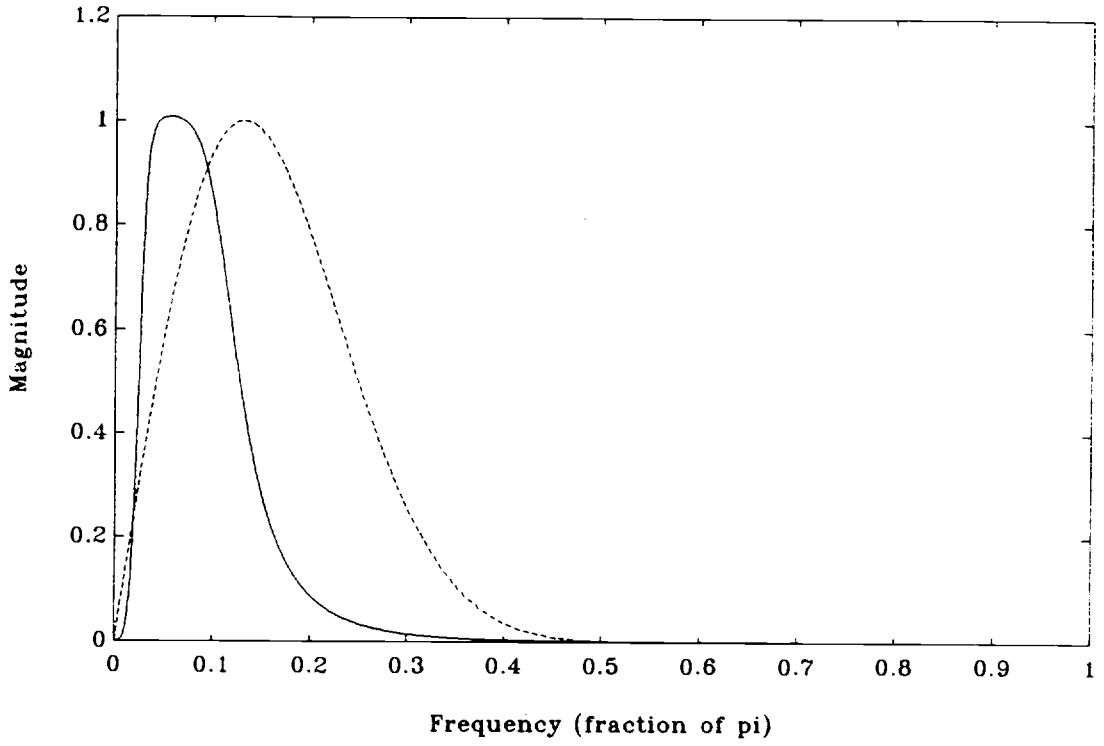

Figure 1

Gains $|a_{24}(e^{i\omega})|$ and $|a_B(e^{i\omega})|$ for the

24-month moving average filter $a_{24}(L)$ and the Butterworth filter $a_B(L)$

Key: solid line: $|a_B(e^{i\omega})|$; dashed line: $|a_{24}(e^{i\omega})|$

Statistics describing the univariate properties of the (unfiltered) series are presented in the first six columns of Table 1. The first two statistics are the Dickey-Fuller t-statistics testing the null hypothesis of a unit root in the untransformed series, against the alternative that the largest root of the series is either explosive or less than one. Both statistics include twelve lags of the changes of the indicated series; the DF_{μ} statistic includes a constant in the regression, and the DF_t statistic includes a linear time trend as well.

The next four columns report estimates of the spectral density over four frequency bands, respectively corresponding to periods of greater than 6 years, 2-6 years, 1-2 years, and less than 1 year. These estimates were obtained using an unweighted average of the periodogram ordinates over the indicated frequency range. The estimates are expressed as a ratio of the periodogram estimate over the band to the average value of the periodogram over the interval $[-\pi, \pi]$. For example, for the growth of Industrial Production (series 2) the average value of the periodogram for frequencies with periods between 2 and 6 years is 3.78 times the average value of the periodogram over the entire frequency range, while the average periodogram for periods less than one year (i.e. high frequencies) is only 74% of the overall average.

The statistics in the remaining columns, in conjunction with the final two columns of plots in Appendix B, constitute our primary summaries of the comovement and timing of the individual series with the business cycle. The first four of these columns report the coherence between the growth of the ICI and the transformed series in question over different frequency bands. The greater is the coherence in the 2-6 year range, the more closely does the series move with the ICI over the 2-6 year horizon. The reported coherences are averages across the indicated frequency band of pointwise estimates of the coherence at each frequency, where the coherence at each frequency is estimated using a rectangular kernel with 8 periodogram ordinates on either side of the frequency. Because the coherence is essentially a lag-adjusted R^2 by frequency, it does not provide information about the sign or timing of the comovements.

The final four columns address the timing of cyclical comovements. The first two of these columns report the cross-correlations between the logarithm of the ICI and the series in question, after both series have been filtered using the 24-month MA filter $a_{24}(L)$. The first column gives the maximal cross-correlation (for lags in the range -18 to +18), the second column gives the contemporaneous correlation, and the third column gives the lead or lag at which the correlation is maximal. A maximal correlation of (say) 0.4 at -5 months indicates that the filtered series at time t has a correlation of 0.4 with filtered ICI at time t+5. This lag can therefore be interpreted as one measure of the number of months by which the series leads (-) or lags (+) overall economic activity. The final column reports the lead or lag at the maximal cross-correlation (in the range -18 to +18) between the filtered trial series and filtered ICI, where the series are filtered using the Butterworth filter $a_B(L)$.

More complete information is provided graphically in Appendix B. The Appendix presents four plots for each series. The first plot portrays the historical time series. The second presents the estimated spectrum of the transformed series, averages of which (with different smoothing) are reported as the spectral density estimates in Table 1. The third plot presents the coherence between the transformed series and the growth of the ICI; averages of these are the coherences presented in Table 1. The fourth plots the cross-correlogram of the filtered series with filtered log ICI; the maximal correlation, its lead or lag, and the value at lag zero correspond to the final four columns in Table 1. The two cross-correlograms plotted in this figure were computed using the 24-month MA filter $a_{24}(L)$ (solid line) and the Butterworth filter $a_B(L)$ (dashed line).

4. Results II: Predictive Content for Aggregate Output

The cross-correlations and cross-spectra reported in the previous section provide one set of measures of the comovements between these series and the ICI at different horizons. However, a different and arguably more useful criterion of whether a series is a leading indicator of future economic activity is whether movements in that series are useful in forecasting total output. This section presents statistics that summarize the additional (linear) information content of each of these 163 series, relative to three different sets of conditioning variables.

Table 2 presents various summaries of the predictive content of the candidate series for ICI. The conditioning variables in these regressions are lagged values of ICI. The first four columns indicate whether lags of the candidate variable are significant in regressions that include 12 lags of ICI growth and, respectively, 6 and 12 lags of the variable. The next six columns refer to R^2s from a regression of the growth of ICI over the next k months on 6 lags each of monthly ICI growth and of the transformed series. That is, $\ln(ICI_{t+k}/ICI_t)$ is regressed on $\ln(ICI_t/ICI_{t-1}), \ldots, \ln(ICI_{t-5}/ICI_{t-6}), X_t, \ldots, X_{t-5}$, and a constant, where X_t refers to the value of the transformed series. The statistics presented are the R^2s and their ranks among the series for k = 1, 6, and 12.

The final four columns of Table 2 present statistics that examine the subsample stability of the projection of future 6-month growth of ICI onto 6 lags each of ICI growth and of the series under consideration. The first two of these columns refer to this regression, estimated over the full sample period; the root mean square error (RMSE) is computed for the two subsamples ending in September 1979 and starting in October 1979. The final two columns report the same statistics, computed from the regression estimated through September, 1979. Thus the final column simulates an out-of-sample forecasting experiment for the 6-month growth of ICI. Although no formal test statistics are provided, a large increase in the out-of-sample post-1979

RMSE, relative to the in-sample post-1979 RMSE, points to an unstable reduced-form relation between ICI and the series.

The statistics presented in Table 3 are the same as in Table 2, except that ICI is replaced by IP, both as the variable to be forecasted and as the base variable in the conditioning set. This table is included to facilitate comparisons with other research that has focused on IP. The last two rows in Table 3 show the correlation and rank correlation between the respective columns in Tables 2 and 3. These correlations are all large – particularly those for the R^2s – suggesting no major qualitative differences between the ICI and IP results.

One of the objectives of this exercise is to identify series that previously might not have been recognized as having important predictive content for aggregate activity. This suggests examining the marginal predictive content of these series for output, given a conventional set of predictive variables. Thus a larger conditioning set is used in Table 4. The base system considered here includes ICI growth, the growth rate of real M2 (FM2D82), wholesale price inflation (PW), and the 90-day Treasury bill rate (FYGM3). The main reason for examining this system is that it is a now-standard "base" model for VAR analyses of macroeconomic series. For example, with a different measure of output, this system is a typical starting point in the money-income literature (Sims (1980a, 1980b)), and it forms the basis for recent investigations of so-called structural VAR's (e.g. Blanchard and Watson (1986), Sims (1986), King, Plosser, Stock and Watson (1987), and Shapiro and Watson (1988)). A second reason for considering this system is that the results in Table 2 confirm that measures of the money supply, interest rates, and inflation have substantial marginal predictive content for output when considered in bivariate systems; a natural question thus is to see which series have substantial marginal predictive content for output, given representative series from these groups.

The statistics in Table 4 report the results of augmenting the base system by each trial series; six lags of each variable enter the regression equations. The first four columns

summarize tests of whether all lags of the trial variable and real M2 (respectively) enter the regression equation for 1-month growth in the ICI. The next six columns present the R^2's for various forecasting horizons and their ranks, where the R^2's refer to a regression of the growth of the ICI over the next k months (k = 1, 6, 12) against 6 lags each of the 5 transformed forecasting variables. The final four columns report subsample RMSE's from the regression of the 6-month growth in the ICI against six lags of each of the forecasting variables.

Table 5 presents similar statistics for a different system, one in which the conditioning set consists of lags of ICI and two additional variables: the spread between 6 month commercial paper and 6 month Treasury bills (CP6_GM6), and a measure of the slope of the long-maturity end of the yield curve (G10_G1). This choice of spreads has two related motivations. First, these spreads individually exhibit strong predictive content for ICI growth both in Table 2 and in Table 4. Second, in related work (Stock and Watson [1989a]) we found that taken together these spreads were two of the most potent leading variables from the perspective of six-month ahead forecasts. In addition to the k-month R^2's and split-sample RMSE's, Table 5 reports tests for whether these two spreads significantly enter the four-variable regression.

Although this study focuses on the 1959-1988 period, many of the series are available earlier than 1959. Statistics concerning the bivariate predictive content of these series for IP over the full 1948 - 1988 period are presented in Table 6. The statistics reported are the same as in Table 3, except for the longer sample period. A comparison of Tables 3 and 6 indicates that the difference in measures of predictive content, particularly the R^2's, between the longer and shorter samples is typically modest. (The rankings in Tables 3 and 6 are not comparable because Table 6 omits many of the series in Table 3.) In general, the R^2's are lower over the full sample, indicating that IP was less predictable in the 50's than subsequently, that the reduced-form parameters have changed, or both.

5. New Lists of Leading Indicators

One natural way to organize the information in Tables 1-6 is to use these results to develop a list of series that appear to contain useful information about the direction of future economic activity, that is, to develop a list of leading indicators. These tables examine different concepts of predictive content – bivariate correlation, bivariate marginal predictive content, and multivariate marginal predictive content – each of which suggests a different list of leading indicators. As is argued below, lists based on bivariate correlation are conceptually similar to the traditional NBER approach to identifying leading indicators, while lists based on marginal predictive content relate to more recent work focusing explicitly on the marginal forecasting ability of each series, e.g. Stock and Watson (1989a).

The first list of leading indicators is developed using the correlations reported in Table 1. The filtered cross-correlations give an indication of whether, and how strongly, a trial series is related to the ICI at business cycle frequencies. A candidate for the length of the lead or lag is the lead at the maximal absolute correlation k_{max}, as reported in the final two columns of Table 1 for the 24-month and Butterworth filters. A comparison of these leads for each series, and in particular a comparison of the plots of the cross-correlations of the filtered series in Appendix B, indicates that the choice of the filter typically does not have an important qualitative effect on the lead k_{max}. This discussion therefore focuses on the lead identified using the 24-month MA filter. A list of leading indicators based on Table 1 is presented in Table 7. This list sorts the $a_{24}(L)$ results in Table 1 by length of lead and, within length of lead, by the size of the maximal absolute correlation.

The conditional analyses of the remaining tables provide alternate criteria for classifying a series as a leading indicator based on marginal predictive content given a conditioning set. A

list of 40 such leading indicators is presented in Table 8, in which the conditioning set is lagged values of the series and lagged values of ICI growth. These are the 40 series with the greatest marginal predictive content for ICI growth based on the results in Table 2, where marginal predictive content is measured in two ways. The first ranking, given in column A, is by the six-month ahead in-sample R^2. The second, in column B, is by the 6-month ahead "out of sample" RMSE, which is the RMSE for forecasts made over the period 79:10 - 88:12 using a forecasting equation for six-month growth of the ICI estimated over 1959:1 - 1979:9.

This approach to developing a list of leading indicators – picking the "top 40" series based on their ability to forecast 6-month growth in the ICI – depends on the conditioning set. Thus a final list, based on the conditioning set in Table 4 (ICI growth, money growth, inflation, and the 90 day T-bill rate), is presented in Table 9.

It is interesting to examine the series on these three lists, and in particular to compare these series with classifications developed using more traditional techniques. The traditional NBER approach to identifying leading indicators has its roots in the visual identification of cyclical peaks and troughs in the individual series, which are often smoothed; the timing of the specific cycle is then compared with the reference cycle (Mitchell and Burns [1938], Burns and Mitchell [1946]). Over the years this approach evolved, incorporating computer programs to identify turning points (Bry and Boschan [1971]) and more formal scoring systems to determine the quality of the series as a reliable leader (Zarnowitz and Boschan [1975]). Although the performance of composite indexes of leading indicators has been examined from the perspective of marginal predictive content (Zarnowitz and Braun [1989]), a central idea in this approach is to classify according to unconditional measures, that is, not to condition on lagged values of the reference cycle or other variables in developing a least of leading variables.

Of our three categorizations, the one based on simple cross-correlations (Table 7) is closest to this traditional approach to identifying leading series. In fact, the classification in Table 7

agrees well with previous classifications that used traditional techniques, such as those which appeared in the *Business Conditions Digest*. For example, several components of industrial production, such as IPI and IPC, move approximately contemporaneously with the ICI at business cycle frequencies, as do new orders and selected measures of the labor force such as new claims for unemployment insurance. New business incorporations (INC) and business failures (FAIL) both lead overall activity, with a lead of 3 months; the leading correlation of these series is substantially larger than the contemporaneous or lagged correlations.

Series with leads of approximately six months include stock price indexes, measures of the money supply, and several price series (the correlation between the filtered price series and filtered ICI is negative at these leads). Perhaps surprisingly, these correlations also identify exchange rates as leading by 5 months, although the correlation is weak.

Interest rates also appear as leading indicators, with a longer lead: matched maturity private - public spreads (CP6_GM6 and BAC_GM3) lead by eight months, while the longest leads are given by long bond rates (inverted). This final observation is consistent Moore's (1990) recent inclusion of long bond prices in a long-leading index.

The list in Table 7 also identifies several series that are initially difficult to interpret. In a few cases, this is probably a result of the rather simple mechanical procedure for developing this list. For example, employment in mining (LPMI) leads by 11 months, with an increase in mining employment associated with a future decline in economic activity. Because mining includes the oil and gas industry, this relation is arguably driven mainly by the observation that, over this period, an oil price increase has been good for the oil industry but bad for the economy as a whole.

Another interesting set of findings is that various measures of real wages in manufacturing (LEHM82, RPWGMS, RPWGMDS) lead by 7 or 8 months, with a positive correlation. Inspection of the corresponding plots of the filtered cross-correlograms and the series

themselves indicate that this is a rather pronounced feature of these real wage series. The nominal wage series (LEHM) also leads, but with a slight negative correlation, and the leading correlation of price inflation is strong and negative; thus the positive leading pattern of the real wage series over this period appears to be associated with changes in overall prices that are not matched by changes in nominal wages, so that real wages exhibit a strong positive correlation at substantial leads. That is, on average large price increases are associated with smaller nominal wage increases and thus with real wage declines; this pattern proceeds a decline in real output.

The list based on conditional predictive content in Table 8 differs in several ways from the list in Table 7 and from the traditional NBER classification. A striking feature of Table 8 is the dominance of financial series as leading indicators, in particular interest rate spreads and measures of money and credit. Although stock prices (FSPCOM, FSPIN) have important marginal predictive content as measured by the the 6-month ahead in-sample R^2 (column A), this is exceeded by several interest rate and monetary series. When the series are ranked in order of the $R^2(6)$ statistic, the only two nonfinancial series that enter the top ten are new housing building permits (HSBP) and the index of help wanted advertising (LHEL). Of the top 40 predictors, 28 are financial series (interest rates, money and credit, stock prices) or measures of inflation. Of the remaining series, 5 are measures of labor market transitions, such as the layoff rate (LHULLHEM) or the help wanted index (LHEL). The only measures of real investment activity are those related to the housing market: traditionally identified leading indicators such as contracts and orders for plant and equipment (MPCON8) do not appear, although a measure of negative inventories, unfilled orders (MNU82), does.

Although the ranks change when the series are classified according to their out-of-sample performance during the 1980's, the list of the "top 40" series remains similar. Stock prices disappear from the list entirely, as do measures of the money supply, although measures of credit and the federal deficit continue to appear.

The final list of leading indicators is given in Table 9. The conditioning set now includes a series from each of three of the categories that have substantial correlations as indicated in the previous lists: the money supply (FM2D82), inflation (PW), and an interest rate (the 90 day T-bill rate [FYGM3]). In this light, what is surprising is that Table 9 does not differ more from Table 8. Interest rate spreads -- both measures of the public-private spread and term structure spreads -- continue to have substantial marginal predictive content, as do measures of labor flows, other measures of inflation, exchange rates, and credit. As in Table 8, stock prices surface as important leading indicators when ranked by the in-sample R^2, but their poor predictive performance over 79:10 - 88:12 suggests that their relation to economic activity in the 80's differs from what it was during the earlier part of the sample; in any case, stock prices appear in neither Table 8 nor Table 9 when ranked by out-of-sample RMSE.

6. Discussion of Specific Series

The statistics in Appendix B and in the tables confirm some existing results and provide several new insights. This section discusses some of these findings.

1. Co-movements across sectors

A key notion of the business cycle is that fluctuations are common across sectors. The 163 series include several measures of output and employment that are disaggregated by sector; examination of the statistics for these series sheds some light on the extent to which sectoral activity moves with aggregate activity at business cycle horizons. The distinct output measures are industrial production of consumer nondurables (IPCN), consumer durables (IPCD), mining (IPMIN), utilities (IPUT), and business equipment (IPE) (the other disaggregated output

measures have some degree of overlap). The distinct sectoral employment measures are employees in mining (LPMI), construction (LPCC), durable manufacturing (LPED), nondurable manufacturing (LPEN), wholesale trade (LPTW), retail trade (LPFR), finance, insurance, and real estate (LPFR), and government (LPGOV). A related composite is employees in the private service sector (LPSPNGA).

The coherences and cross-correlations in Appendix B and in Table 1 in general indicate a striking degree of positive association between these series and ICI. With the exception of output and/or employment in utilities, mining, government, and finance, insurance, and real estate, the coherence of the growth of each of the series with ICI growth for periods in the 2-6 year range exceeds .6, and the contemporaneous correlation between the filtered series is positive and large using either of the bandpass filters. According to the cross-correlogram and the lead at the maximal correlation, the output series either are contemporaneous or (for the consumption series) lead by one month; the employment series typically lag slightly. These patterns are consistent with the notion that business cycle fluctuations occur across industries approximately contemporaneously.

The exceptions to this general pattern are utilities, mining, government, and finance, insurance, and real estate. It is not surprising that government employment exhibits no substantial cyclical movements and that that the comovements in utilities, while positive and roughly contemporaneous, are not as strong as in other sectors. As mentioned in Section 5, the historical time series and filtered cross-correlograms for mining indicates that increases in employment in mining are associated with subsequent declines in economic performance. A possible source of this negative correlation is that it arises in part from employment in the oil and gas industry, which expanded during the contractions of 1974 and 1980 and which contracted with the decline of oil prices during the expansion of the mid-1980's. The relative lack of cyclical behavior of finance, insurance and real estate is noteworthy: although

employment growth slowed during each recession, the only period since 1959 during which employment in this sector actually declined was the 1974-5 recession.

2. Productivity and employment over the cycle

These statistics confirm that productivity is procyclical; for example, the contemporaneous correlation between filtered productivity (IPROD1) and filtered ICI is .91. In addition, most measures of the number of employees either are contemporaneous or slightly lag ICI. For example, total employees at nonagricultural establishments (LPNAG) has its maximal $a_{24}(L)$-filtered cross correlation at a lag of one month and has no marginal predictive content for future activity for any information set considered.

Some measures of employment, however, seem to lead the cycle, both in the sense of the filtered cross-correlograms in Appendix B and in terms of having marginal predictive content for future ICI and IP. For example, the number of people working part time for economic reasons (LHNAGP and LHNAPS), the number of employees on layoff (LHUL), the layoff rate (LHULLHEM), the help wanted index (LHEL and LHELX), and the number of new claims for unemployment insurance (LUINC) each are either contemporaneous or lead ICI slightly and have significant (at the 1% level) marginal predictive content for both ICI and IP when the information set includes lags of ICI or IP, respectively.

In some cases (in particular the help wanted index, the number of people working part time for economic reasons, and the layoff rate), this marginal predictive power persists in the regressions with expanded information sets. Indeed, the layoff rate exhibits the highest R^2 among the 1-month growth regressions in Table 5, and is second highest among the 6-month regressions. The R^2 for the forecast of the 6-month growth of ICI from a regression with lagged ICI, the two lagged interest rate spreads in Table 5, and the lagged layoff rate is 65%. Although the final statistics in Table 5 suggest that this relationship is not particularly stable

across subsamples for the layoff rate, there is less evidence of subsample instability for the number of people working part time for economic reasons. In addition, the help wanted index makes the greatest marginal contribution to the base macro model in Table 4. This is consistent with Blanchard and Diamond's (1989) finding that the vacancy rate (in their case, LHELX adjusted for trend following the procedure in Abraham [1987]) has substantial predictive content for new hires, given lagged unemployment and lagged hires.

Taken together, these statistics arguably indicate that certain measures of employment – in particular, temporary responses of firms such as reducing the hours of some workers, laying off some employees, or changing the number of advertisements for job openings – lead future activity both in the sense of cyclical timing and in the sense of having significant marginal predictive content for future output given several different information sets.

3. Cyclical behavior of prices

The series include a variety of measures of product and factor prices. The relation between prices and fluctuations is not clear *a-priori*; demand shocks would tend to result in positive correlations between innovations in prices and output and supply shocks could result in negative correlations. Correlations between output and prices at business cycle frequencies depend not only on the correlation of the innovations but also on the economy-wide adjustment to innovations. We do not attempt to provide a complete model of the types of shocks that impinge on different industries and stages of production. Nonetheless, the statistics presented here suggest that different prices have been subject to somewhat different shocks or perhaps have different adjustment mechanisms over this period.

The filtered cross-correlograms exhibit two distinct patterns in the cyclical behavior of these prices. In most cases – for example aggregate consumer prices and producer prices (PUNEW and PW), producer prices for fuel (PWFC and PW1300), capital equipment (PWFP),

manufacturing materials and components (PWIMSM), and intermediate materials (PWIMS) – increases in producer prices are associated with subsequent declines in economic activity during this period. Moreover, these series tend to decline or to remain unchanged following an increase in economic activity. On the other hand, prices of materials excluding fuel (PW1200 and PWCMP), spot commodities markets (PSCCOM), and sensitive materials (PSMC99A) tend to rise preceding and subsequent to increases in economic activity.

4. Monetary aggregates as leading indicators

Whether monetary aggregates lead output is one of the most researched questions in empirical macroeconomics. The cross-correlograms document a pattern of money, particularly measures of real money, leading output in the sense of cyclical timing. The preponderance of effort in the literature has, however, focused on the more refined issue of the marginal predictive content of money for output, given a variety of additional variables. The results in Tables 2-5 systematically illuminate this relation.

The main results from these tables pertaining to the money-income relation are four. First, based on results for the full sample, each of the real monetary aggregates (base money, M1, M2, M3, and L) have significant marginal predictive content both for ICI growth and for IP growth, given lags of the output measure. The real money variables are usually significant at the 1% level, always at the 5% level. Some, but not all, broader measures of consumer credit also lead economic activity in this predictive-content sense.

Second, focusing on M2 (as has most of the literature), we find that money has significant predictive content for output given virtually any other variable in this list. In Table 4, given 6 lags each of the ICI, inflation, the 90-day T-Bill rate, and each of the remaining trial variables in turn, in 146 of 158 cases money continues to predict the ICI at the 5% level based on the conventional F-statistics. In only three cases (the spread between rates on 6-month commercial

paper and 6-month Treasury bills (CP6_GM6), the closely-related spread between 90-day banker's acceptances and 90-day T-bills (BAC_GM3), and the index of help wanted advertising (LHEL)) is M2 no longer significant at the 10% level using standard critical values. These statistics apply to regressions with 6 lags of all variables; when 12 lags are included, the statistical significance of money diminishes (e.g. see Stock and Watson [1989b] for a discussion). This might be simply a result of reduced power when these additional restrictions are tested. In any case, the overwhelming conclusion is that money has useful predictive content given any of these information sets with only a few exceptions, based on the estimates made using the full sample. Because similar results obtain using IP in place of ICI, these results appear not to be an artifact of using a nonstandard measure of economic activity.

Third, the relation between money and output seems to be unstable over subsamples that exclude the 1980's. Friedman and Kuttner (1989) make this point in connection with the instability of velocity and of money-output regressions. Based on the final four columns of Table 4, the out-of-sample RMSE for 1979:10-1988:12 is typically one-third larger than the in-sample RMSE for this period, when the system is estimated using the full sample. The main exceptions to this are again the systems with the public-private spreads, the help-wanted index, and the layoff rate; the point estimates in these systems imply a smaller role for money and the resulting models exhibit the lowest simulated out-of-sample RMSE's. Moreover, the out-of-sample RMSE's are typically larger in Table 4 than in Table 2, indicating a deterioration of forecasting performance over the 1980's when money is included.

Fourth, the inclusion of both the public-private spread (CP6_GM6) and a measure of the slope of the yield curve, the spread between 10-year Treasury bonds and 1-year Treasury bonds (G10_G1) effectively vitiates the predictive content of any of the monetary aggregates. This is consistent with the conclusions of Stock and Watson (1989a) and Friedman and Kuttner (1989).

5. Interest rates and spreads

The previous discussion points to the substantial predictive content in certain interest rate spreads for future economic activity. The statistics in Tables 2-5 help to refine this observation and suggest some preliminary interpretations about why this might be. This discussion focuses on two distinct types of spreads: term premia, which measure the slope of the yield curve, and risk premia, measured by spreads between matched-maturity private and public debt. These spreads do not appear in the lists of leading indicators developed by Burns, Mitchell, and their collaborators at the NBER, or in the list maintained by the Department of Commerce. Still, the observation that they have substantial predictive content has precedents elsewhere in the literature. It seems to be general knowledge, at least in the financial press, that an inverted yield curve signals an impending recession, although the formal work on this proposition is limited. Campbell (1987) and Fama and French (1989) find that measures of the slope of the (short end of the) yield curve have predictive content for excess returns on a variety of financial assets. Estrella and Hardouvelis (1989) document the predictive content of the slope of the yield curve for output. Keim and Stambaugh (1986) find that public-private spreads have predictive content for excess returns on stock portfolios. Bernanke (1983) (using interwar data) and Friedman and Kuttner (1989) find that private-public spreads have substantial predictive content for output.

Consider first the yield curve spreads based solely on public debt instruments. The cross-correlations between these spreads and ICI is modest, except for the spreads incorporating 10-year bonds; these correlations, and visual inspection of the plots, indicate that inversion of the long end of the yield curve is associated with subsequent declines in output. The statistics in Tables 2 and 3 indicate that, of these spreads, only the slope of the long end of the yield curve has significant predictive content for output.

Although we do not propose a formal model to explain this property of the long end of the yield curve as a leading indicator, in an economy with effective monetary policy and sticky

prices it has a natural interpretation in terms of expected future short rates and inflation. If short rates are expected to be temporarily high as a result of contractionary monetary policy and if long term inflation is expected to subside as a result of decreased future demand, then an inverted yield curve will be associated with future declines in output.

The various public-private spreads each have substantial predictive content for output in bivariate systems and in the multivariate system in Table 4. Inspection of these statistics and the plots indicates, however, two interesting features of these spreads. First, the short term spread between 90-day T-bills and the monthly average Federal Funds rate (GM3_FF) has coherences, cross-correlations, and historical plots that suggest that this series behaves more like a default premium than like a measure of the slope of the short end of the yield curve. Moreover, the spreads between the Federal Funds rate and short term private instruments (FF_CP6 and FF_BAC) exhibit positive comovements with output growth, both by visual inspection of the series and by examination of the smoothed cross-covariances. The pattern of these cross-covariances is less like an inverted measure of the short end of the term structure (e.g. GM6_GM3) than like a measure of the private-public spread. These observations suggest that market participants at times assign substantial risk premia to loans in the federal funds market relative to 90-day T-bills, and perhaps relative to other private instruments such commercial paper.

Second, the spread between Baa-rated bonds and 10-year T-bonds indicates a distinct upward trend over this period: the mean premium during the 1960's is just over 1 percentage point, while the mean since the 1982 recession has been over 2 percentage points. This is consistent with an upward shift in the perceived riskiness of these private securities over this period.

The matched maturity public-private spreads can be thought of as measures of default premia. Because the reported commercial paper rates are averages of rates on many individual

projects, the average rate is a measure of the extent to which loans to individual firms are deemed risky. This averaging thus serves to aggregate information on financial performance, market conditions, and other firm-specific information that is used in setting the rate on each loan. This interpretation of this spread as an aggregator of private information is consistent with the striking fact (from Table 5) that information in this spread seems to be contained in few of the other variables: CP6_GM6 is significant at the 0.1% level in 156 of the 159 models in Table 5. The exceptions are regressions including two alternative, colinear measures of the short-term private default risk (GM3_FF and BAC_GM3) and the index of help wanted advertising (LHEL).

The results reported for the full postwar sample in Table 6 suggest a reduced preditive role for private-public spreads in the earlier period. Although CP6_GM3 cannot be constructed through the entire 1948:1 - 1988:12 sample, BAC_GM3 can. Although its ranking at the 6-month horizon is still good, the value of the $R^2(6)$ statistic drops from .450 over the shorter sample to .221 over the longer sample. Because the out-of-sample RMSE for BAC_GM3 is actually less in Table 6 than in Table 3, this suggests that this spread simply did not forecast output as well in the 50's as it did subsequently, rather than indicating parameter instability. These findings ought not be overinterpreted, however, since they are based on this single bankers' acceptances spread.

6. Stock prices

The stock market is conventionally viewed as a key leading indicator. A stock price index was included in the original list developed by Mitchell and Burns (1938), and the Standard and Poor's index of the prices of 500 stocks enters the index of leading indicators currently maintained by the Department of Commerce. The cross-correlograms for various measures of stock prices confirm that it leads output by approximately 6 months. Stock prices also are

leading in the sense of having significant (at the 0.1% level) predictive content for IP and ICI in bivariate systems. Indeed, of these series, the S&P 500 (FSPCOM) has the 14-th highest R^2 for forecasts of the 6-month growth in ICI.

In both the conditioning sets of Table 4 and Table 5, however, the marginal predictive content of stock prices is substantially reduced: stock returns fail to be significant at the 10% level. While the findings of the first three tables are consistent with those in Fischer and Merton (1984) (who find systematic predictive content in stock prices for future activity), the findings in Table 4 and particularly in Table 5 suggest instead that information in stock prices is contained in other aggregate time series such as the risk premium on commercial paper.

7. Conclusions

It is important to keep in mind two cautionary notes when using these tabulations. First, by focusing on second moments these statistics consider only linear relations among these series. Nonlinear relations between a series and overall activity will be captured only to the extent that they are reflected in the correlations between the series. If present, these nonlinear patterns might better be summarized by other measures of comovement, such as sign correlations. Casual inspection of the plots of the time series suggests that some series, such as the spreads, might well be better described by a nonlinear than a linear model. In these cases, although the summary measures presented here remain valid, one suspects that they might understate the relationship between the series and overall economic activity.

Second, the major advantage of this catalog -- the ability to compare the cyclical and predictive properties of different series on a common basis -- brings with it special problems of statistical inference. When assessing marginal predictive content, we have used conventional

asymptotic distribution theory to provide p-values to gauge the significance of various test statistics. While this measure of significance is useful if one considers only the performance of that particular series, when statistics are compared across series the standard critical values and p-values are in general inappropriate. For example, the null distribution of the maximal R^2 in a regression predicting the growth of industrial production among, say, 40 candidate regressions differs from the null distribution of any one such R^2. Were all the series independent under some appropriate null hypothesis, it would be feasible to compute distributions that take this into account. However, many of the series measure closely related concepts, and most are arguably correlated at some lead or lag. Thus the various summary statistics are typically dependent across series (i.e. across rows of the tables) and no practical distribution theory is available to approximate their joint distribution. As a result, we have not attempted to quantify this joint dependence and instead have simply reported the various summary statistics.

This catalog summarizes some of the main features of the cyclical properties of key aggregate time series. The statistics indicate some economically interesting relations that have not been widely recognized, such as the robustness of the predictive content of money for future output to changes in the information set (and its subsample instability) and the predictive content of public-private default premia for future aggregate activity.

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Appendix A
Variable Definitions and Sources

This Appendix provides a list of variable definitions and sources. The first line of the list provides the variable number and mnemonic, and the total period over which it is available (either in Citibase or by the authors' construction). The next lines provide a brief description of the series. If no source is given, the series was obtained from the June 26, 1989 release of Citibase. Series from sources other than Citibase, primarily those constructed by the authors, are denoted by AC. Special sources are noted after the series mnemonic.

Selected Abbreviations

FRB	Board of Governors of the Federal Reserve System
BEA	Bureau of Economic Analysis, U.S. Dept. of Commerce
CRB	Commodity Research Bureau
BCD	Business Conditions Digest
SA	Seasonally Adjusted
NSA	Not Seasonally Adjusted
AR	Annual Rates
EOM	End-of-month

List of Series

1 ICI (AC) 59:01 89:05
Experimental Index of Coincident Economic Indicators (Stock and Watson (1988, 1989a)). Estimated contemporaneous value of unobserved single factor in dynamic factor model, based on IP, LPMHUADJ, MT82, and GMYXP8.

2 IP 47:01 89:05
INDUSTRIAL PRODUCTION: TOTAL INDEX (1977=100,SA)

3 IPC 47:01 89:05
INDUSTRIAL PRODUCTION: CONSUMER GOODS (1977=100,SA)

4 IPCN 47:01 89:05
INDUSTRIAL PRODUCTION: NONDURABLE CONSUMER GDS (1977=100,SA)

5 IPCD 47:01 89:05
INDUSTRIAL PRODUCTION: DURABLE CONSUMER GDS (1977=100,SA)

6 IPD 47:01 89:05
INDUSTRIAL PRODUCTION: DURABLE MFG (1977=100,SA)

7 IPN 47:01 89:05
INDUSTRIAL PRODUCTION: NONDURABLE MFG (1977=100,SA)

8 IPMIN 47:01 89:05
INDUSTRIAL PRODUCTION: MINING (1977=100,SA)

9 IPUT 47:01 89:05
INDUSTRIAL PRODUCTION: UTILITIES (1977=100,SA)

10 IPE 47:01 89:05
INDUSTRIAL PRODUCTION: BUSINESS EQUIPMENT (1977=100,SA)

11 IPMFG 47:01 89:05
INDUSTRIAL PRODUCTION: MANUFACTURING (1977=100,SA)

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12 IPM            47:01         89:05
    INDUSTRIAL PRODUCTION: MATERIALS (1977=100,SA)
13 IPI            47:01         89:05
    INDUSTRIAL PRODUCTION: INTERMEDIATE PROD (1977=100,SA)
14 IPF            47:01         89:05
    INDUSTRIAL PRODUCTION: FINAL PRODUCTS (1977=100,SA)
15 IPX            67:01         89:05
    CAPACITY UTIL RATE: TOTAL INDUSTRY (% OF CAPACITY,SA)(FRB)
16 IPXDCA         67:01         89:05
    CAPACITY UTIL RATE: DURABLE MFG (% OF CAPACITY,SA)(FRB)
17 IPXMCA         48:01         89:05
    CAPACITY UTIL RATE: MANUFACTURING,TOTAL(% OF CAPACITY,SA)(FRB)
18 GMC82          59:01         89:05
    PERSONAL CONSUMPTION EXPENDITURES:TOTAL,82$
19 GMCD82         59:01         89:05
    PERSONAL CONSUMPTION EXPENDITURES:DURABLE GOODS,82$
20 GMPY           46:01         89:05
    PERSONAL INCOME: TOTAL (BIL$,SAAR)
21 GMPY82         47:01         89:04
    PERSONAL INCOME:TOTAL IN 1982$ (BIL$,SAAR)
22 GMYXP8         47:01         89:04
    PERSONAL INCOME:TOTAL LESS TRANSFER PAYMENTS,82$(BIL$,SAAR)
23 GMWS82    (AC) 59:01         88:12
    Real PERSONAL INCOME: WAGE & SALARY, SERVICE INDUSTRIES.  Ratio of GMWS
    (PERSONAL INCOME: WAGE & SALARY, SERVICE INDUSTRIES) to total income
    price deflator, GMPY/GMPY82
24 MT82           48:01         89:03
    MFG & TRADE SALES: TOTAL, 1982$(MIL$,SA)(BCD57)
25 MSM8           67:01         89:03
    MFG & TRADE SALES:MANUFACTURING(BIL82$,SAAM)
26 WT8            67:01         89:03
    MFG & TRADE SALES:MERCHANT WHOLESALERS,82$
27 RT8            67:01         89:03
    MFG & TRADE SALES:RETAIL TRADE,82$
28 RTR82          48:01         89:04
    RETAIL SALES: TOTAL, 1982$ (MIL$,SA)(BCD59)
29 RCARD          58:01         89:05
    RETAIL SALES: NEW PASSENGER CARS, DOMESTIC (NO.IN MIL.;SAAR)
30 RCARTA    (AC) 59:01         88:12
    66:01-: RETAIL SALES:NEW PASSENGER CARS,TOTAL DOMESTICS+IMPORTS (RCART)
    (SAAR).  59:01-66:01: RETAIL SALES:NEW PASSENGER CARS, DOMESTICS (RCARD)
    (SAAR), scaled to equal RCART in 66:01
31 MPCON8         48:01         89:04
    CONTRACTS & ORDERS FOR PLANT & EQUIPMENT IN 82$(BIL$,SA)
32 MSOND8         48:01         89:04
    MFG NEW ORDERS: CAPITAL GDS INDUS.,NONDEF,82$(BIL$,SA)
33 MOCM82         48:01         89:04
    MFG NEW ORDERS: CONSUMER GOODS & MATERIAL,82$(BIL$,SA)
34 MO82      (AC) 59:01         88:12
    MFG NEW ORDERS: Total,82$(BIL$,SA).  Constructed as ratio of MFG NEW
    ORDERS: Total,(BIL$,SA) (MO) to seasonally adjusted PRODUCER PRICE INDEX:
```

TOTAL MANUFACTURING (NSA) (PWM). PWM was seasonally adjusted prior to deflating by removing average monthly growth rates.

35 MDO82 48:01 89:04
MFG NEW ORDERS: DURABLE GOODS INDUSTRIES,82$(BIL$,SA)

36 MNO82 (AC) 59:01 88:12
MFG NEW ORDERS: NONDURABLE GOODS INDUSTRIES,82$(BIL$,SA). Constructed as ratio of MFG NEW ORDERS: NONDURABLE GOODS INDUSTRIES,(BIL$,SA) (MNO) to seasonally adjusted PRODUCER PRICE INDEX: NONDURABLE GOODS INDUSTRIES (NSA) (PWDMND). PWDMND was seasonally adjusted prior to deflating by removing average monthly growth rates.

37 MU82 (AC) 59:01 89:05
MFG UNFILLED ORDERS: TOTAL MANUFACTURING (MIL$,SA) (MDU), deflated by the PRODUCER PRICE INDEX: TOTAL MANUFACTURING (NSA) (PWM). PWM was seasonally adjusted prior to deflating by removing average monthly growth rates.

38 MDU82 (AC) 59:01 89:05
MFG UNFILLED ORDERS: DURABLE GOODS INDUSTRIES, TOTAL (MIL$,SA) (MDU), deflated by the PRODUCER PRICE INDEX: DURABLE MFG. GOODS (NSA) (PWDMD). PWDMD was seasonally adjusted prior to deflating by removing average monthly growth rates.

39 MNU82 (AC) 59:01 89:05
MFG UNFILLED ORDERS: NONDURABLE GOODS INDUSTRIES, TOTAL (MIL$,SA) (MDU), deflated by the PRODUCER PRICE INDEX: NONDURABLE MFG. GOODS (NSA) (PWDMND). PWDMND was seasonally adjusted prior to deflating by removing average monthly growth rates.

40 IVMT82 52:01 89:03
MANUFACTURING & TRADE INVENTORIES:TOTAL,82$(BIL$,SA)

41 IVM1D8 (AC) 59:01 89:05
Growth rate (Δln) of REAL MFG INVENTORIES: MATERIALS & SUPPLIES, ALL MFG INDUS: IVM1 (materials and supplies inventories) deflated by the total inventories price deflator, IVMT/IVMT82, where IVMT is total nominal mfg inventories. Growth rate in 82:1 is average of growth rates for 81:12 and 82:2 to adjust for accounting change in 82:1

42 IVM2D8 (AC) 59:01 89:05
Growth rate (Δln) of REAL MANUFACTURING AND TRADE INVENTORIES: WORK IN PROCESS, ALL MFG INDUS (SA): IVM2 (work in progress inventories) deflated by the total inventories price deflator, IVMT/IVMT82, where IVMT is total nominal mfg inventories. Growth rate in 82:1 is average of growth rates for 81:12 and 82:2 to adjust for accounting change in 82:1

43 IVM3D8 (AC) 59:01 89:05
Growth rate (Δln) of REAL MFG INVENTORIES: FINISHED GOODS, ALL MFG INDUSTRIES: IVM3 (finished goods inventories) deflated by the total inventories price deflator, IVMT/IVMT82, where IVMT is total nominal mfg inventories. Growth rate in 82:1 is average of growth rates for 81:12 and 82:2 to adjust for accounting change in 82:1

44 IVT82 48:01 89:03
MFG & TRADE:INVENTORIES TO SALES RATIO,$82(SA)(BCD77)

45 VENDOR 59:01 89:01
INDEX OF VENDOR PERFORMANCE (SOURCE: Nat'l Assn of Manufactrs and BEA)

46 HSBP 46:01 89:05

HOUSING AUTHORIZED: INDEX OF NEW PRIV HOUSING UNITS (1967=100;SA)
47 HSFR 47:01 89:05
HOUSING STARTS:NONFARM(1947-58);TOTAL FARM&NONFARM(1959-)(THOUS.,SA
48 CONDO9 48:01 89:04
CONSTRUCT.CONTRACTS: COMM'L & INDUS.BLDGS(MIL.SQ.FT.FLOOR SP.;SA)
49 FMBASE 47:01 89:05
MONETARY BASE, ADJ FOR RESERVE REQ CHGS(FRB OF ST.LOUIS)(BIL$,SA)
50 FMBASER (AC) 59:01 88:12
Ratio of nominal monetary base (FMBASE) to CPI - Total (PZUNEW)
51 FM1 59:01 89:05
MONEY STOCK: M1(CURR,TRAV.CKS,DEM DEP,OTHER CK'ABLE DEP)(BIL$,SA)
52 FM1D82 47:01 89:04
MONEY STOCK: M-1 IN 1982$ (BIL$,SA)(BCD 105)
53 FM2 59:01 89:05
MONEY STOCK:M2(M1+O'NITE RPS,EURO$,G/P&B/D MMMFS&SAV&SM TIME DEP(BIL$,
54 FM2D82 47:01 89:04
MONEY STOCK: M-2 IN 1982$(BIL$,SA)(BCD 106)
55 FM3 59:01 89:05
MONEY STOCK: M3(M2+LG TIME DEP,TERM RP'S&INST ONLY MMMFS)(BIL$,SA)
56 FM3R (AC) 59:01 88:12
Ratio of nominal M3 (FM3) to CPI - Total (PZUNEW)
57 FML 59:01 89:04
MONEY STOCK:L(M3 + OTHER LIQUID ASSETS) (BIL$,SA)
58 FMLR (AC) 59:01 88:12
Ratio of nominal L (FML) to CPI - Total (PZUNEW)
59 FCLN82 47:01 89:04
COMMERCIAL & INDUSTRIAL LOANS: OUTSTANDING,82$(MIL$,SA)
60 FCBCUC 48:01 89:03
CHANGE IN BUS AND CONSUMER CREDIT OUTSTAND.(PERCENT,SAAR)(BCD111)
61 FCBCUCY (AC) 59:01 88:12
CHANGE IN BUS AND CONSUMER CREDIT OUTSTAND. (PERCENT, SAAR) (FCBCUC) minus the annual percentage growth in total nominal personal income (GMPY)
62 FCLBMCY (AC) 59:01 88:12
Ratio of WKLY REPORTS OF LARGE COM'L BANKS: NET CHANGE IN COM'L & INDUS LOANS (BIL$, SAAR) (FCLBMC) to total nominal personal income (GMPY)
63 CCBPY 47:01 89:03
RATIO, CONSUMER INSTAL CREDIT TO PERSONAL INCOME (%,SA)(BCD-95)
64 CCI30M 48:01 88:09
CONSUMER INSTAL.LOANS: DELINQUENCY RATE,30 DAYS & OVER, (%,SA)
65 FSPCOM 47:01 89:05
S&P'S COMMON STOCK PRICE INDEX: COMPOSITE (1941-43=10)
66 FSPIN 47:01 89:05
S&P'S COMMON STOCK PRICE INDEX: INDUSTRIALS (1941-43=10)
67 FSDJ 47:01 89:05
COMMON STOCK PRICES: DOW JONES INDUSTRIAL AVERAGE
68 FSVOL 47:01 89:05
STOCK MRKT: NYSE REPORTED SHARE VOLUME (MIL.OF SHARES;NSA)
69 FYFF 55:01 89:05
INTEREST RATE: FEDERAL FUNDS (EFFECTIVE) (% PER ANNUM,NSA)

70 FYGM3 47:01 89:05
INTEREST RATE: U.S.TREASURY BILLS,SEC MKT,3-MO.(% PER ANN,NSA)
71 FYGM6 59:01 89:05
INTEREST RATE: U.S.TREASURY BILLS,SEC MKT,6-MO.(% PER ANN,NSA)
72 FYGT1 53:01 89:05
INTEREST RATE: U.S.TREASURY CONST MATURITIES,1-YR.(% PER ANN,NSA)
73 FYGT10 53:01 89:05
INTEREST RATE: U.S.TREASURY CONST MATURITIES,10-YR.(% PER ANN,NSA)
74 FYGL 47:01 89:05
INTEREST RATE: U.S.TREASURY COMPOSITE,10 YR+(LONG-TERM)(% PER ANN,NSA)
75 FYCP 47:01 89:05
INTEREST RATE: COMMERCIAL PAPER, 6-MONTH (% PER ANNUM,NSA)
76 FYBAC 47:01 89:05
INTEREST RATE: BANKERS ACCEPTANCES, 3-MONTH (% PER ANNUM,NSA)
77 FYAAAC 47:01 89:05
BOND YIELD: MOODY'S AAA CORPORATE (% PER ANNUM)
78 FYBAAC 47:01 89:05
BOND YIELD: MOODY'S BAA CORPORATE (% PER ANNUM)
79 GL_GM3 (AC) 59:01 88:12
FYGL - FYGM3
80 G10_G1 (AC) 59:01 89:05
FYGT10 - FYGT1
81 G10_GM3 (AC) 59:01 89:05
FYGT10 - FYGM3
82 G1_GM6 (AC) 59:01 89:05
FYGT1 - FYGM6
83 G1_GM3 (AC) 59:01 89:05
FYGT1 - FYGM3
84 GM6_GM3 (AC) 59:01 89:05
FYGM6 - FYGM3
85 GM3_FF (AC) 59:01 89:05
FYGM3 - FYFF
86 CP6_GM6 (AC) 59:01 89:05
FYCP - FYGM6
87 BAC_GM3 (AC) 59:01 89:05
FYBAC - FYGM3
88 BAA_G10 (AC) 59:01 89:05
FYBAAC - FYGT10
89 BAA_AAA (AC) 59:01 89:05
FYBAAC - FYAAAC
90 AAA_GL (AC) 59:01 88:12
FYAAAC - FYGL
91 FF_CP6 (AC) 59:01 88:12
FYFF - FYCP
92 FF_BAC (AC) 59:01 88:12
FYFF - FYBAC
93 FF_G10 (AC) 59:01 88:12
FYFF - FYGT10
94 FYFFR (AC) 59:01 89:05
FYFF - INFLS, where INFLS is the 12-month inflation rate based on the CPI, all items (INFLS = $100*\ln(PZUNEW_t/PZUNEW_{t-12})$)

95 FYGM3R (AC) 59:01 89:05
FYGM3 - INFLS
96 FYGM6R (AC) 59:01 89:05
FYGM6 - INFLS
97 FYGT1R (AC) 59:01 89:05
FYGT1 - INFLS
98 FYGT10R (AC) 59:01 89:05
FYGT10 - INFLS
99 LPMHUADJ (AC) 59:01 89:05
CITIBASE series LPMHU (EMPLOYEE-HOURS IN NONAGRIC.EST. (BIL.HOURS,SAAR)), adjusted for short sampling weeks in 70:9, 74:4, 79:4, 81:9, and 82:1. If the sampling week was short in month t, the adjusted series was computed as $\frac{1}{2}(LPMHU_{t+1} + LPMHU_{t-1})$.
100 LHOURS 47:01 89:04
MANHOURS OF EMPLOYED LABOR FORCE (HOUSEHOLD DATA)(HRS.PER WK;SA)
101 LHEM 48:01 89:05
CIVILIAN LABOR FORCE: EMPLOYED, TOTAL (THOUS.,SA)
102 LHTNAG 48:01 89:05
CIVILIAN LABOR FORCE:EMPLOYED IN NONAG,BOTH SEXES 16-19YRS(THOU.,
103 LHCH 47:01 89:04
AVERAGE HOURS OF WORK PER WEEK (HOUSEHOLD DATA)(SA)
104 LHNAGP 56:01 89:05
PERSONS AT WORK: PART TIME FOR ECON REASONS,NONAG IND(THOUS,SA)
105 LHNAPS 56:01 89:05
PERSONS AT WORK: PART TIME ECON REAS-SLACK WK,NONAG IND(THOUS,SA)
106 LHNPVX 56:01 89:05
PERSONS AT WORK: RATIO, VOLUNTARY/INVOLUNTARY PART-TIME EMPLOY(SA)
107 LHUL 67:01 89:05
UNEMPLOYED JOB LOSERS ON LAYOFF (THOUS,SA)
108 LHULLHEM (AC) 67:01 88:12
Ratio of job losers on layoff (LHUL) to total labor force (LHEM)
109 LHMUR 48:01 89:05
UNEMPLOYMENT RATE: MEN, 20 YEARS & OVER (%,SA)
110 LPHRM 47:01 89:05
AVG. WEEKLY HRS. OF PRODUCTION WKRS.: MANUFACTURING (SA)
111 LPHRD 47:01 89:05
AVG. WEEKLY HRS. OF PROD. WKRS.: DURABLE GOODS (SA)
112 LPMOSA 56:01 89:05
AVG. WEEKLY HRS. OF PROD. WKRS.: MFG.,OVERTIME HRS. (SA)
113 LHU5 48:01 89:05
UNEMPLOY.BY DURATION: PERSONS UNEMPL.LESS THAN 5 WKS (THOUS.,SA)
114 LHU680 48:01 89:05
UNEMPLOY.BY DURATION: AVERAGE(MEAN)DURATION IN WEEKS (SA)
115 LHEL 51:01 89:04
INDEX OF HELP-WANTED ADVERTISING IN NEWSPAPERS (1967=100;SA)
116 LHELX 48:01 89:04
EMPLOYMENT: RATIO; HELP-WANTED ADS:NO. UNEMPLOYED CLF
117 LUINC 48:01 89:04
AVG WKLY INITIAL CLAIMS,STATE UNEMPLOY.INS.,EXC P.RICO(THOUS;SA)
118 LPNAG 47:01 89:05

EMPLOYEES ON NONAG. PAYROLLS: TOTAL (THOUS.,SA)
119 LPMI 47:01 89:05
EMPLOYEES ON NONAG. PAYROLLS: MINING (THOUS.,SA)
120 LPCC 47:01 89:05
EMPLOYEES ON NONAG. PAYROLLS: CONTRACT CONSTRUCTION (THOUS.,SA)
121 LPEM 47:01 89:05
EMPLOYEES ON NONAG. PAYROLLS: MANUFACTURING (THOUS.,SA)
122 LPED 47:01 89:05
EMPLOYEES ON NONAG. PAYROLLS: DURABLE GOODS (THOUS.,SA)
123 LPEN 47:01 89:05
EMPLOYEES ON NONAG. PAYROLLS: NONDURABLE GOODS (THOUS.,SA)
124 LPTW 47:01 89:05
EMPLOYEES ON NONAG PAYROLLS: WHOLESALE TRADE (THOUS,SA)
125 LPTR 47:01 89:05
EMPLOYEES ON NONAG. PAYROLLS: RETAIL TRADE (THOUS.,SA)
126 LPFR 47:01 89:05
EMPLOYEES ON NONAG. PAYROLLS: FINANCE,INSUR.&REAL ESTATE (THOUS.,SA
127 LPSPA (AC) 59:01 88:12
EMPLOYEES ON NONAG. PAYROLLS: SERVICE-PRODUCING (THOUS.,SA), adjusted for outlier in 83:8 by using the average of the 83:7 and 83:9 values for 83:8
128 LPGOV 47:01 89:05
EMPLOYEES ON NONAG. PAYROLLS: GOVERNMENT (THOUS.,SA)
129 LPSPNGA (AC) 59:01 88:12
LPSPA - LPGOV
130 IPROD1 (AC) 59:01 88:12
Ratio of IP to LPMHUADJ
131 PLM 47:01 89:04
INDEX OF LABOR COST PER UNIT OF OUTPUT, MFG (1967=100;SA)(BCD62)
132 PLM82 (AC) 59:01 88:12
Real wage index: ratio of PLM (mfg index of labor cost per unit of output) to PW (Producer price index: all commodities)
133 LEHM 47:01 89:05
AVG HR EARNINGS OF PROD WKRS: MANUFACTURING ($,SA)
134 LEHM82 (AC) 59:01 88:12
Real consumption wage in manufacturing defined as the ratio of LHEM to PRNEW (CPI-W: all items (SA)).
135 RPWGMS (AC) 59:01 88:12
Real product wage in manufacturing defined as the ratio of LEHM to PWM, where PWM is the producer price index for manufacturers. PWM was seasonally adjusted prior to deflating by removing average monthly growth rates.
136 RPWGMDS (AC) 59:01 88:12
Real product wage in durables manufacturing defined as the ratio of LE6HMD (Avg. hourly earnings in durable manufacturing) to PWDMD (producer price index for durable manufactureres). LE6HM and PWDMD were seasonally adjusted prior to deflating by removing average monthly growth rates.
137 PUNEW 47:01 89:05
CPI-U: ALL ITEMS (SA)
138 PZUNEW 47:01 89:05
CPI-U: ALL ITEMS (NSA)

139 PW 46:01 89:05
PRODUCER PRICE INDEX: ALL COMMODITIES (NSA)
140 PW1200 47:01 89:05
PRODUCER PRICE INDEX: NONFOOD MAT. EXC. FUEL (NSA)
141 PW1300 47:01 89:05
PRODUCER PRICE INDEX: CRUDE FUEL (NSA)
142 PWCMP 47:01 89:05
PRODUCER PRICE INDEX: CRUDE MAT.EXC.FOOD,FEED,&FIBER (NSA)
143 PWFC 47:01 89:05
PRODUCER PRICE INDEX: FINISHED CONSUMER GOODS (NSA)
144 PWFP 47:01 89:05
PRODUCER PRICE INDEX: CAPITAL EQUIPMENTS (NSA)
145 PWFUEL 46:01 89:05
PRODUCER PRICE INDEX: FUELS & RELATED PROD. & POWER (NSA)
146 PWIC 46:01 89:05
PRODUCER PRICE INDEX: INDUSTRIAL COMMODITIES (NSA)
147 PWIMS 47:01 89:05
PRODUCER PRICE INDEX: INT.MATS.,SUPPL.&COMPONENTS (NSA)
148 PWIMSM 47:01 89:05
PRODUCER PRICE INDEX: MATS.&COMPONENTS FOR MFG. (NSA)
149 PSMC99A (AC) 59:01 88:12
Index of sensitive materials prices, in levels; constructed from PSMC99 (change in sensitive mat'ls prices, %, BCD99).
150 PSCCOM 48:01 89:05
SPOT MARKET PRICE INDEX:BLS & CRB: ALL COMMODITIES(67=100,NSA)
151 EXRWT1 (AC) 59:01 89:05
Real weighted exchange rate between U.S. and: Canada, France, Italy, Japan, U.K., and West Germany, constructed using consumer price indexes for each country (NSA) and shares of total real imports as weights.
152 EXRWT2 (AC) 59:01 89:05
Real weighted exchange rate between U.S. and: France, Italy, Japan, U.K., and West Germany, constructed using consumer price indexes for each country (NSA) and shares of total real imports as weights.
153 EXNWT1 (AC) 59:01 89:05
Nominal weighted exchange rate between U.S. and: Canada, France, Italy, Japan, U.K., and West Germany, constructed using shares of total real imports as weights.
154 EXNWT2 (AC) 59:01 89:05
Nominal weighted exchange rate between U.S. and: France, Italy, Japan, U.K., and West Germany, constructed using shares of total real imports as weights.
155 EXVUS 67:01 89:05
WEIGHTED-AVERAGE EXCHANGE VALUE OF U.S.DOLLAR(MAR.1973=100)
156 IMY1 (AC) 59:01 89:05
Ratio of nominal total U.S. merchandise and trade imports to GMPY (nominal U.S. personal income). Imports: Through 1977:1, Citibase series FTM, after 1977:1, Citibase series F6TMD (U.S.MDSE IMPORTS:GENERAL IMPORTS CUSTOMS VALUE (MIL$,NSA))
157 EXY1 (AC) 59:01 89:05
Ratio of nominal total nonmilitary U.S. merchandise and trade exports to GMPY. Exports: Through 1977:1, Citibase series FTE, after 1977:1,

Citibase series F6TED (U.S.MDSE EXPORTS:DOMESTIC EXPORT EXC DOD F.A.S.VALUE(MIL$,NSA))

158 TB1 (AC) 59:01 89:05
Ratio of nominal net merchandise and trade exports to GMPY. Nominal net exports are nominal exports as defined for EXY1, less nominal imports as defined for IMY1.

159 FBD 68:01 89:04
FEDERAL DEBT: TOTAL AMOUNT OUTSTANDING (BIL$,EOM,NSA)

160 FBDY (AC) 68:01 89:05
Ratio of total nominal federal debt outstanding (FBD) to total nominal personal income (GMPY)

161 FBYS (AC) 69:01 89:05
Total nominal monthly federal budget deficit (FB), seasonal differences, as percent of Nominal personal income (GMPY). Constructed as 12-month difference of FB/GMPY.

162 FAIL 48:01 88:12
BUSINESS FAILURES: CURRENT LIABILITIES (MIL$,NSA)

163 INC 47:01 89:03
NUMBER OF NEW BUSINESS INCORPORATIONS (NUMBER;SA)

Appendix B
Summary Statistics, Time Series Plots, Spectra, and Coherences of the Series

This appendix presents summary statistics and various plots of features of these series. Information on each series is provided in a panel, organized as follows:

where No. is the series number, Name is the series mnemonic, and Trans. is the transformation applied to each series. Let Y_t refer to the levels of the original series and let X_t denote the transformed series. The transformation codes are: DLN, $X_t = \Delta\ln(Y_t)$; D, $X_t = \Delta Y_t$; and N, $X_t = Y_t$. The four summary statistics reported here are: $\bar{X}$, the sample average of the transformed series, sd.dev.(X), the standard deviation of the transformed series, and min(X) and max(X), respectively the minimum and maximum of the transformed series. The statistics are computed over the period 1959:1-1988:9 or over the period for which the data is available, whichever is shorter. The four plots are:

Plot #1: Historical plot of the time series. If the series transformation code is N or D, then the levels of the original series (Y_t) are plotted. If the series transformation code is DLN, then the logarithm ($\ln(Y_t)$) is plotted.

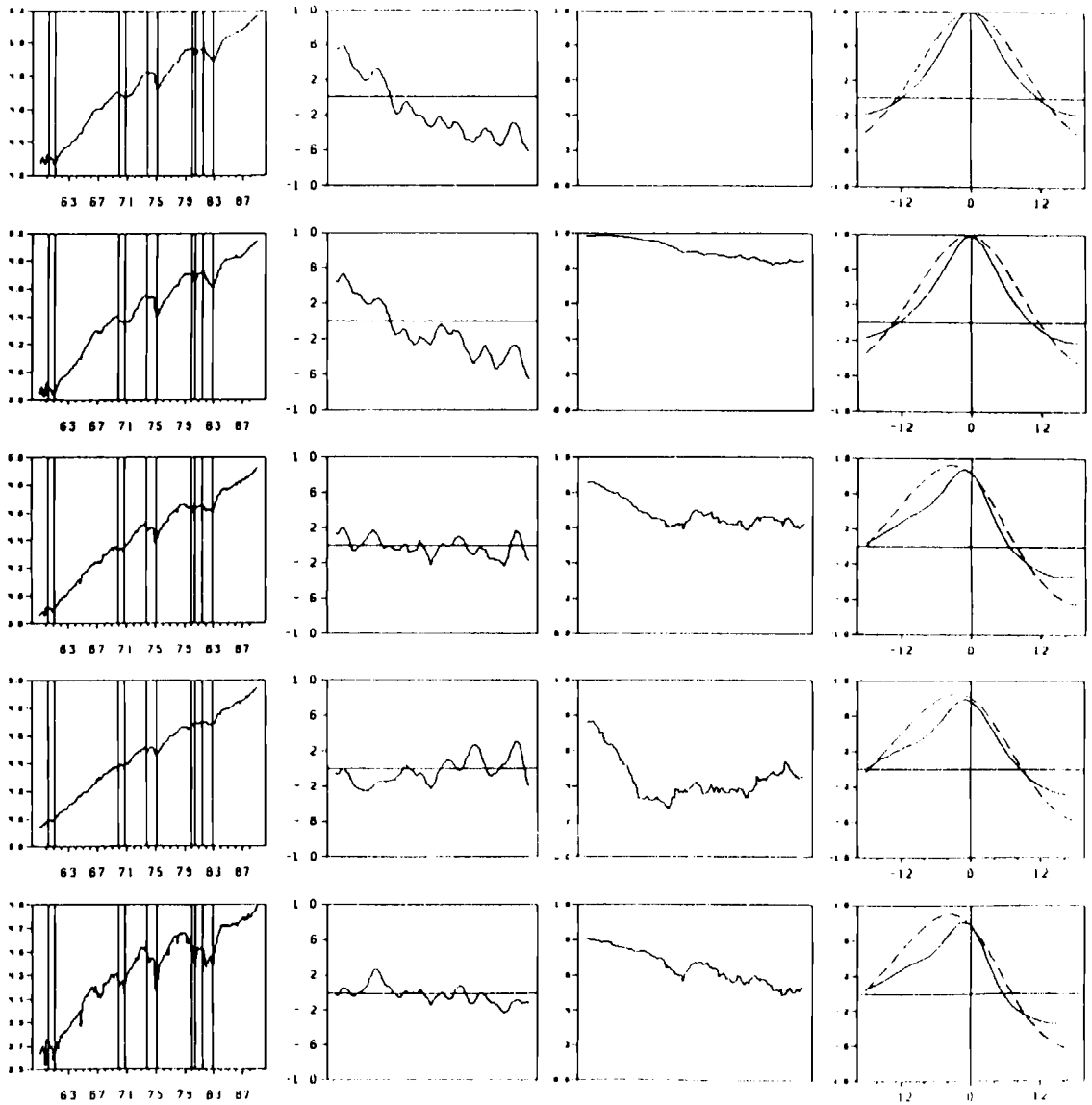
Plot #2: Logarithm (base 10) of the estimated spectrum of the transformed series X_t, normalized so that the integrated spectrum is one. The spectrum was estimated using an AR(4) prefilter; the spectrum of the filtered series was estimated using a Fejer kernel with a width of 9 periodogram ordinates on each side. The horizontal axis is in radians and ranges from 0 to π. *NOTE: The vertical scales used to plot the $\log_{10}$ spectra differ across series.*

Plot #3: Estimated coherence of the transformed series X_t with the growth in the index of coincident indicators ($\Delta\ln$(ICI); this series is described in the text). The coherence was estimated using a rectangular kernel with 8 periodogram ordinates on both sides. The horizontal axis is in radians and ranges from 0 to π.

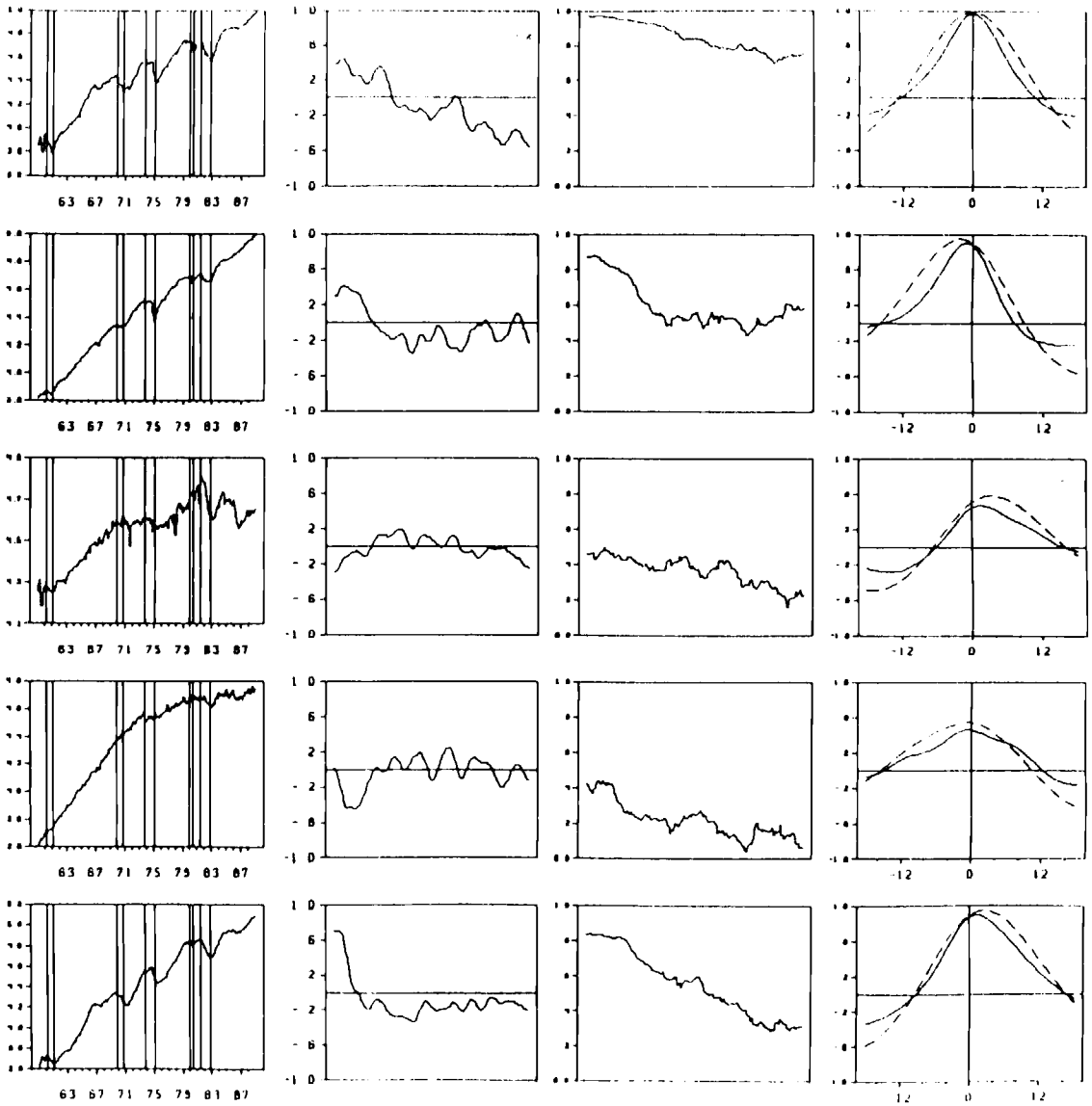
Plot #4: Cross-correlogram of filtered series with filtered ICI, for the filters $a_{24}(L)$ (solid line) and $a_B(L)$ (dashed line), where $a_{24}(L)=(1-L)(1+L)^{23}$ and $a_B(L)$ is the Butterworth filter discussed in the text. For transformation codes N and D, let $Y_t^* = Y_t$, for transformation code DLN, let $Y_t^* = \ln(Y_t)$. For $a_{24}(L)$, the filtered series is Z_t =

$a_{24}(L)Y_t^*$; for $a_B(L)$, the filtered series is $a_B(L)Y_t^{*T}$, where Y_t^{*T} denotes Y_t^* detrended by a regression against a constant and a linear time trend. The cross-correlogram is defined so that an ordinate of, say, -6 is the correlation between Z_t and $a(L)\ln(ICI_{t+6})$. The estimation period for the cross-correlograms is 1961:2 - 1988:12 to reduce the influence of initial conditions for the filtered series.

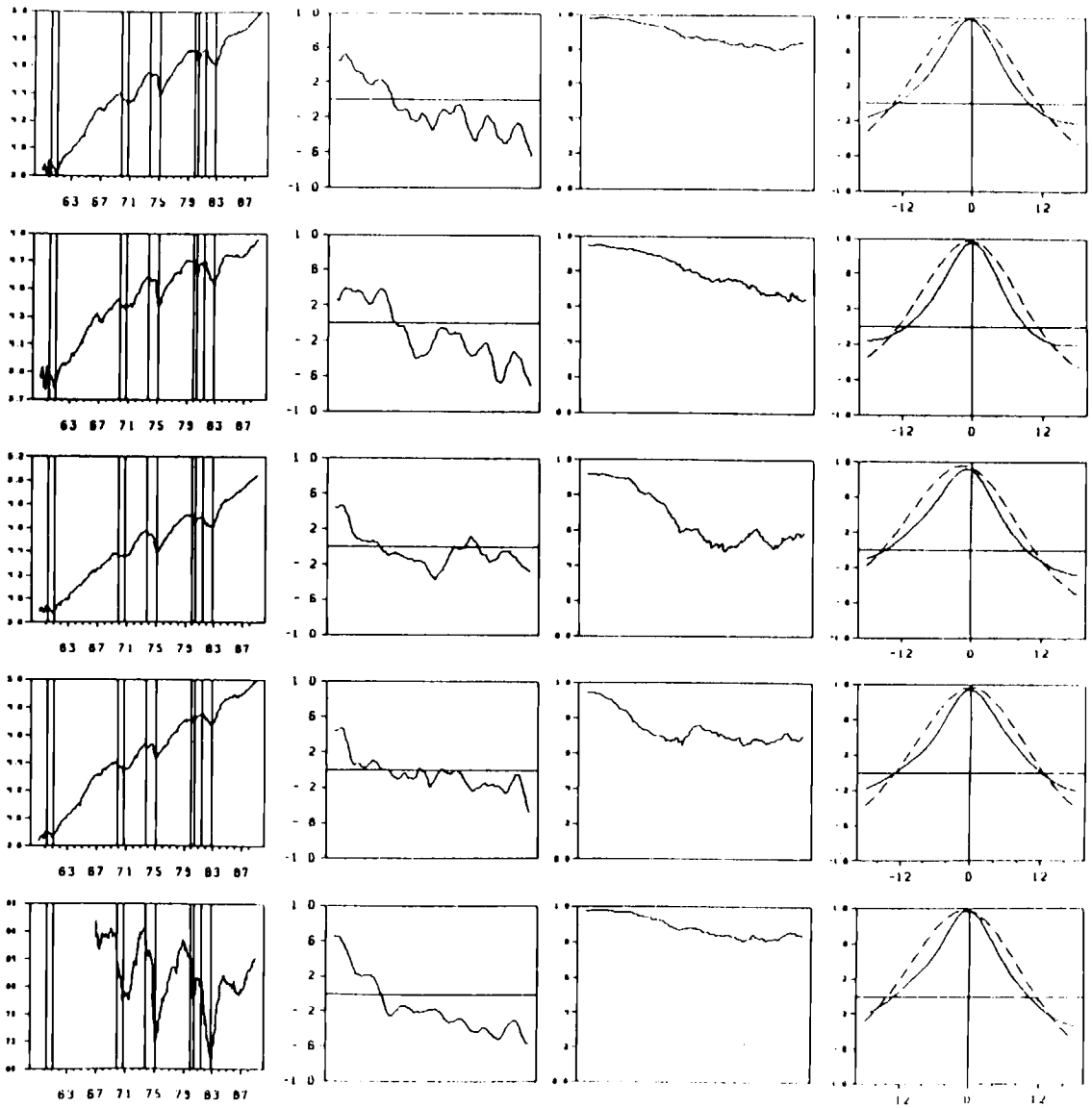
1 ICI	DLN	.0025	.0063
		-.0274	.0339
2 IP	DLN	.0031	.0097
		-.0427	.0585
3 IPC	DLN	.0030	.0103
		-.0424	.0421
4 IPCN	DLN	.0028	.0075
		-.0221	.0240
5 IPCD	DLN	.0035	.0280
		-.1306	.1270

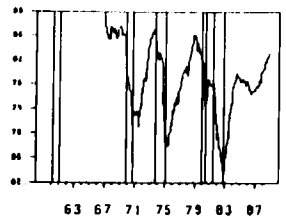
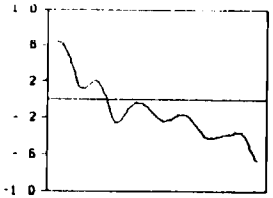
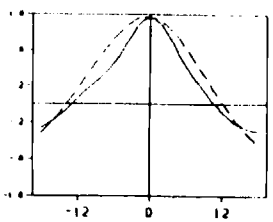
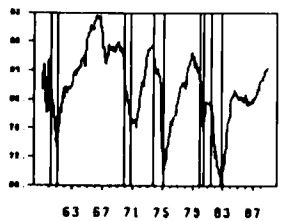
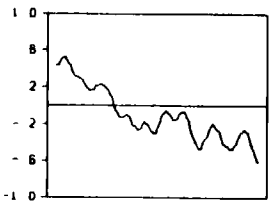
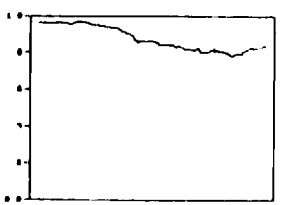
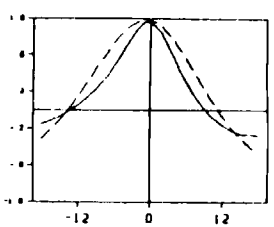


6	IPD	DLN	.0032	.0147	-.0662	.1029
7	IPN	DLN	.0033	.0083	-.0408	.0339
8	IPMIN	DLN	.0011	.0183	-.0925	.0814
9	IPUT	DLN	.0032	.0135	-.0416	.0493
10	IPE	DLN	.0041	.0124	-.0610	.0406



11 IPMFG	DLN					
.0032	.0106					
-.0498	.0656					
12 IPM	DLN					
.0028	.0146					
-.0785	.1027					
13 IPI	DLN					
.0032	.0103					
-.0519	.0418					
14 IPF	DLN					
.0032	.0086					
-.0346	.0314					
15 IPX	D					
-.0202	.7324					
-3.6000	1.8000					



16 IPXDCA	D				
-.0262	.9674				
-4.4000	2.7000				
17 IPXMCA	D				
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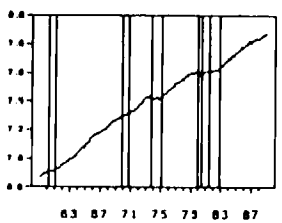
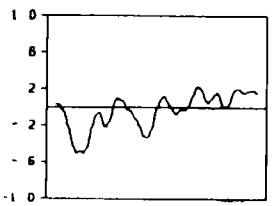
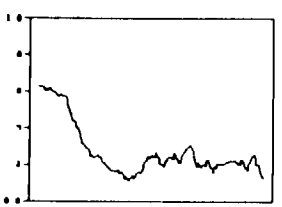
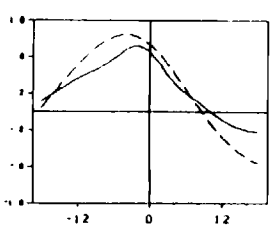
18 GMC82	DLN				
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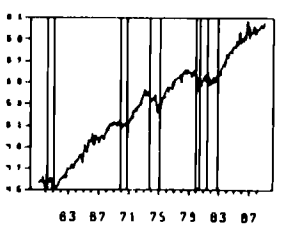
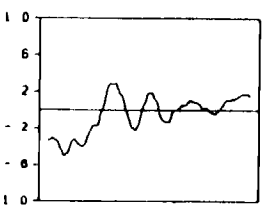
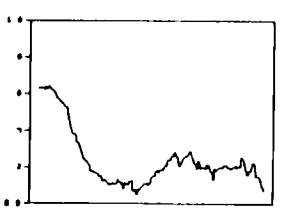
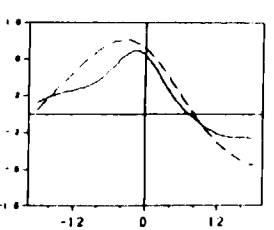
19 GMCD82	DLN				
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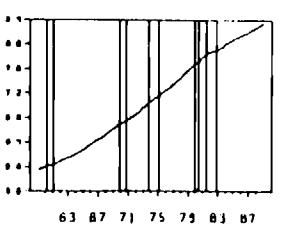
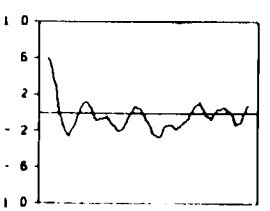
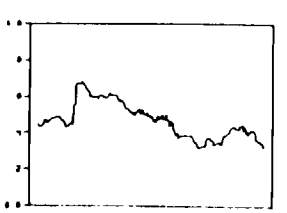
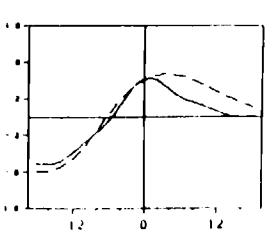
20 GMPY	DLN				
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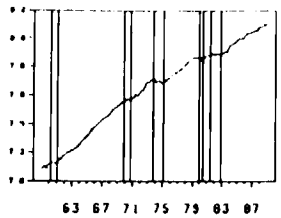
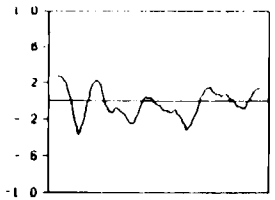
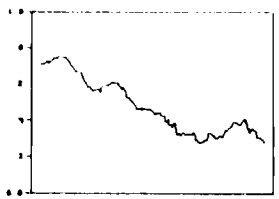
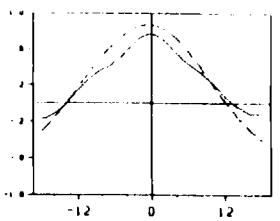
21 GMPY82	DLN				
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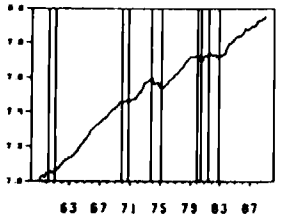
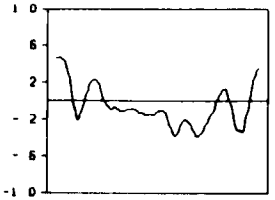
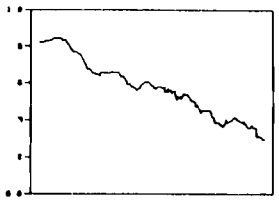
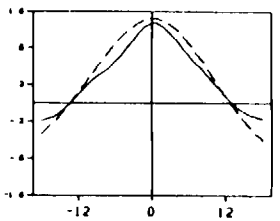
22 GMYXP8	DLN				
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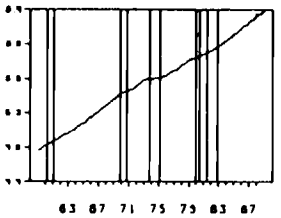
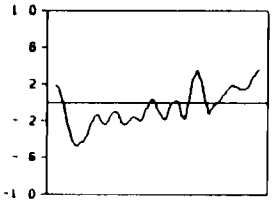
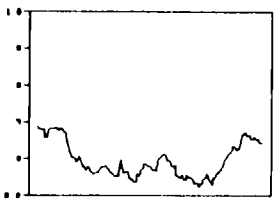
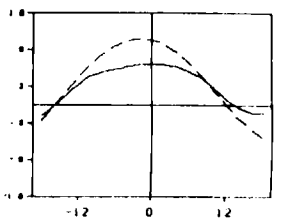
23 GMWS82	DLN				
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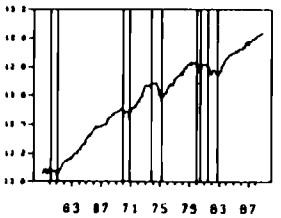
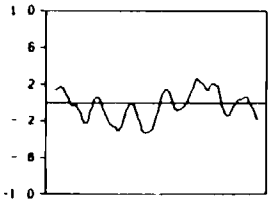
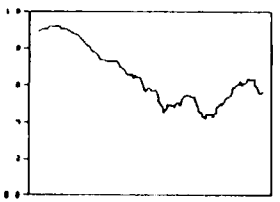
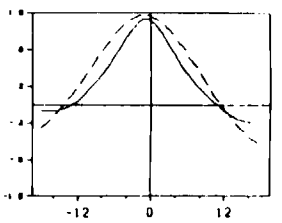
24 MT82	DLN				
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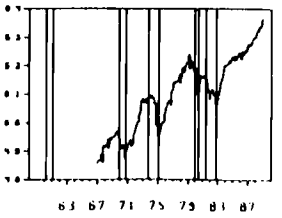
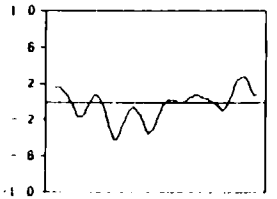
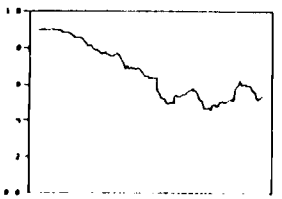
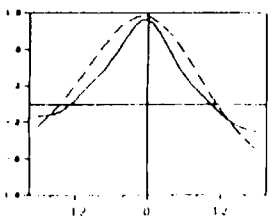
25 MSM8	DLN				
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26	WT8	DLN	
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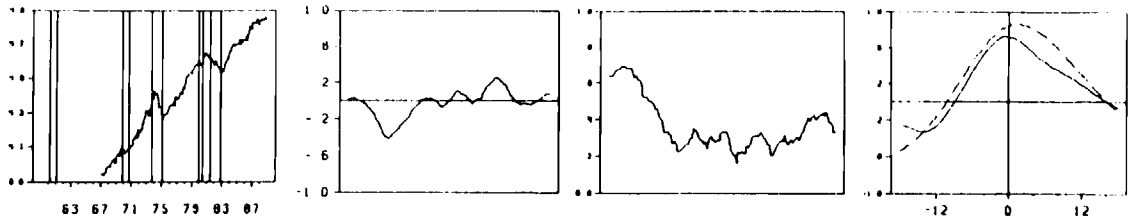

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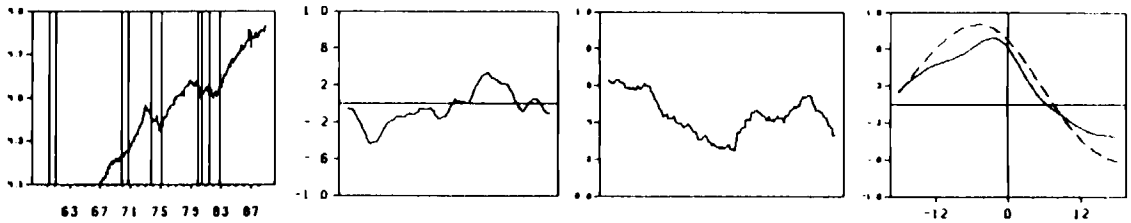

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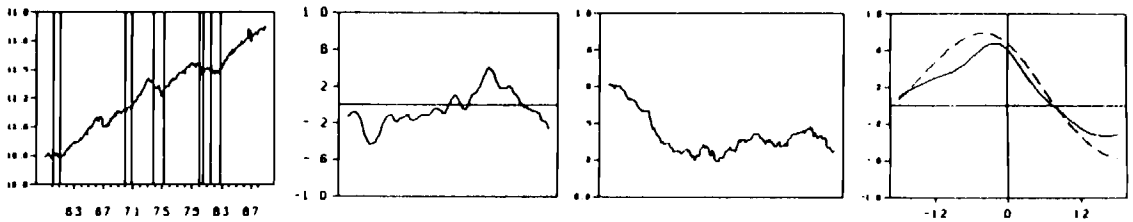

29	RCARD	DLN	
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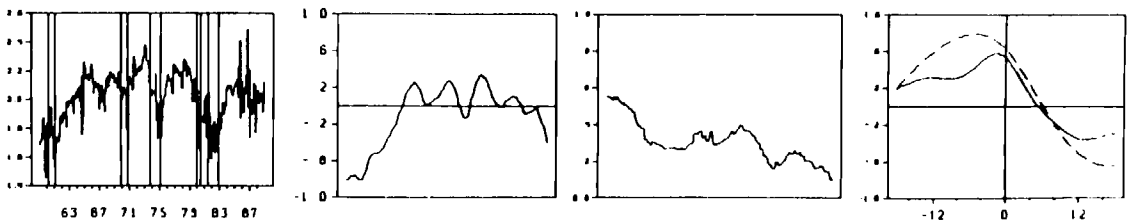

30	RCARTA	DLN	
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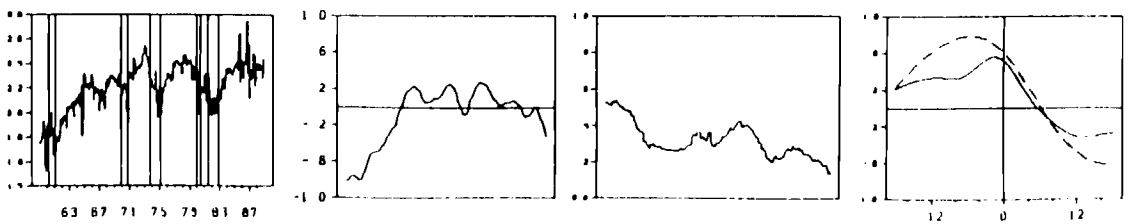

31 MPCON8 DLN

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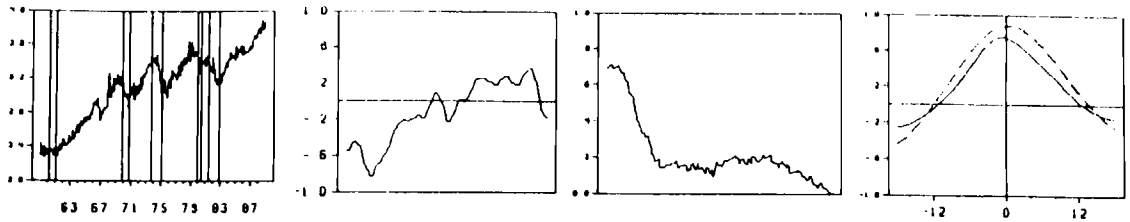

32 MSOND8 DLN

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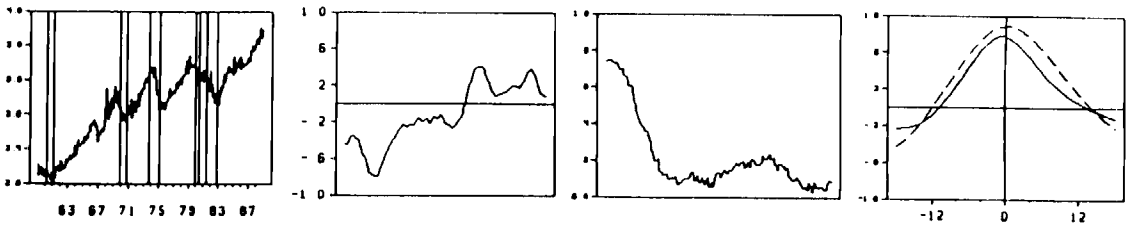

33 MOCM82 DLN

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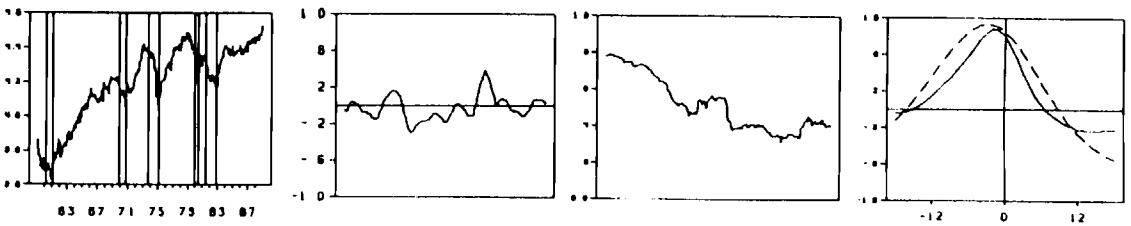

34 MO82 DLN

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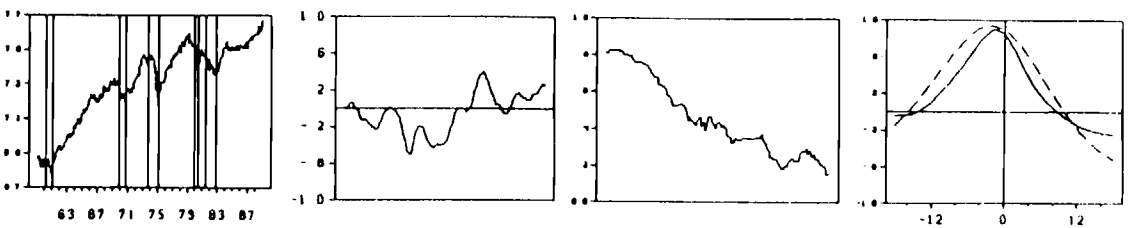

35 MDO82 DLN

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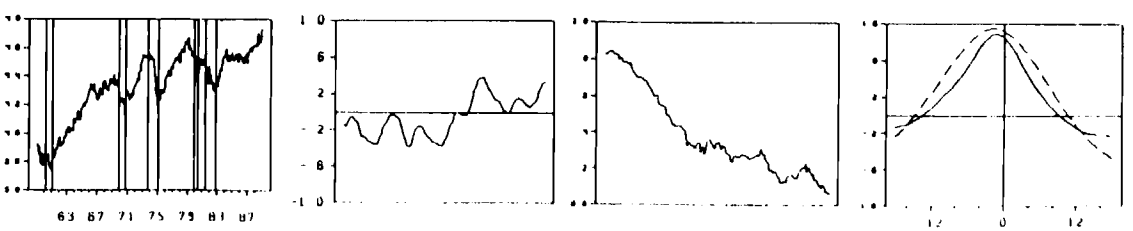
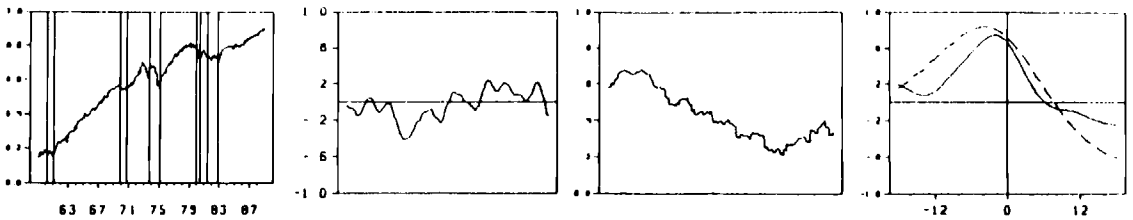


36 MNO82	DLN			
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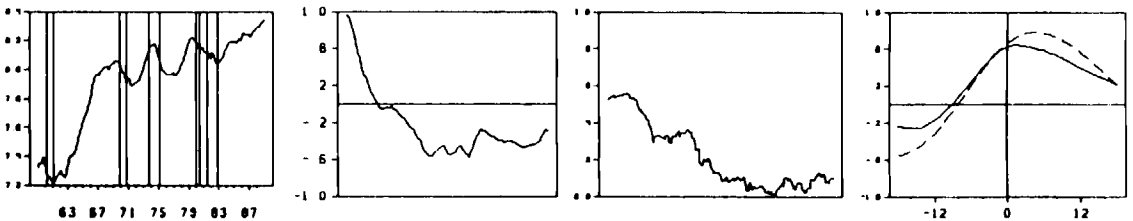
37 MU82	DLN			
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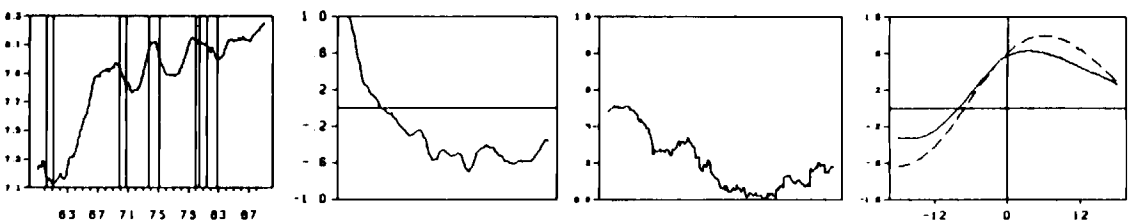
38 MDU82	DLN			
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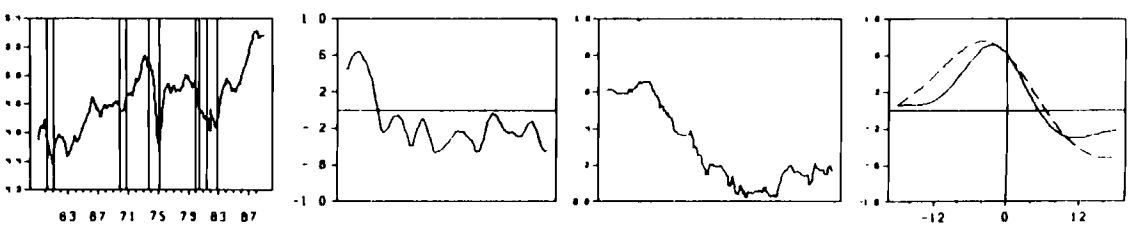
39 MNU82	DLN			
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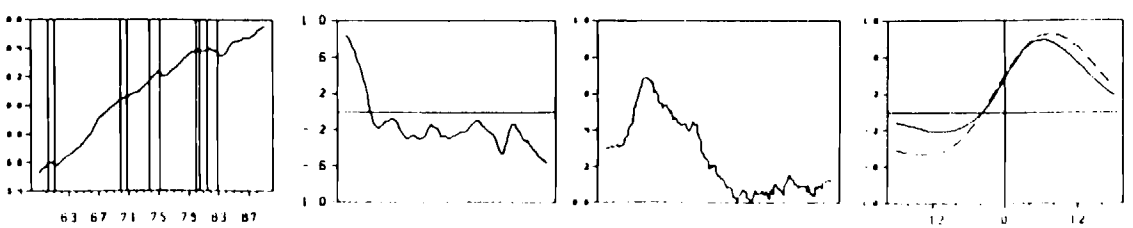
40 IVMT82	DLN			
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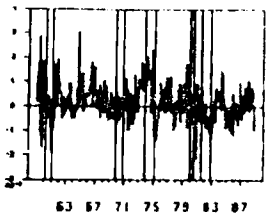
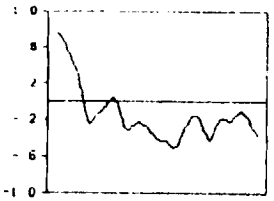
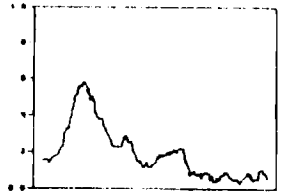
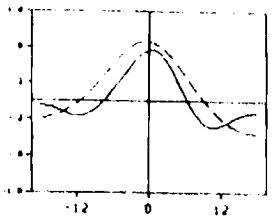
41 IVM1D8	N				
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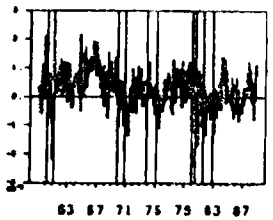
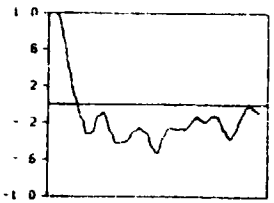
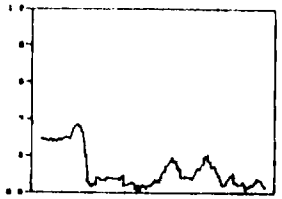
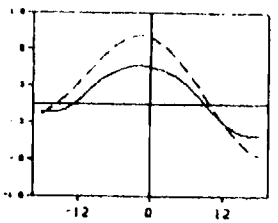
42 IVM2D8	N				
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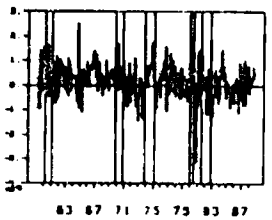
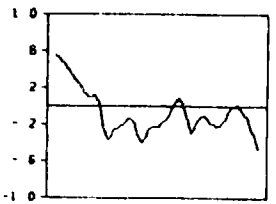
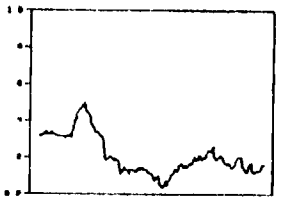
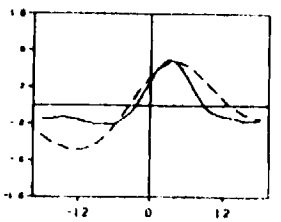
43 IVM3D8	N				
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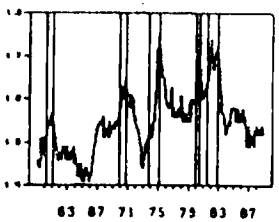
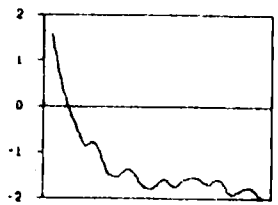
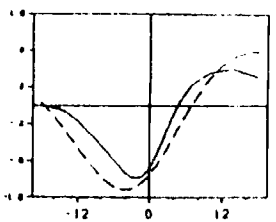
44 IVT82	N				
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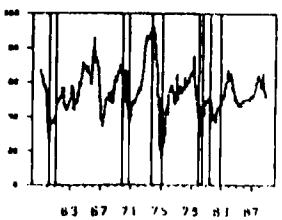
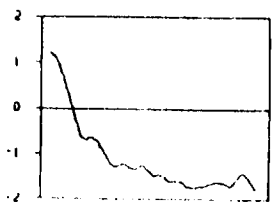
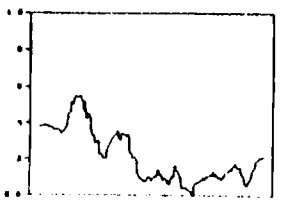
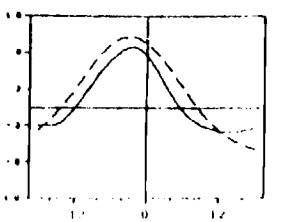
1.4100	1.7500				
45 VENDOR	N				
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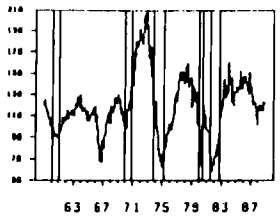
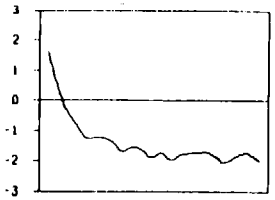
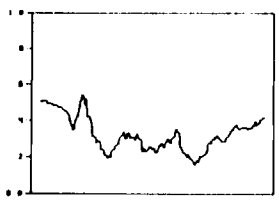
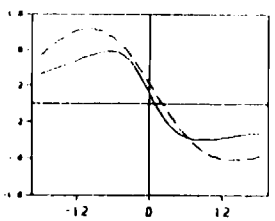
46 HSBP	N					
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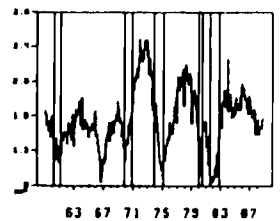
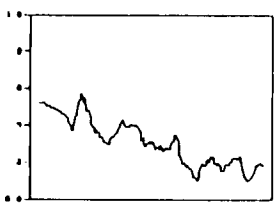
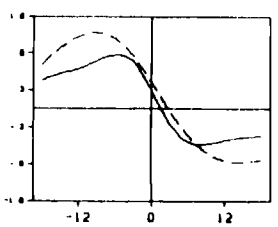
47 HSFR	N					
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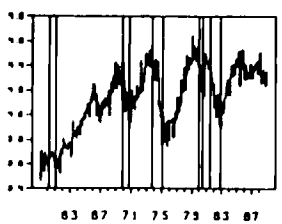
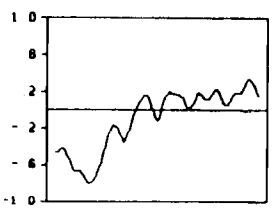
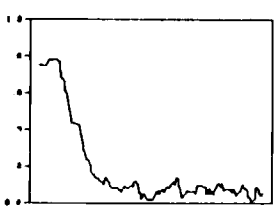
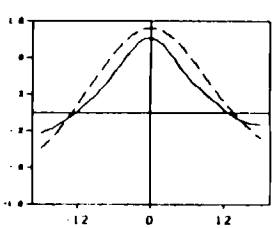
48 CONDO9	DLN					
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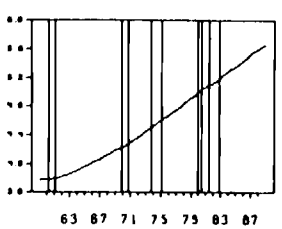
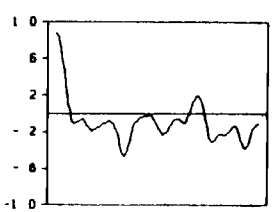
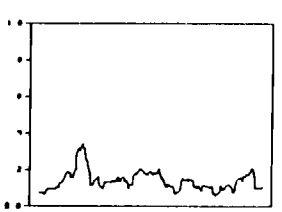
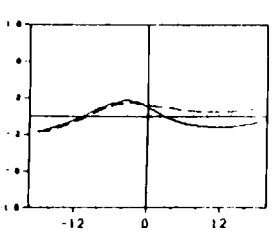
49 FMBASE	DLN					
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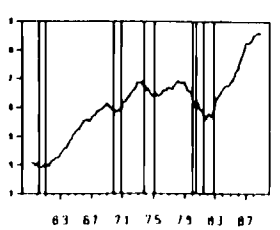
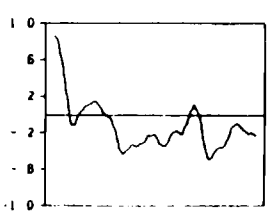
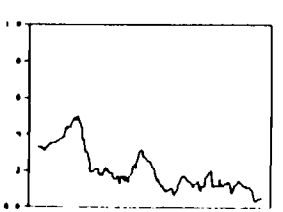
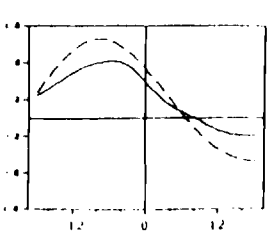
50 FMBASER	DLN					
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51 FM1 DLN

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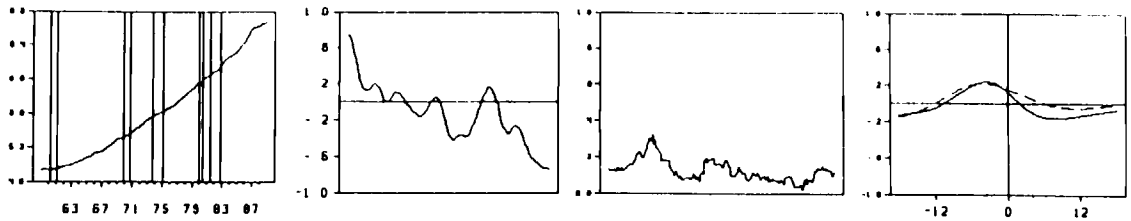

52 FM1D82 DLN

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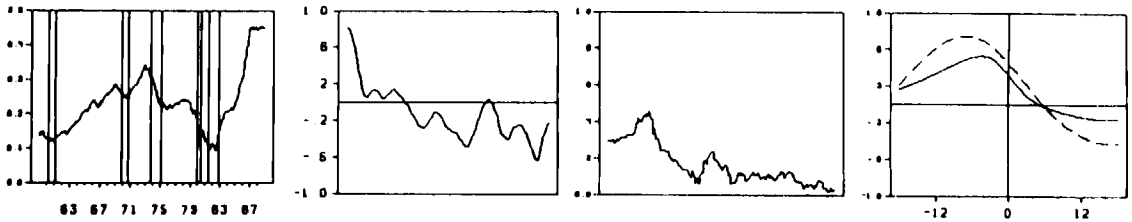

53 FM2 DLN

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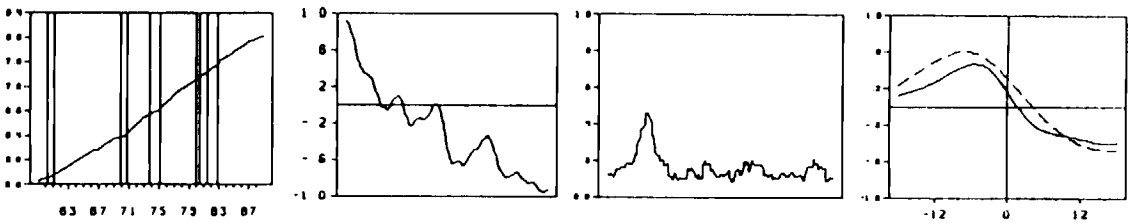

54 FM2D82 DLN

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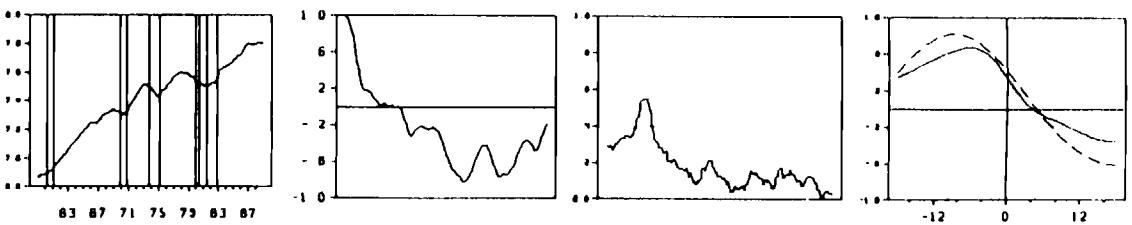

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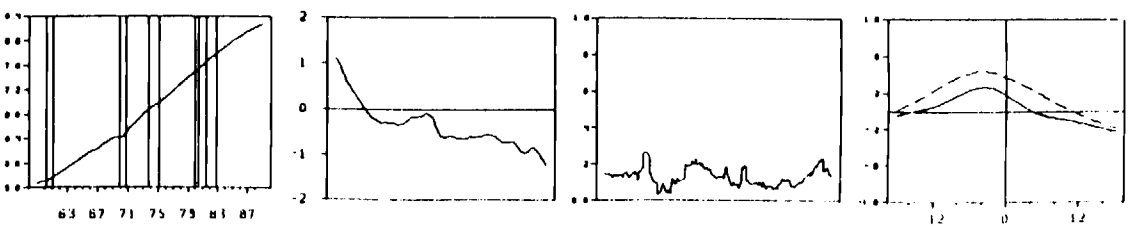
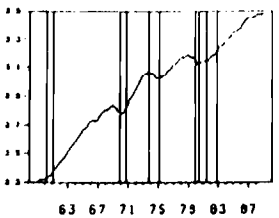
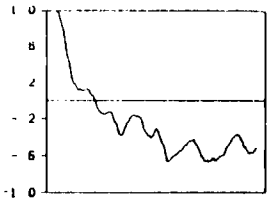
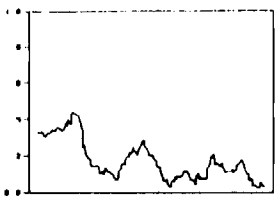
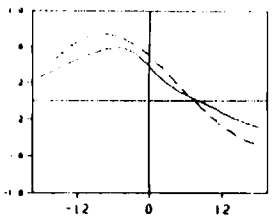


56	FM3R	DLN				
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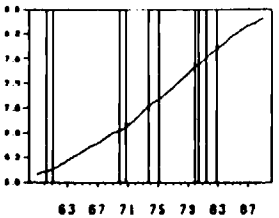
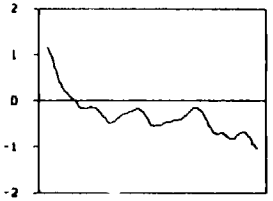
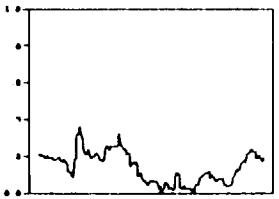
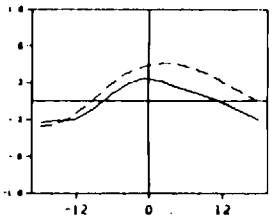
57	FML	DLN				
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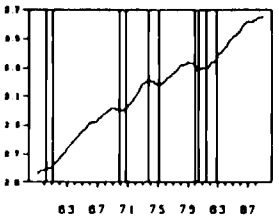
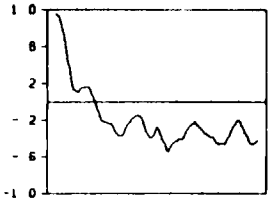
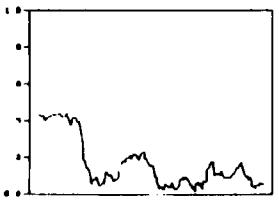
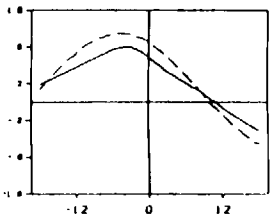
58	FMLR	DLN				
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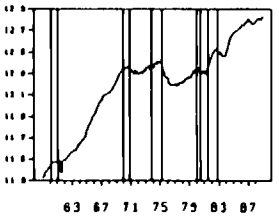
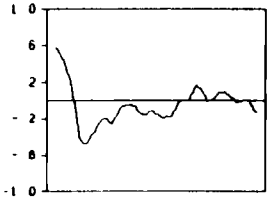
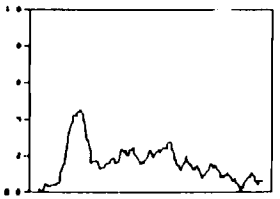
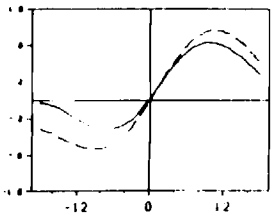
59	FCLN82	DLN				
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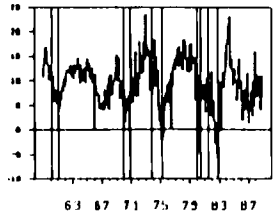
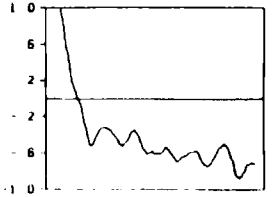
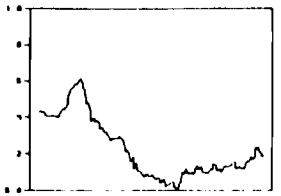
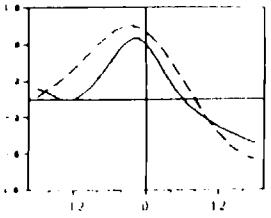
60	FCBCUC	N				
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61 FCBCUCY	N	
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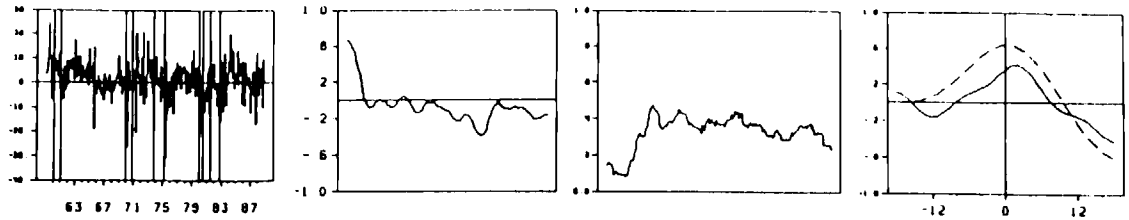

62 FCLBMCY	N	
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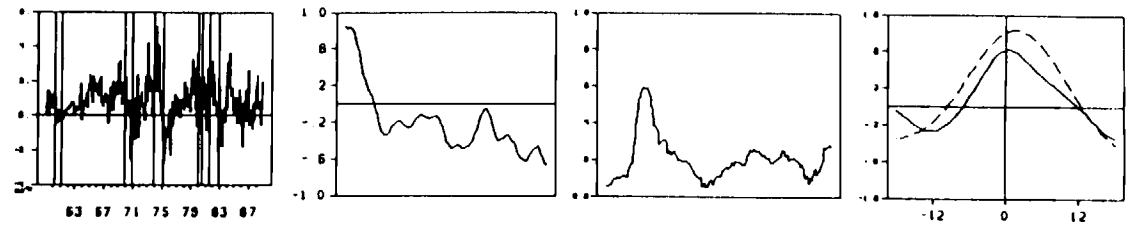
-.0263	.0521	



63 CCBPY	DLN	
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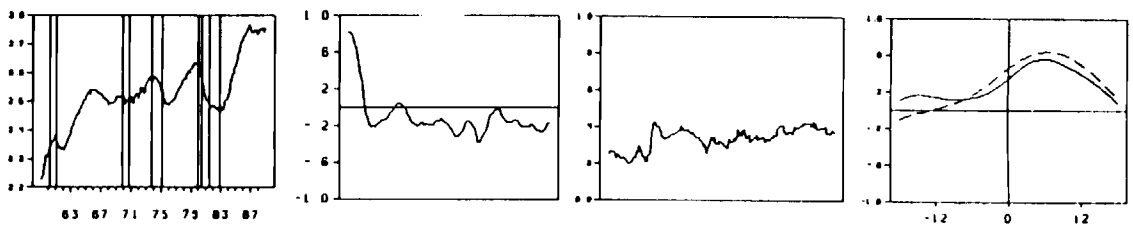

64 CCI30M	DLN	
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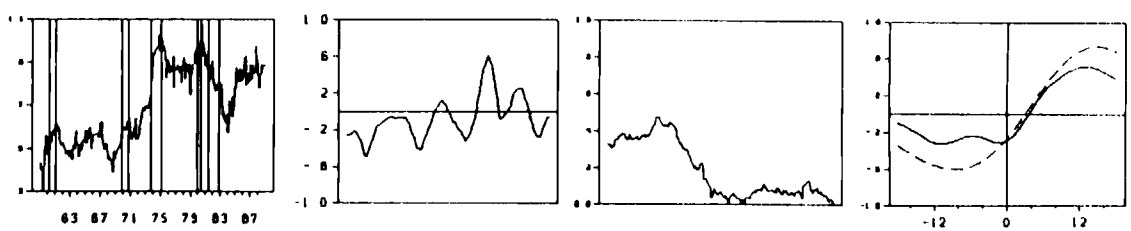
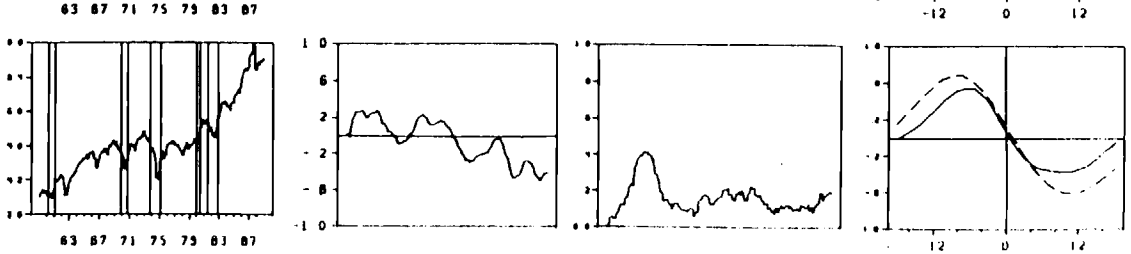
-.1447	.1239	



65 FSPCOM	DLN	
.0045	.0355	
-.1341	.1102	



66 FSPIN	DLN		
.0047	.0365		
-.1429	.1142		
67 FSDJ	DLN		
.0036	.0361		
-.1446	.1001		
68 FSVOL	DLN		
.0105	.1807		
-.5293	.6001		
69 FYFF	D		
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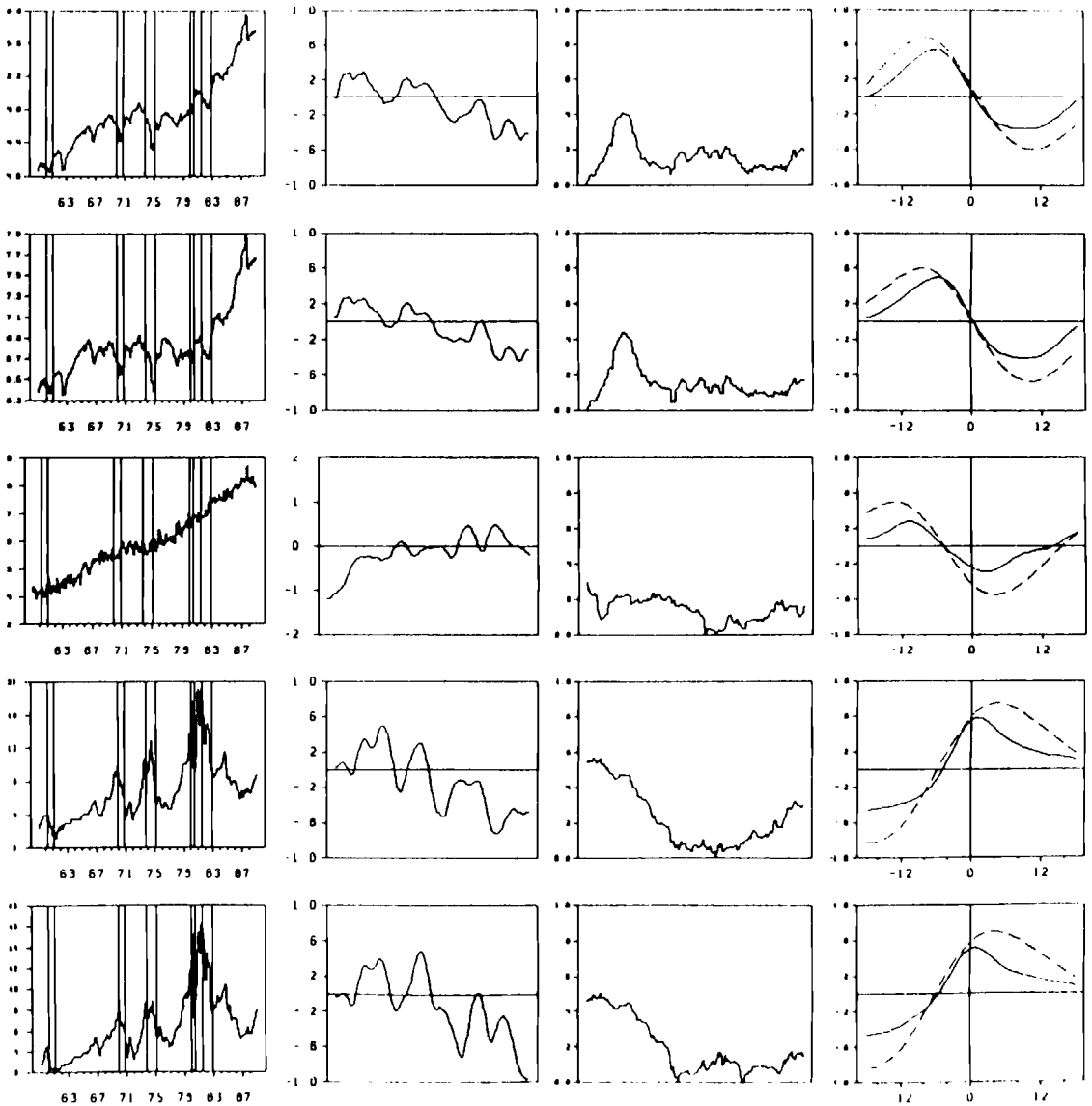
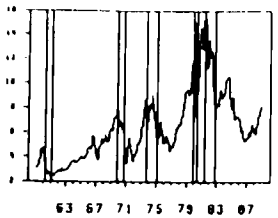
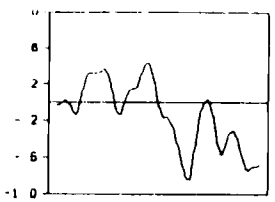
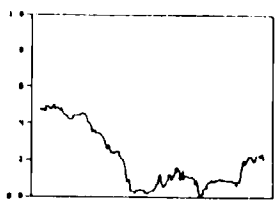
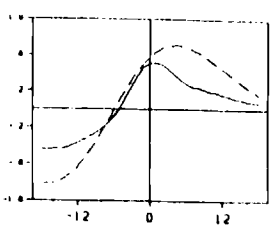
-6.6300	3.0600		
70 FYGM3	D		
.0150	.5733		
-4.6200	2.6100		



71 FYGM6	D				
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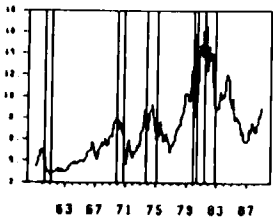
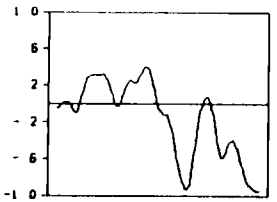
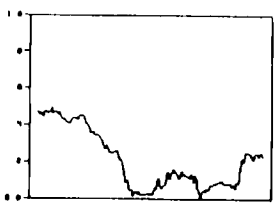
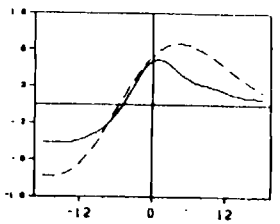
-4.2300	2.1700				
72 FYGT1	D				
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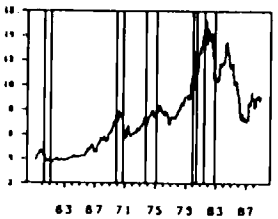
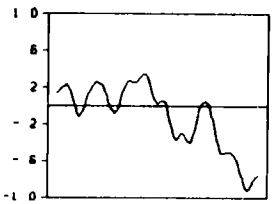
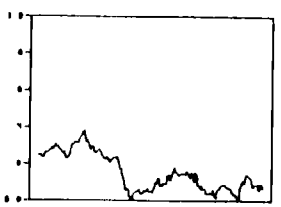
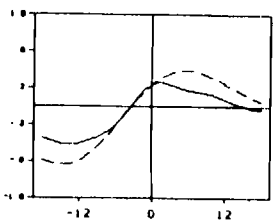
73 FYGT10	D				
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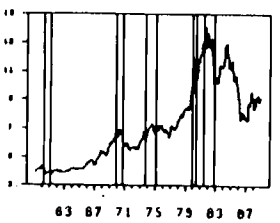
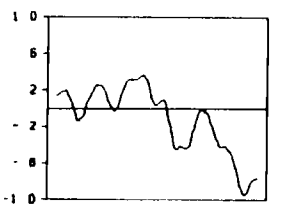
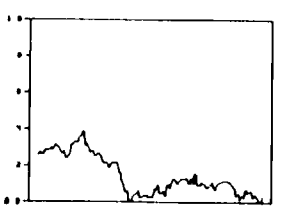
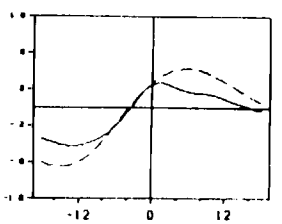
74 FYGL	D				
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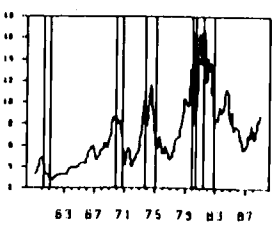
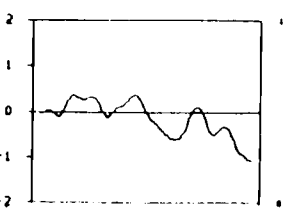
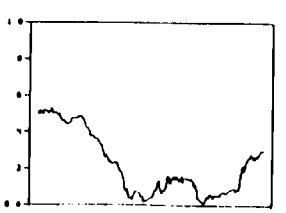
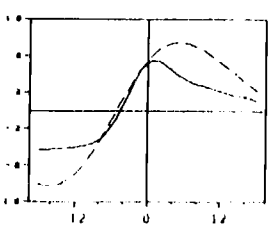
75 FYCP	D				
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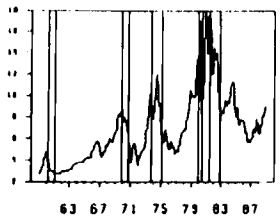
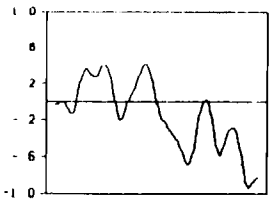
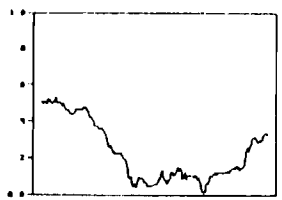
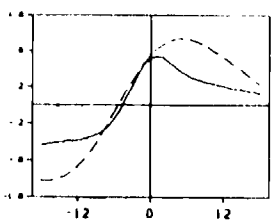
76 FYBAC	D					
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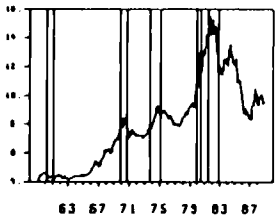
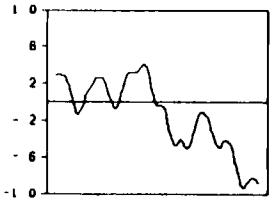
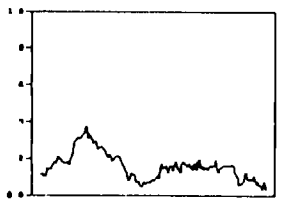
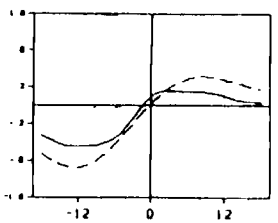
-6.0300	3.0900					
77 FYAAAC	D					
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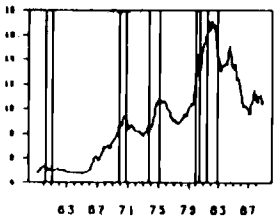
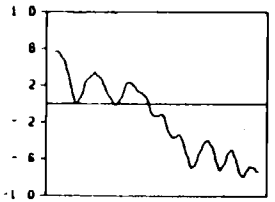
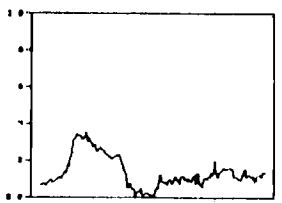
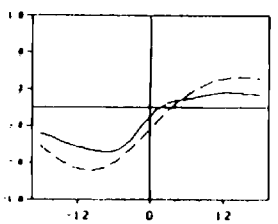
78 FYBAAC	D					
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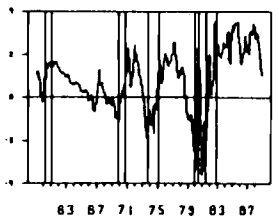
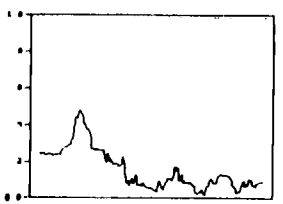
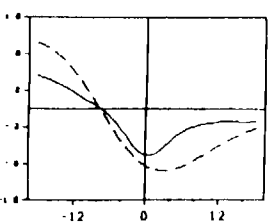
-1.0200	1.1500					
79 GL_GM3	N					
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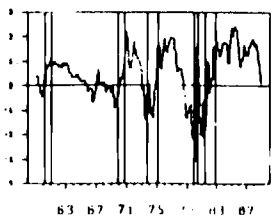
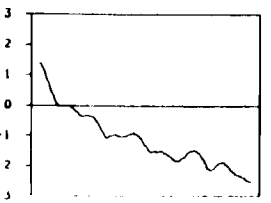
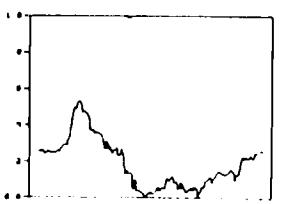
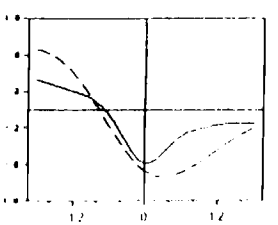
80 G10_G1	N					
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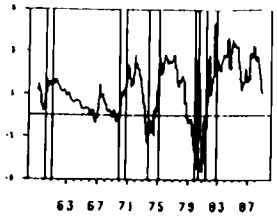
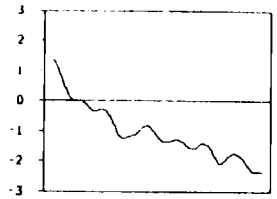
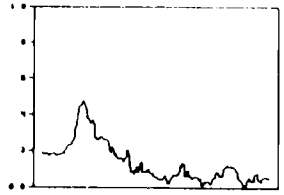
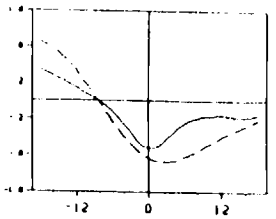
81 G10_GM3	N				
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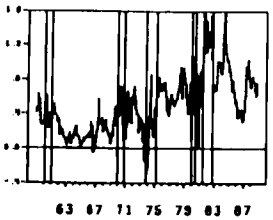
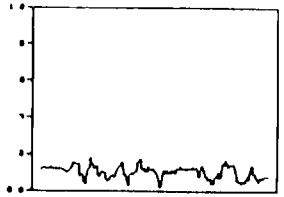
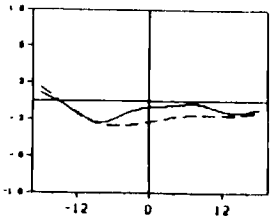
-2.6500	4.4200				
82 G1_GM6	N				
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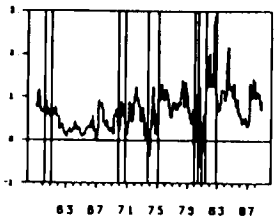
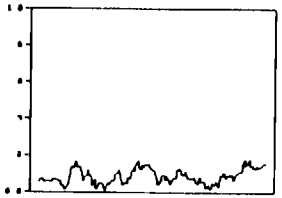
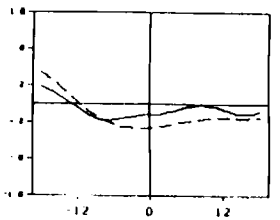
-.3900	1.6000				
83 G1_GM3	N				
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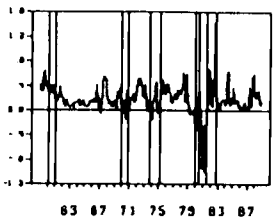
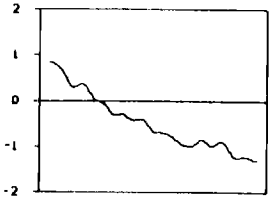
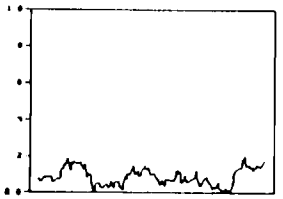
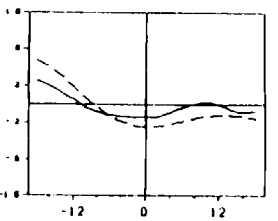
84 GM6_GM3	N				
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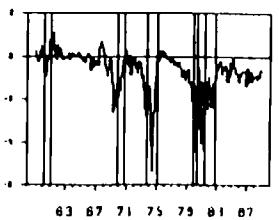
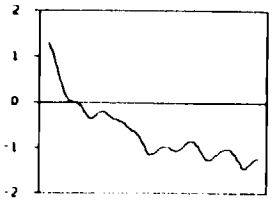
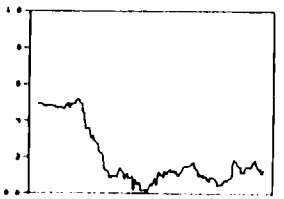
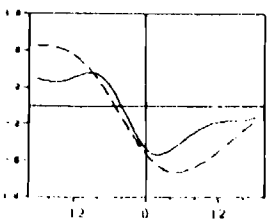
85 GM3_FF	N				
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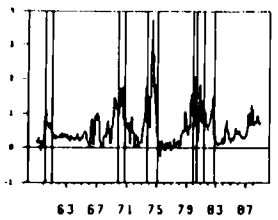
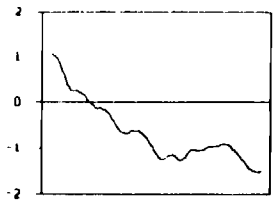
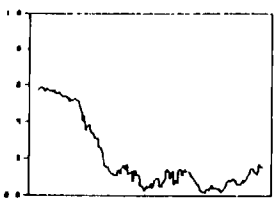
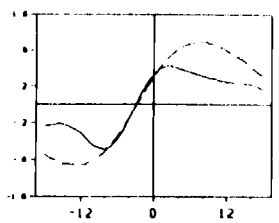
86 CP6_GM6	N				
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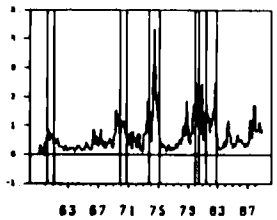
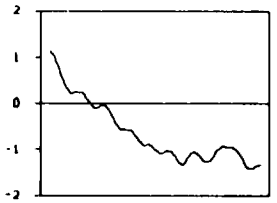
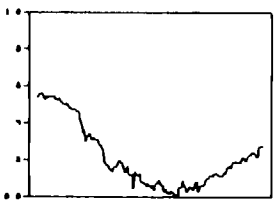
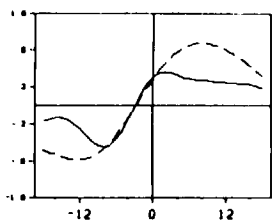
87 BAC_GM3	N				
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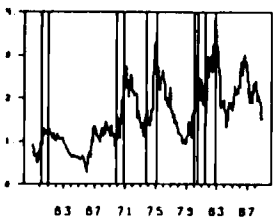
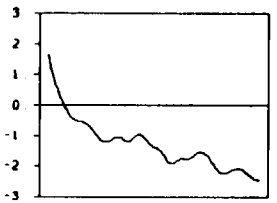
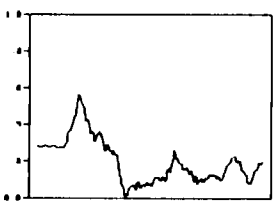
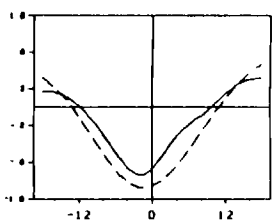
88 BAA_G10	N				
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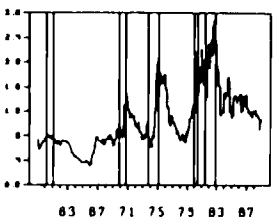
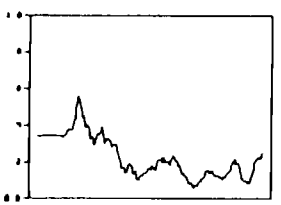
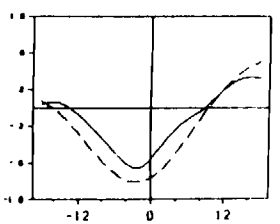
89 BAA_AAA	N				
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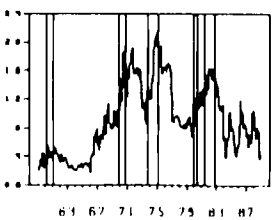
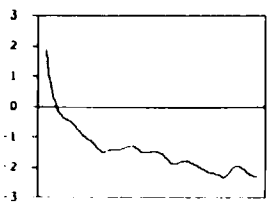
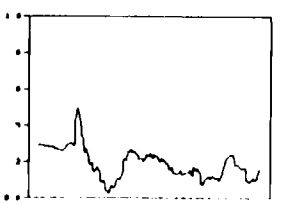
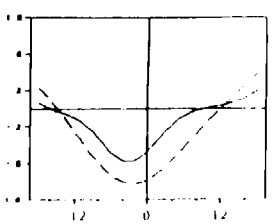
90 AAA_GL	N				
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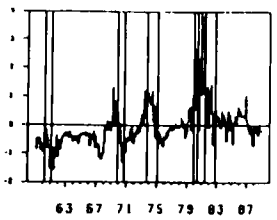
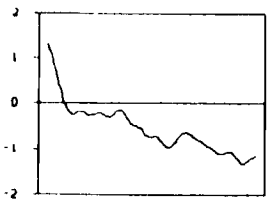
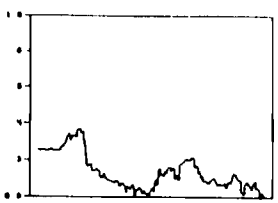
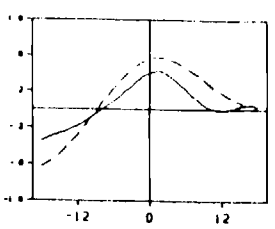
91 FF_CP6	N					
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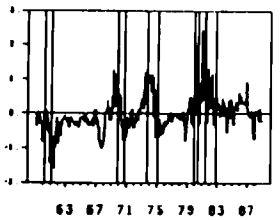
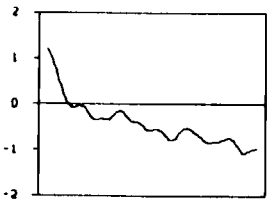
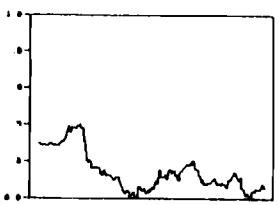
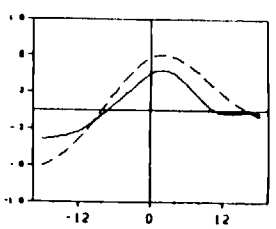
92 FF_BAC	N					
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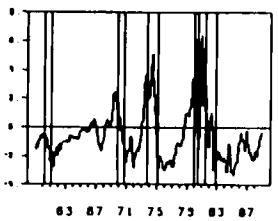
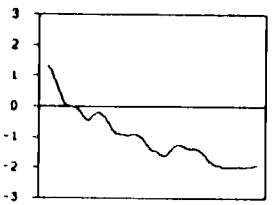
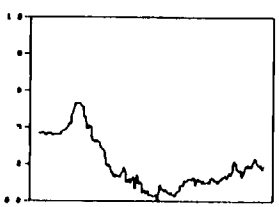
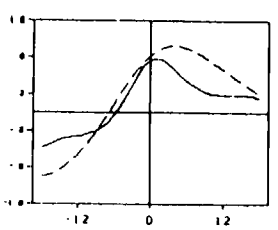
93 FF_G10	N					
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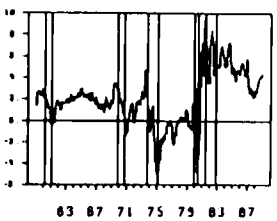
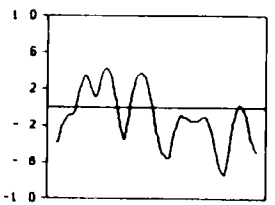
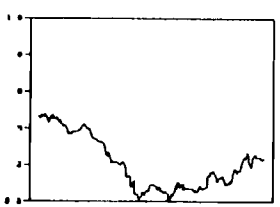
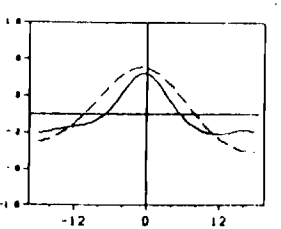
94 FYFFR	D					
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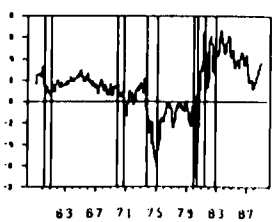
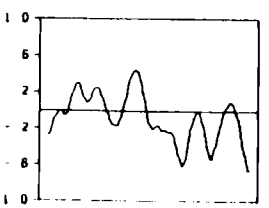
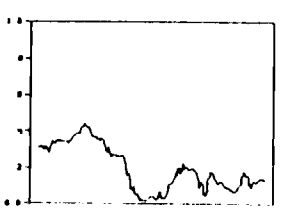
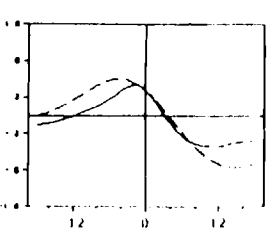
95 FYGM3R	D					
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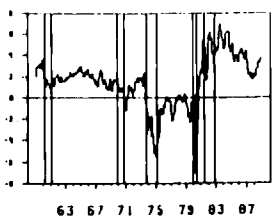
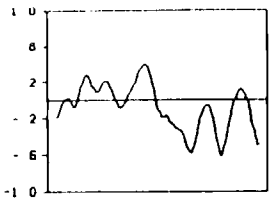
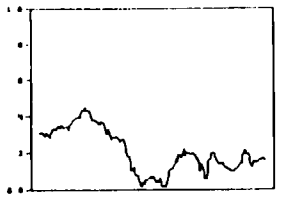
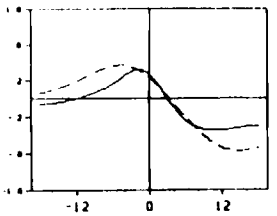
96 FYGM6R	D				
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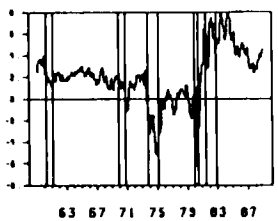
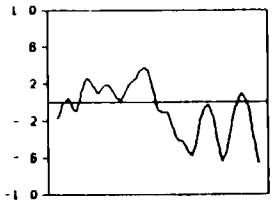
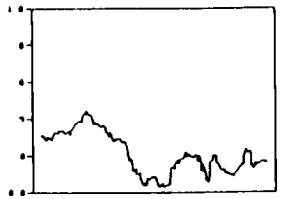
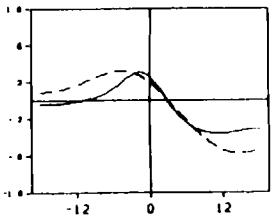
97 FYGT1R	D				
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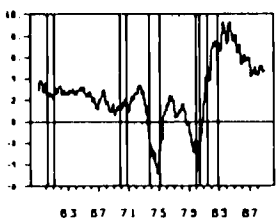
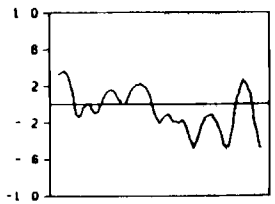
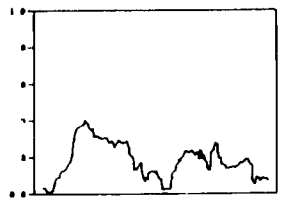
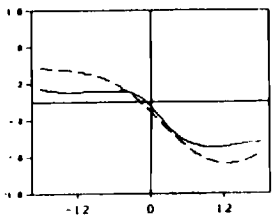
98 FYGT10R	D				
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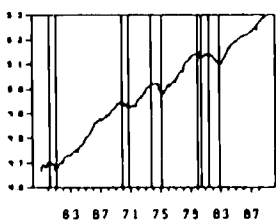
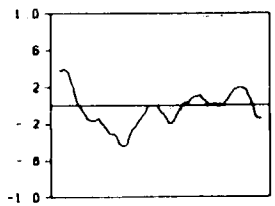
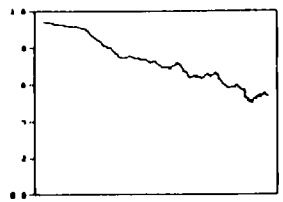
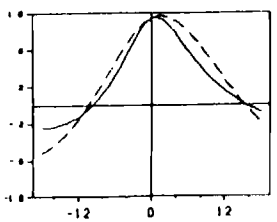
99 LPMHUADJ	DLN				
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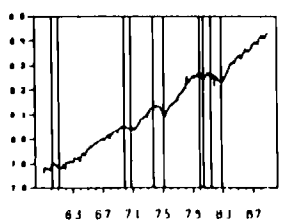
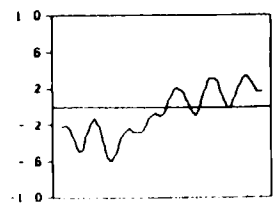
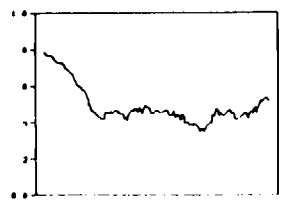
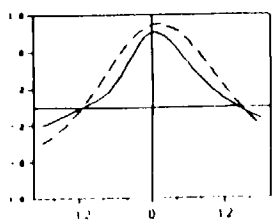
100 LHOURS	DLN				
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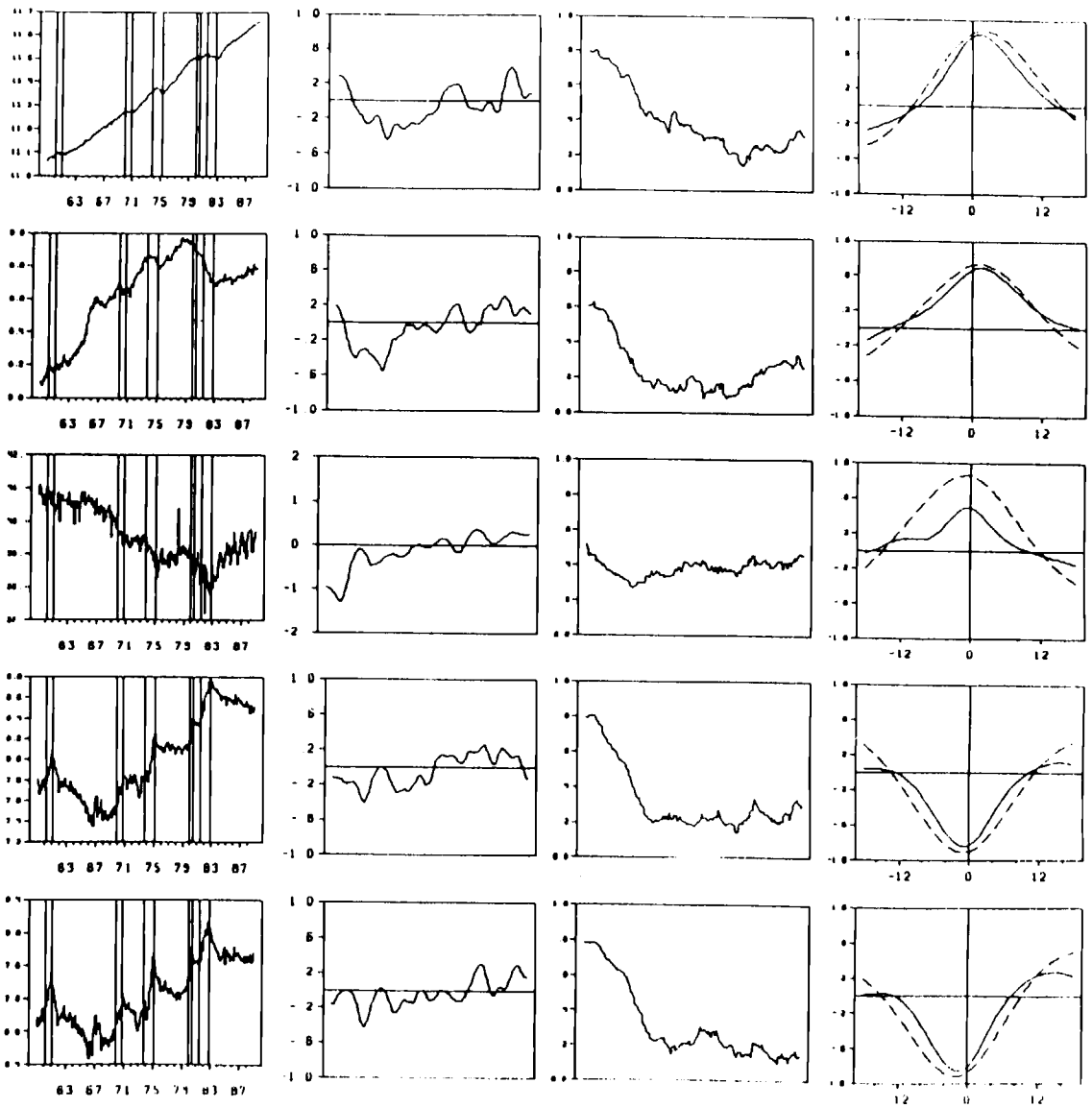
102	LHTNAG	DLN	.0019	.0176	-.0556	.0717
103	LHCH	D	-.0031	.2564	-1.5000	1.4000
104	LHNAGP	DLN	.0022	.0470	-.2120	.1618
105	LHNAPS	DLN	.0022	.0677	-.2401	.2839



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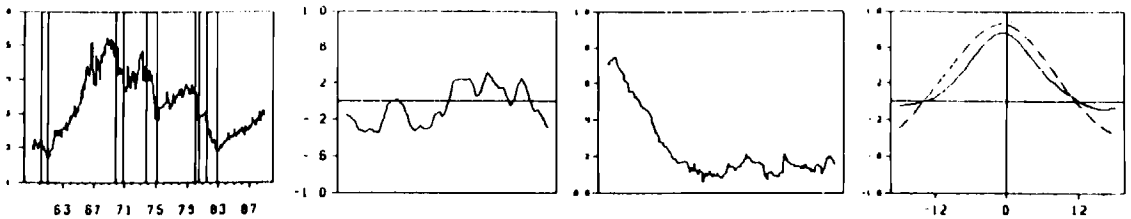

107 LHUL DLN

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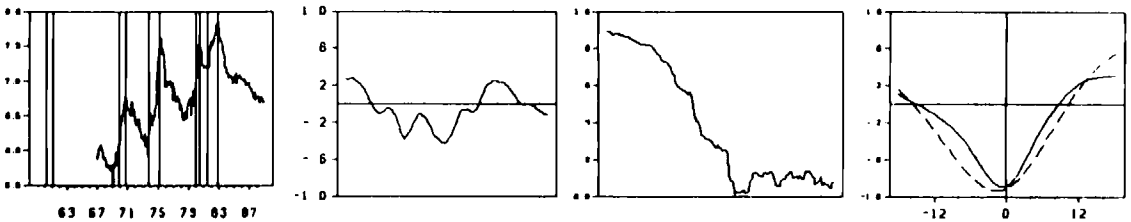

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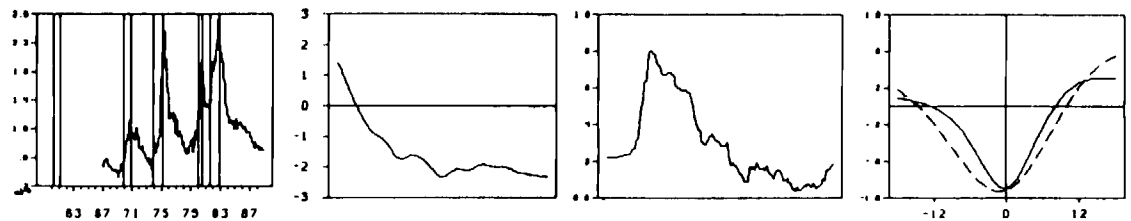

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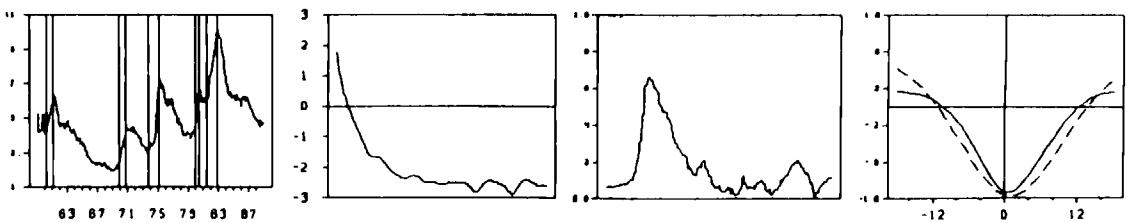

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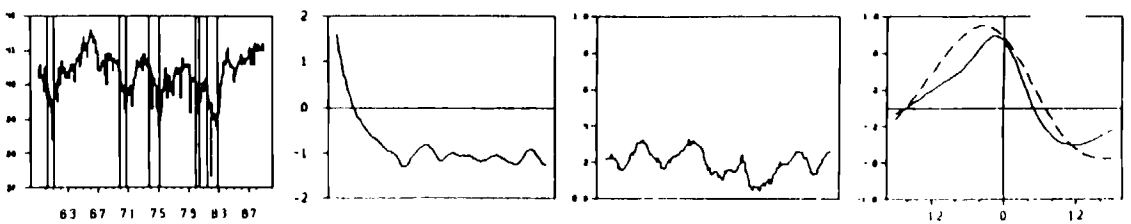
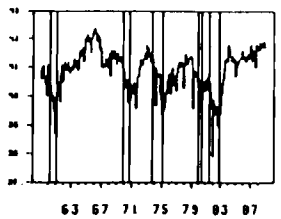
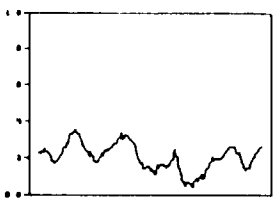
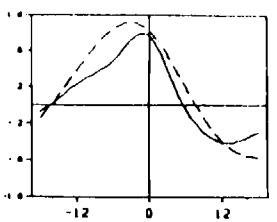


111 LPHRD	N					
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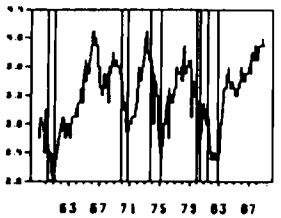
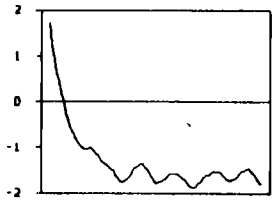
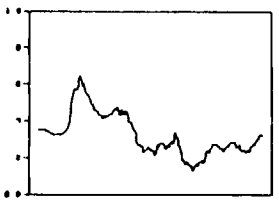
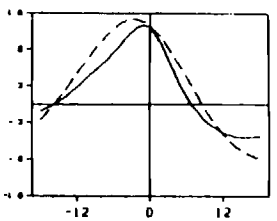
112 LPMOSA	N					
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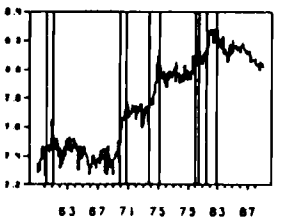
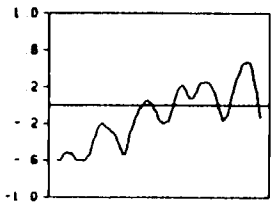
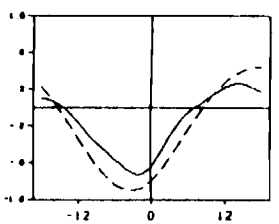
113 LHU5	DLN					
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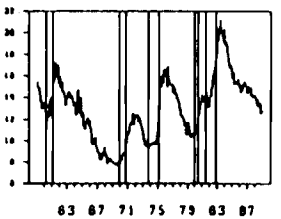
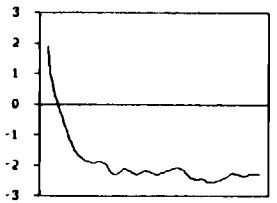
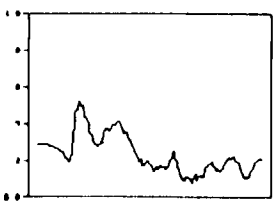
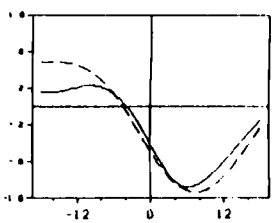
114 LHU680	N					
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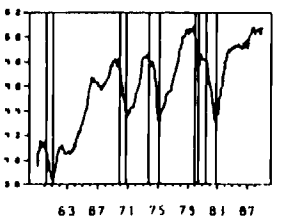
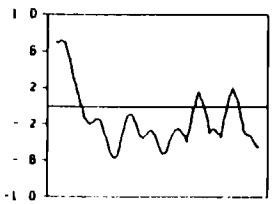
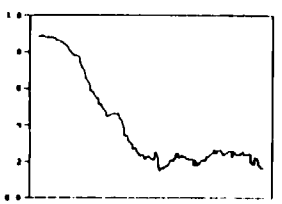
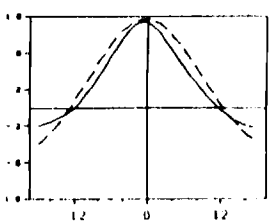
115 LHEL	DLN					
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116 LHELX N

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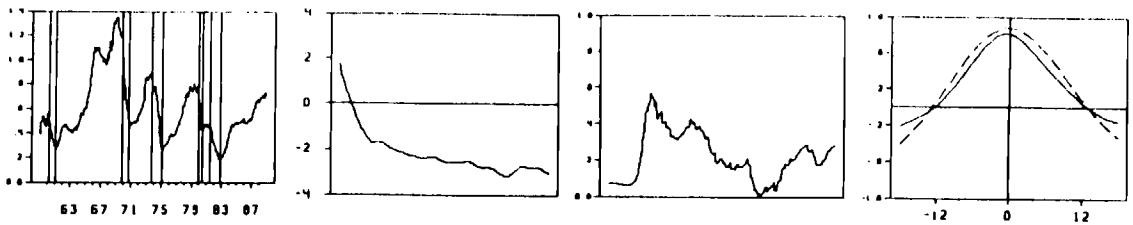

117 LUINC DLN

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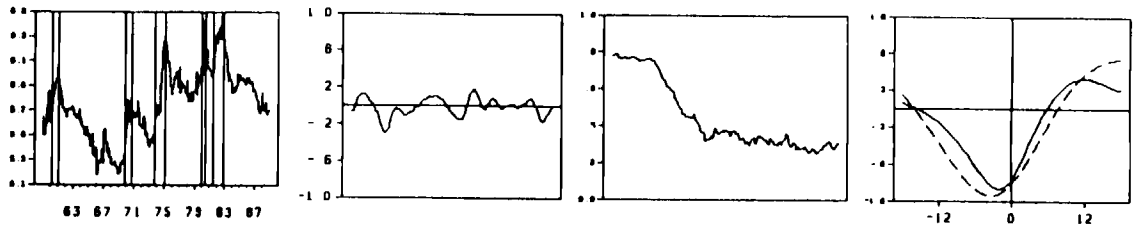

118 LPNAG DLN

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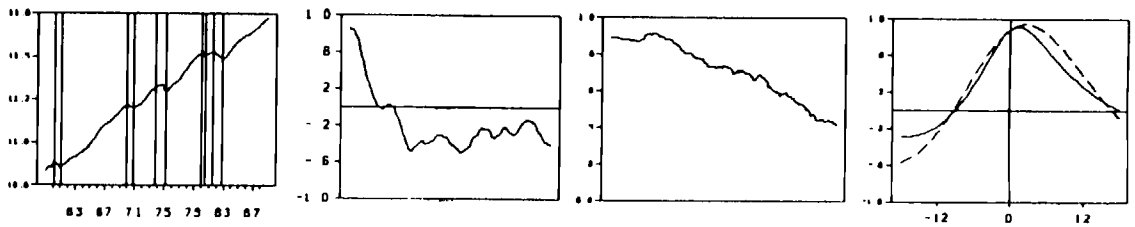

119 LPMI DLN

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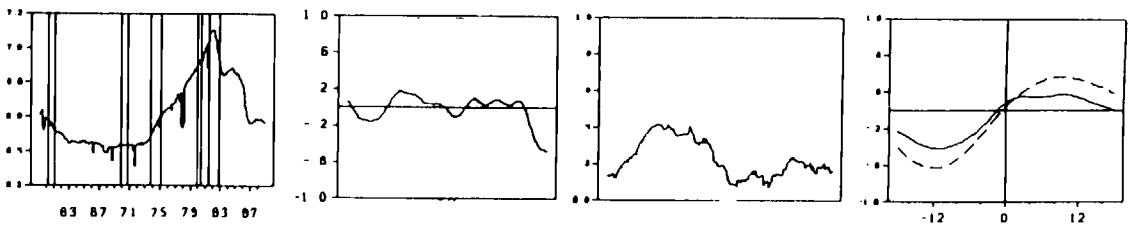

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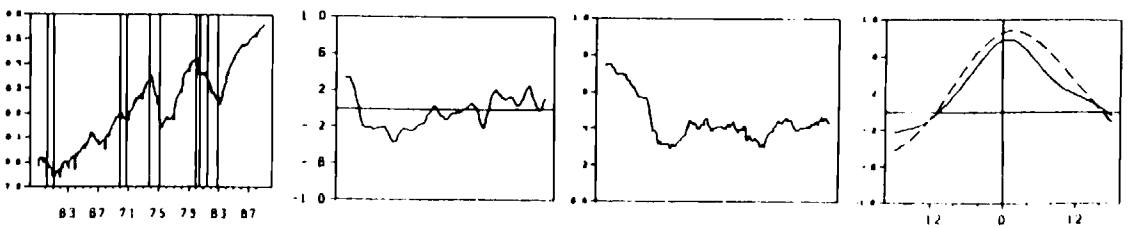
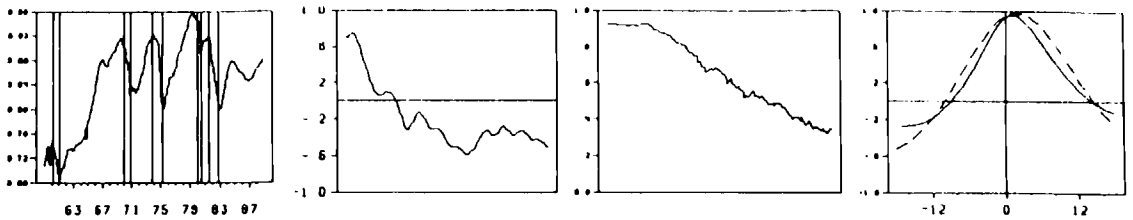


121 LPEM	DLN		
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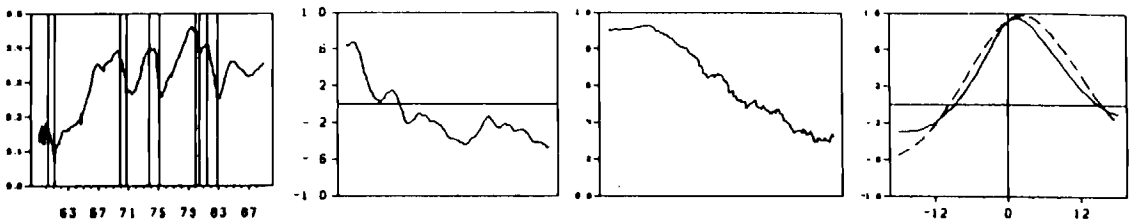
122 LPED	DLN		
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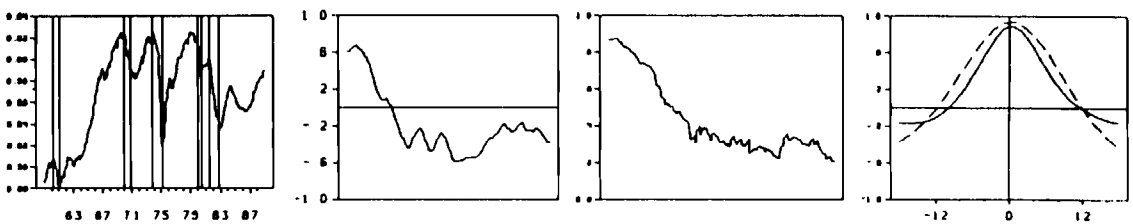
123 LPEN	DLN		
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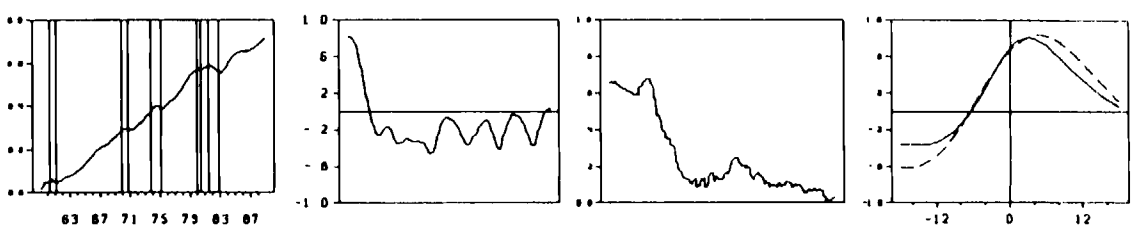
124 LPTW	DLN		
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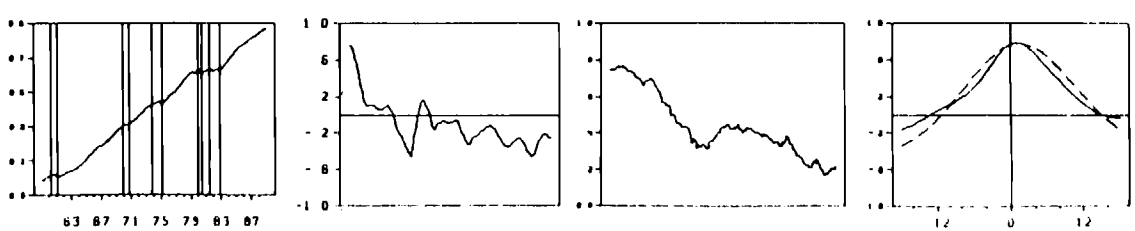
125 LPTR	DLN		
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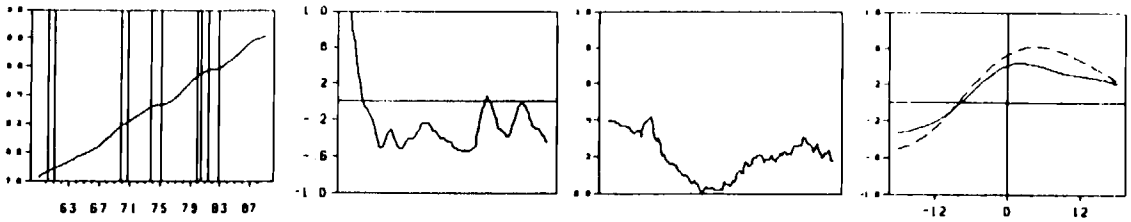

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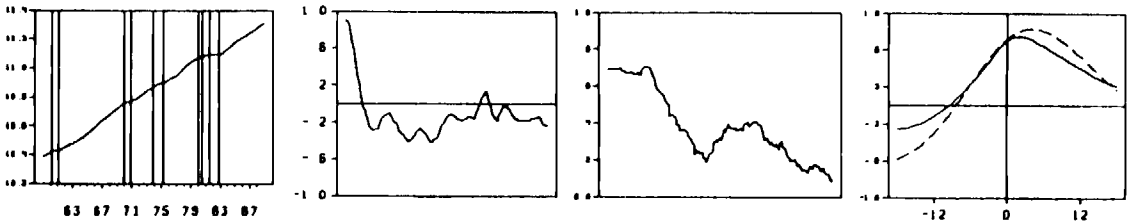

128 LPGOV DLN

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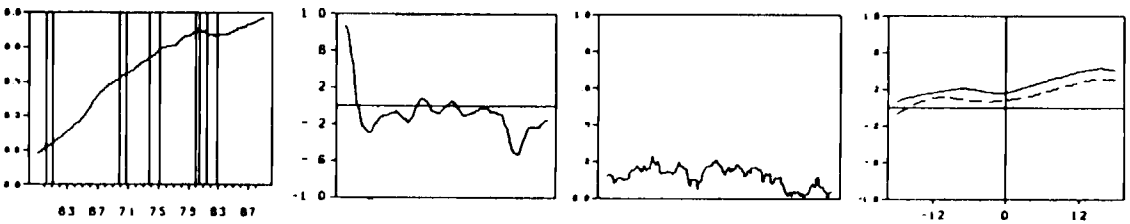

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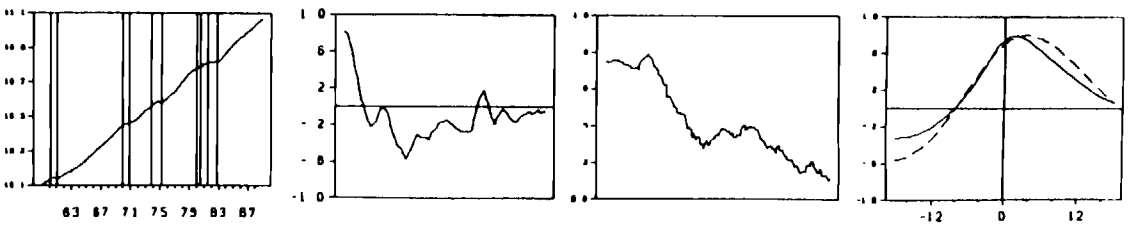

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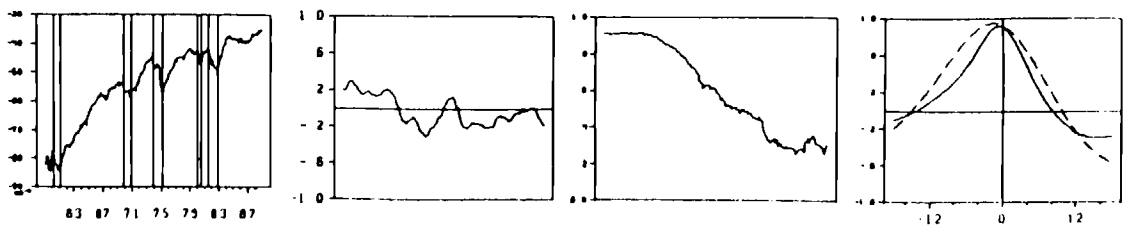

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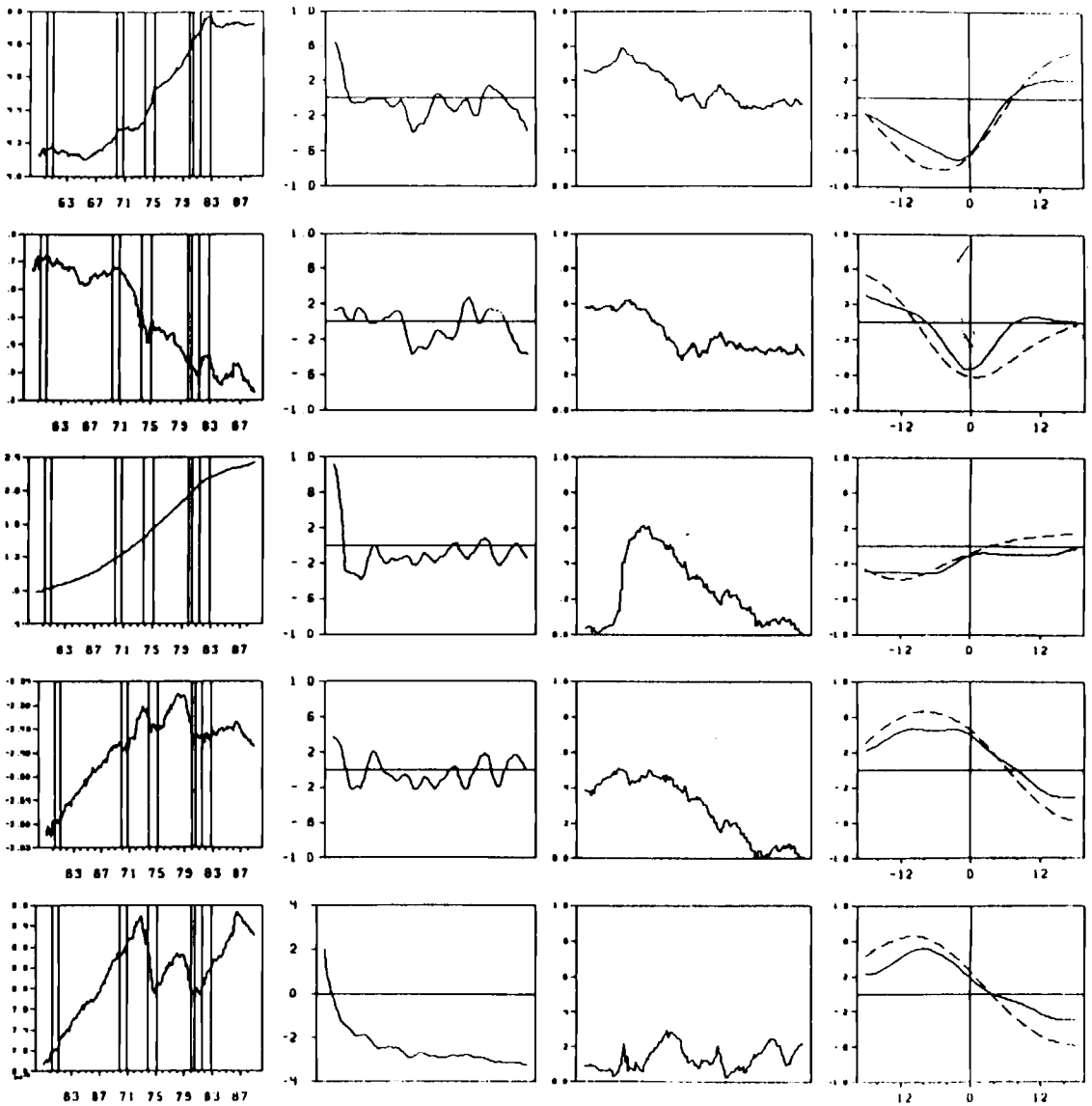
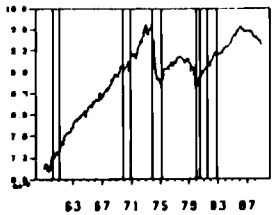
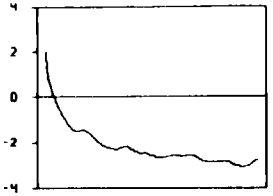
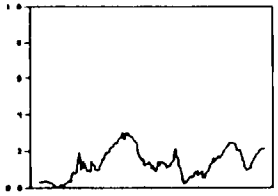
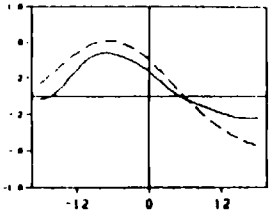
132	PLM82	DLN	-.0013	.0094	-.0563	.0356
133	LEHM	DLN	.0044	.0040	-.0137	.0209
134	LEHM82	DLN	.0004	.0043	-.0168	.0173
135	RPWGMS	N	.0846	.0073	.0676	.0967



136	RPWGMDS	N				
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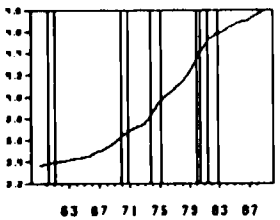
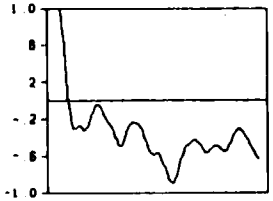
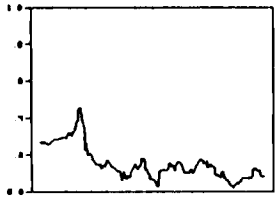
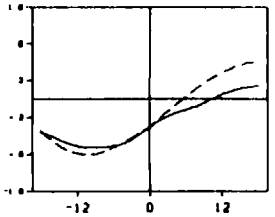
137	PUNEW	DLN				
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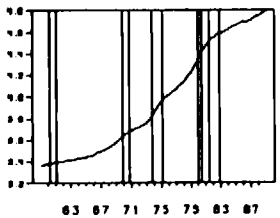
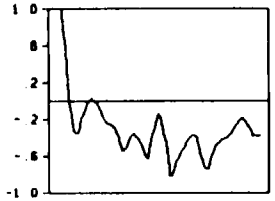
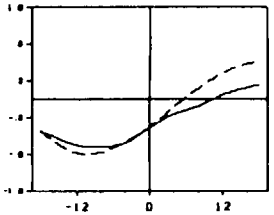
138	PZUNEW	DLN				
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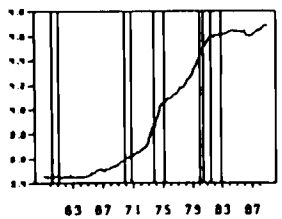
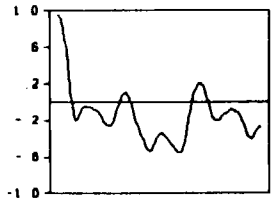
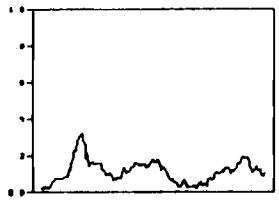
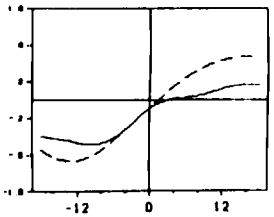
139	PW	DLN				
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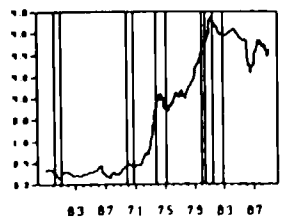
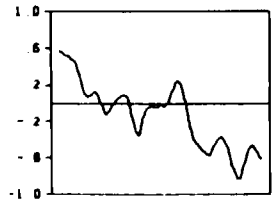
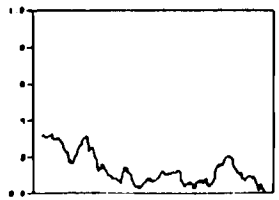
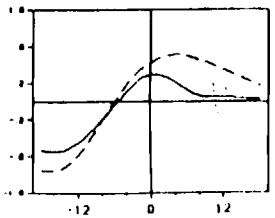
140	PW1200	DLN				
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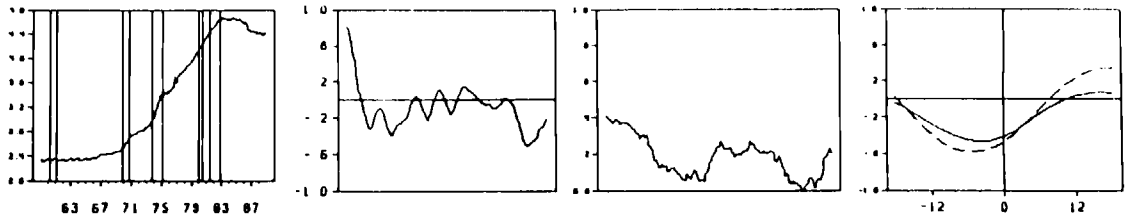

142 PWCMP DLN

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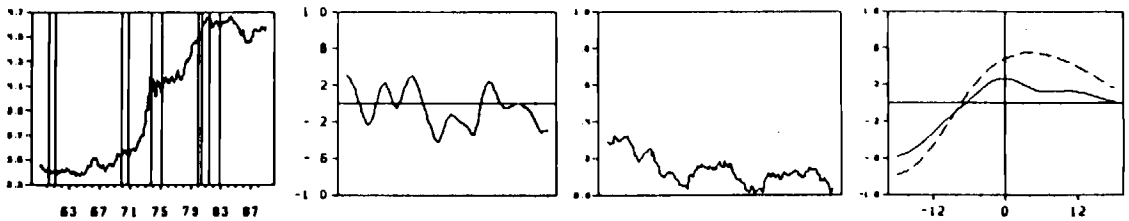

143 PWFC DLN

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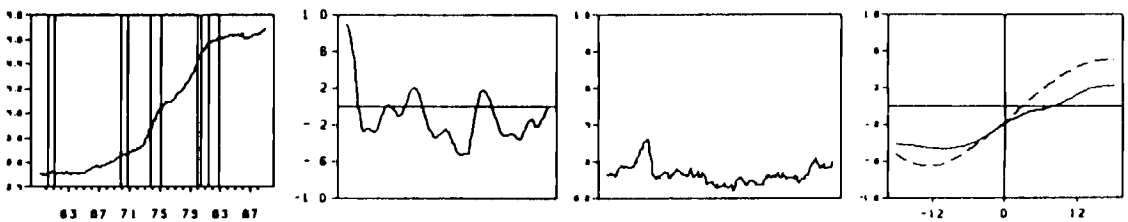

144 PWFP DLN

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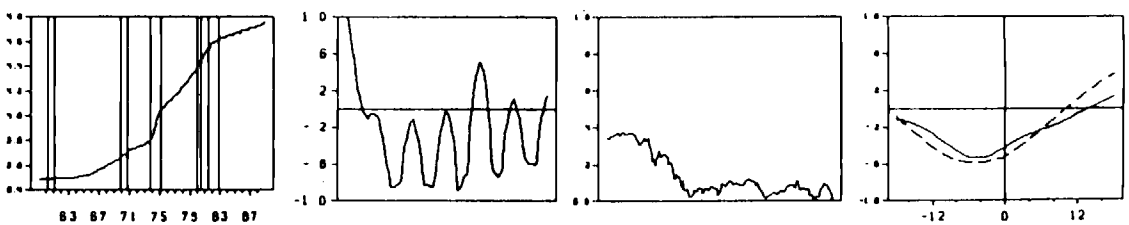

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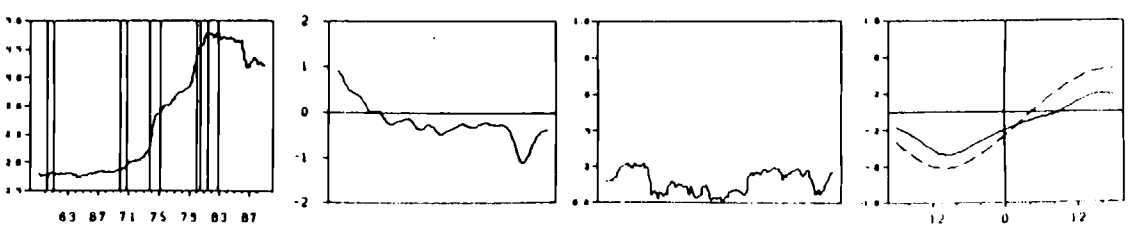

146 PWIC DLN

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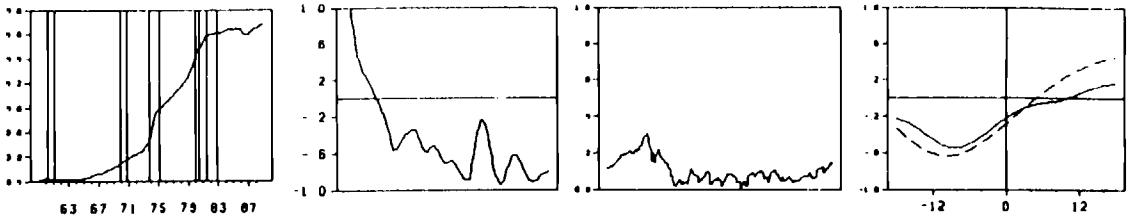

147 PWIMS DLN

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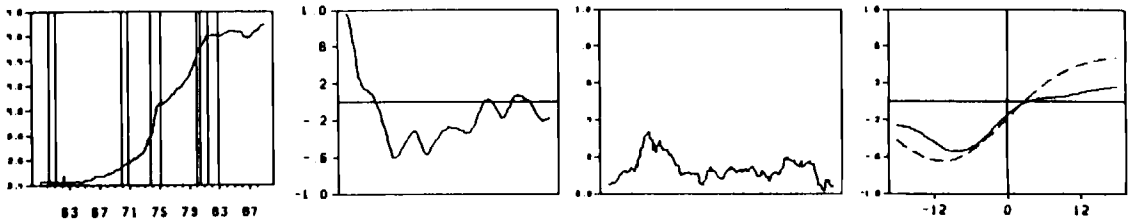

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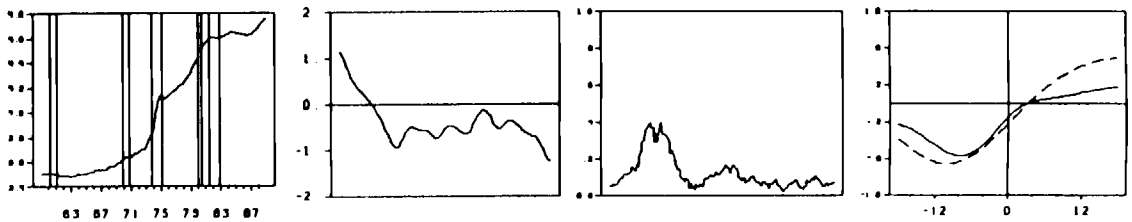

149 PSMC99A DLN

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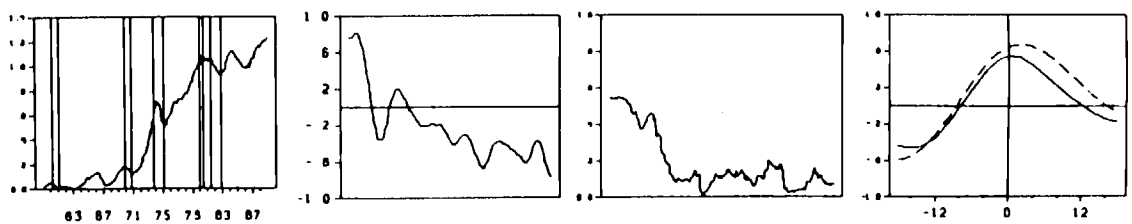

150 PSCCOM DLN

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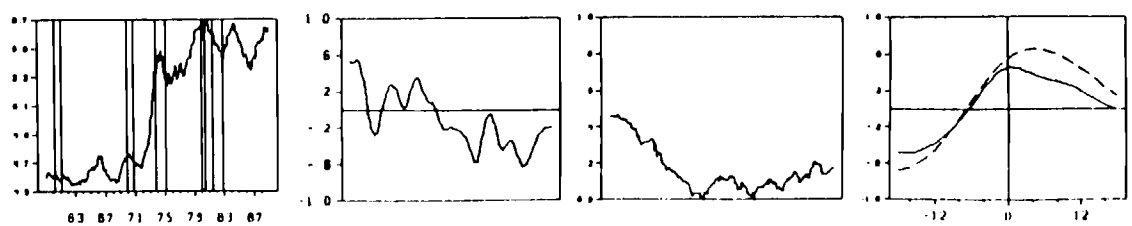

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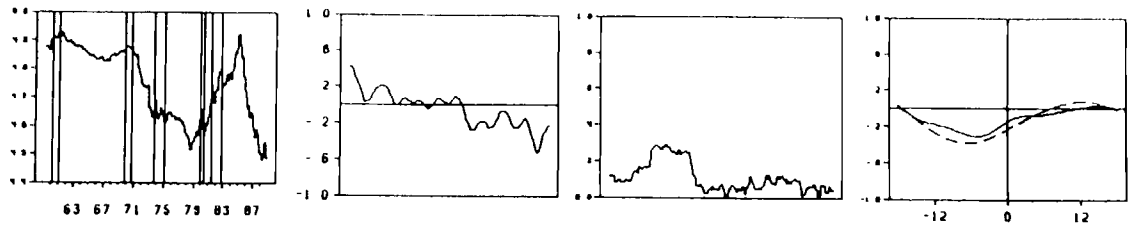

152 EXRWT2 DLN

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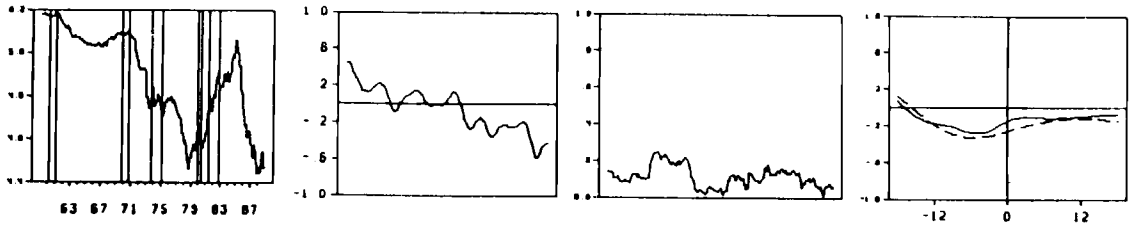

153 EXNWT1 DLN

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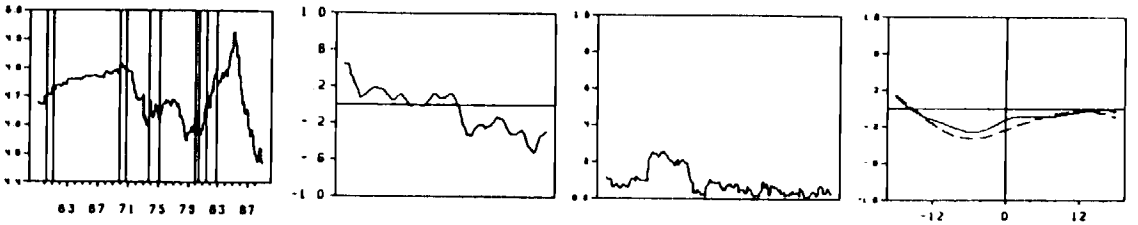

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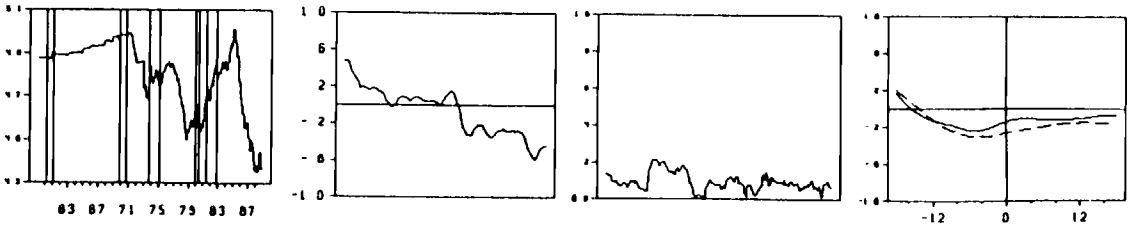

155 EXVUS DLN

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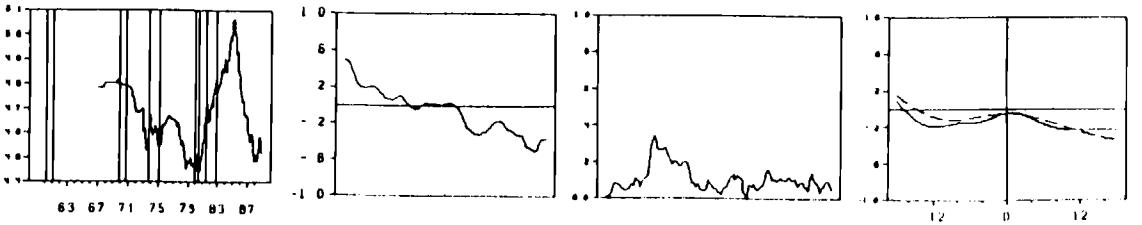
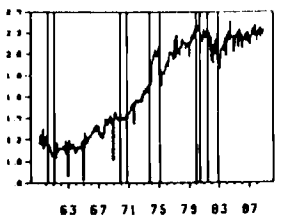
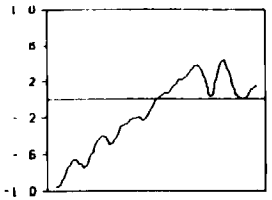
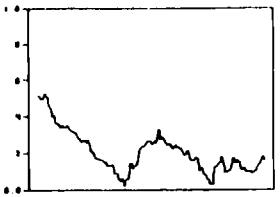
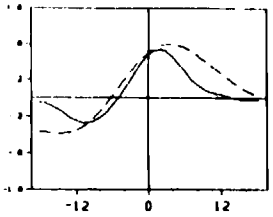


156 IMY1	DLN				
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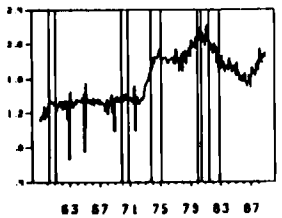
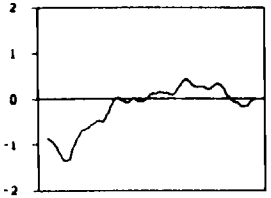
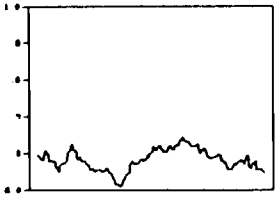
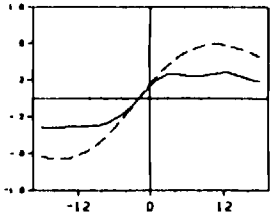
157 EXY1	DLN				
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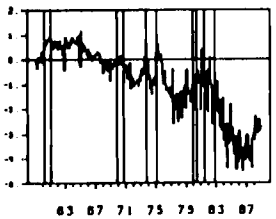
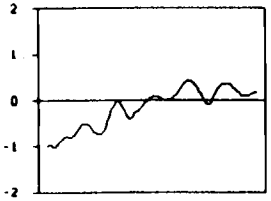
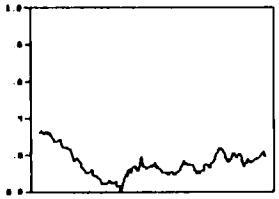
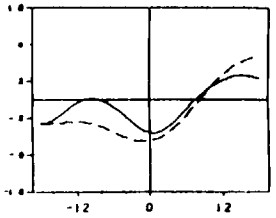
158 TB1	D				
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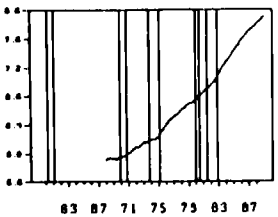
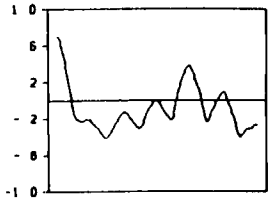
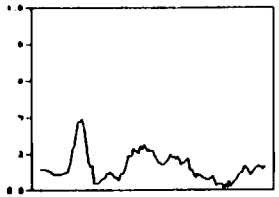
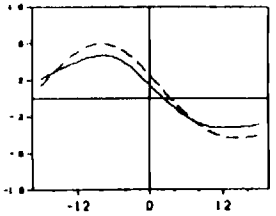
159 FBD	DLN				
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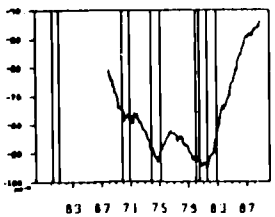
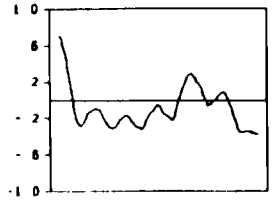
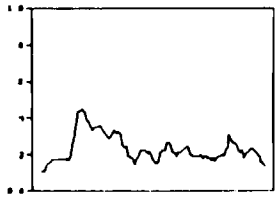
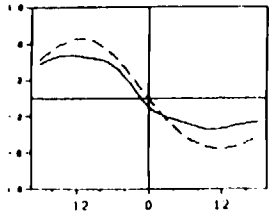
160 FBDY	DLN				
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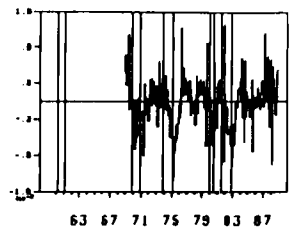
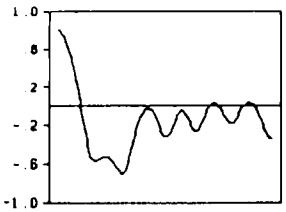
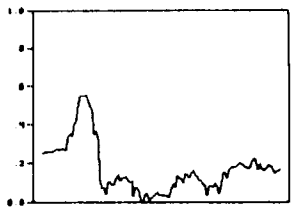
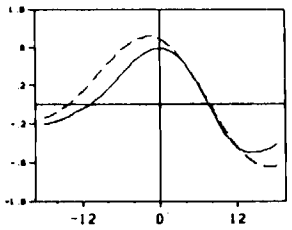
161	FBYS	N				
	-.0001	.0027				
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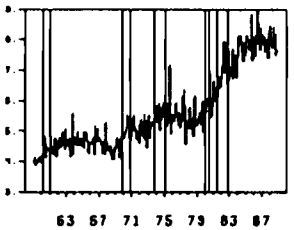
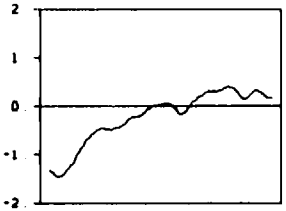
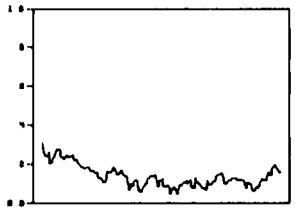
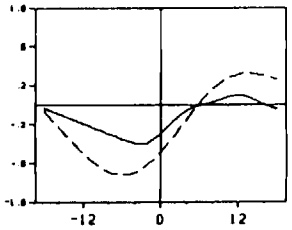
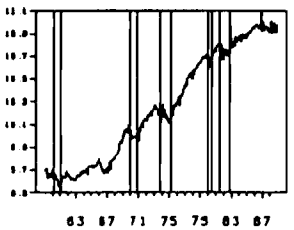
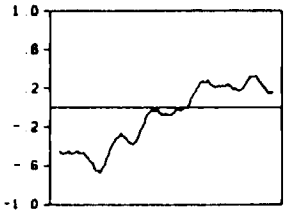
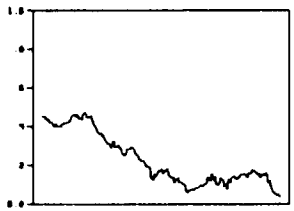
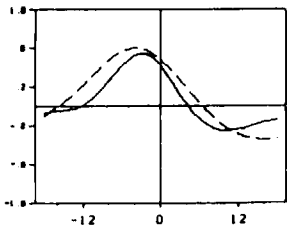
162	FAIL	DLN				
	.0102	.4310				
	-1.6337	1.8410				
163	INC	DLN				
	.0036	.0356				
	-.1656	.1709				

Table 1
Univariate Descriptive Statistics
and Bivariate Correlations with the Index of Coincident Indicators

					- - Comovements with Index of Coincident Indicators - -											
					- - Spectral Density - -				- - - - Coherence - - - -				Filtered Cross-Correlation			
													- - - $a_{24}(L)$ - - -		$a_B(L)$	
Series		Trans.	DF_t	DF_μ	>6 yrs	2-6 yrs	1-2 yrs	<1 yr	>6 yrs	2-6 yrs	1-2 yrs	<1 yr	$r_{xy}(k_{max})$	$r_{xy}(0)$	k_{max}	k_{max}
Output and Capacity Utilization																
1	ICI	DLN	-2.37	-0.75	1.80	4.37	1.58	0.70	1.00	1.00	1.00	1.00	1.00	1.00	0	0
2	IP	DLN	-2.34	-0.99	1.34	3.78	1.69	0.74	0.98	0.99	0.98	0.89	0.99	0.99	0	0
3	IPC	DLN	-2.53	-0.92	0.61	1.83	0.87	0.97	0.86	0.85	0.80	0.66	0.88	0.85	-1	-3
4	IPCN	DLN	-2.49	-0.99	0.51	1.10	0.57	1.05	0.76	0.72	0.61	0.40	0.80	0.78	-1	-2
5	IPCD	DLN	-2.64	-1.20	0.41	1.37	0.95	0.99	0.80	0.80	0.77	0.62	0.82	0.79	-1	-4
6	IPD	DLN	-2.56	-0.79	1.18	3.13	1.40	0.82	0.97	0.97	0.96	0.82	0.98	0.98	0	0
7	IPN	DLN	-2.39	-0.85	0.85	2.97	2.02	0.77	0.87	0.87	0.82	0.56	0.92	0.89	-1	-2
8	IPMIN	DLN	-1.76	-2.06	0.51	0.63	0.83	1.05	0.45	0.46	0.46	0.35	0.48	0.45	2	3
9	IPUT	DLN	-0.98	-3.71	1.51	0.31	0.43	1.09	0.40	0.41	0.38	0.18	0.46	0.46	-1	0
10	IPE	DLN	-2.88	-0.78	1.70	5.03	0.96	0.72	0.83	0.83	0.82	0.50	0.90	0.87	1	3
11	IPMFG	DLN	-2.47	-0.78	1.29	3.77	1.72	0.74	0.98	0.98	0.98	0.87	0.98	0.98	0	-1
12	IPM	DLN	-1.99	-1.26	0.84	2.69	1.86	0.81	0.95	0.95	0.93	0.78	0.96	0.96	0	0
13	IPI	DLN	-2.94	-0.42	0.95	3.38	1.13	0.83	0.92	0.92	0.90	0.63	0.93	0.92	-1	-1
14	IPF	DLN	-2.69	-0.88	1.58	3.22	1.04	0.84	0.94	0.93	0.89	0.71	0.96	0.96	0	0
15	IPX	D	-3.60	-3.41	0.83	5.05	1.56	0.65	0.98	0.98	0.97	0.87	0.98	0.98	0	-1
16	IPXDCA	D	-3.68	-3.67	1.05	4.86	1.25	0.69	0.96	0.96	0.95	0.79	0.97	0.97	0	0
17	IPXMCA	D	-3.00	-2.88	1.03	3.85	1.65	0.75	0.96	0.96	0.96	0.86	0.96	0.96	0	-1
Consumption, Sales and Income																
18	GMC82	DLN	-2.57	-0.95	0.91	0.90	0.30	1.08	0.62	0.60	0.54	0.22	0.73	0.66	-2	-4
19	GMCD82	DLN	-2.77	-0.49	0.35	0.50	0.40	1.11	0.63	0.62	0.49	0.19	0.70	0.65	-2	-3
20	GMPY	DLN	-2.49	0.27	5.67	1.24	0.53	0.94	0.43	0.47	0.46	0.47	-0.51	0.42	-17	-17
21	GMPY82	DLN	-1.85	-1.50	1.74	1.64	0.37	1.01	0.70	0.72	0.73	0.44	0.77	0.77	0	0
22	GMYXP8	DLN	-2.67	-1.07	2.01	2.97	0.47	0.90	0.82	0.83	0.82	0.53	0.87	0.87	0	0
23	GMWS82	DLN	-1.86	0.23	2.07	0.71	0.35	1.06	0.35	0.34	0.31	0.16	0.45	0.45	0	-2
24	MT82	DLN	-2.60	-0.77	0.62	1.68	0.72	0.99	0.90	0.91	0.91	0.61	0.94	0.93	-1	-1
25	MSM8	DLN	-3.40	-0.65	0.56	1.66	0.62	1.00	0.90	0.90	0.88	0.63	0.93	0.93	0	-1
26	WT8	DLN	-2.72	-0.89	0.10	1.35	0.78	1.01	0.64	0.68	0.62	0.32	0.73	0.73	0	1
27	RT8	DLN	-3.00	-0.81	0.36	0.92	0.33	1.09	0.62	0.62	0.59	0.41	0.73	0.63	-2	-5
28	RTR82	DLN	-3.28	-0.60	0.28	0.95	0.39	1.08	0.60	0.59	0.51	0.30	0.69	0.62	-2	-4
29	RCARD	DLN	-2.96	-3.02	0.06	0.22	0.26	1.14	0.54	0.53	0.44	0.27	0.58	0.55	-1	-5
30	RCARTA	DLN	-2.87	-2.62	0.05	0.21	0.27	1.14	0.51	0.52	0.43	0.29	0.56	0.53	-1	-5

Table 1, continued

Inventories, Orders, and Performance															
31	MPCON8	DLN	-2.81	-1.26	0.14	0.41	0.19	1.14	0.70	0.67	0.48	0.15	0.76	0.75	-1	0
32	MSOND8	DLN	-2.88	-1.09	0.15	0.52	0.20	1.13	0.75	0.71	0.53	0.14	0.78	0.78	-1	0
33	MOCM82	DLN	-2.76	-1.70	0.41	1.35	0.73	1.02	0.78	0.77	0.73	0.47	0.89	0.82	-2	-3
34	MO82	DLN	-2.80	-1.54	0.46	1.31	0.66	1.02	0.81	0.82	0.77	0.39	0.90	0.85	-1	-2
35	MDO82	DLN	-3.21	-1.82	0.27	1.04	0.45	1.07	0.83	0.81	0.73	0.31	0.90	0.86	-1	-2
36	MNO82	DLN	-1.94	-1.66	0.64	0.82	0.97	1.02	0.59	0.65	0.66	0.39	0.75	0.68	-2	-4
37	MU82	DLN	-2.55	-1.94	7.72	5.95	1.56	0.48	0.53	0.54	0.52	0.17	0.64	0.63	2	5
38	MDU82	DLN	-2.83	-2.09	7.18	6.93	1.54	0.43	0.49	0.50	0.47	0.16	0.63	0.58	3	6
39	MNU82	DLN	-2.12	-0.90	1.42	4.51	2.73	0.59	0.61	0.60	0.62	0.23	0.73	0.63	-2	-4
40	IVMT82	DLN	-1.01	-1.27	7.52	4.34	1.42	0.61	0.30	0.31	0.46	0.23	0.79	0.37	6	8
41	IVM1D8	N	-4.99	-4.72	5.44	4.38	1.34	0.65	0.15	0.17	0.34	0.18	0.57	0.57	1	0
42	IVM2D8	N	-3.75	-3.60	11.09	3.90	0.87	0.62	0.29	0.28	0.30	0.10	0.43	0.41	-2	-2
43	IVM3D8	N	-5.14	-4.60	4.20	2.54	1.86	0.75	0.32	0.34	0.32	0.19	0.51	0.27	3	4
44	IVT82	N	-3.32	-2.99	33.90	6.25	0.53	0.05	0.41	0.41	0.37	0.14	-0.79	-0.69	-2	-4
45	VENDOR	N	-4.44	-4.41	7.03	12.90	1.28	0.06	0.37	0.37	0.40	0.17	0.67	0.58	-2	-3
Housing and Construction																
46	HSBP	N	-3.42	-3.39	11.65	13.09	0.47	0.04	0.49	0.48	0.43	0.31	0.59	0.14	-6	-10
47	HSFR	N	-3.26	-3.18	9.99	12.90	0.59	0.07	0.50	0.49	0.44	0.26	0.59	0.21	-6	-9
48	CONDO9	DLN	-3.35	-2.71	0.07	0.43	0.24	1.13	0.75	0.77	0.59	0.10	0.82	0.82	0	0
Money and Credit: Quantity Variables																
49	FMBASE	DLN	-3.81	1.74	12.24	2.10	0.71	0.73	0.07	0.09	0.14	0.14	0.18	0.11	-3	-18
50	FMBASER	DLN	-2.59	-1.34	8.86	3.23	0.86	0.71	0.33	0.34	0.40	0.18	0.62	0.40	-6	-7
51	FM1	DLN	-1.86	2.64	8.15	2.05	1.48	0.74	0.13	0.13	0.18	0.12	0.25	0.14	-3	-4
52	FM1D82	DLN	-2.06	-1.77	7.72	3.16	1.30	0.69	0.29	0.30	0.35	0.14	0.53	0.34	-4	-7
53	FM2	DLN	-1.96	-0.06	9.13	4.24	2.30	0.50	0.12	0.14	0.22	0.16	0.48	0.19	-5	-7
54	FM2D82	DLN	-3.09	-1.87	6.91	5.86	1.63	0.50	0.29	0.30	0.38	0.15	0.68	0.36	-6	-9
55	FM3	DLN	-1.73	-0.16	14.67	5.46	1.64	0.37	0.14	0.14	0.14	0.14	0.27	0.19	-3	-4
56	FM3R	DLN	-3.17	-1.73	7.51	6.20	1.40	0.49	0.33	0.32	0.36	0.14	0.59	0.40	-5	-8
57	FML	DLN	-2.03	0.55	20.59	3.77	1.05	0.42	0.20	0.19	0.16	0.15	0.24	0.24	0	3
58	FMLR	DLN	-3.25	-1.03	7.34	5.43	1.24	0.56	0.43	0.42	0.41	0.12	0.60	0.50	-4	-5
59	FCLN82	DLN	-1.78	-1.26	4.84	2.47	0.51	0.88	0.01	0.04	0.19	0.17	0.63	0.02	10	11
60	FCBCUC	N	-4.56	-4.52	3.29	10.39	1.23	0.31	0.43	0.41	0.46	0.20	0.67	0.61	-2	-3
61	FCBCUCY	N	-3.91	-3.82	4.05	3.64	0.83	0.78	0.15	0.09	0.18	0.36	0.42	0.37	2	0
62	FCLBMCY	N	-4.53	-4.54	3.13	7.18	1.35	0.51	0.06	0.09	0.26	0.22	0.63	0.63	0	2
63	CCBPY	DLN	-3.03	-1.66	4.11	4.95	0.69	0.71	0.26	0.23	0.23	0.36	0.57	0.35	6	7
64	CCI30M	DLN	-2.56	-1.69	0.33	0.64	0.53	1.08	0.33	0.35	0.37	0.16	0.52	-0.29	13	15
Stock Prices and Volume																
65	FSPCOM	DLN	-1.63	-0.13	0.68	1.74	1.94	0.86	0.03	0.08	0.26	0.16	0.55	0.09	-6	-8
66	FSPIN	DLN	-1.69	-0.08	0.64	1.75	1.97	0.86	0.03	0.09	0.26	0.16	0.54	0.09	-6	-8
67	FSDJ	DLN	-1.45	-0.22	0.97	1.77	1.84	0.87	0.03	0.09	0.27	0.15	0.51	0.07	-6	10

Table 1, continued

68	FSVOL	DLN	-2.36	-0.21	0.08	0.10	0.31	1.15	0.24	0.14	0.18	0.13	-0.29	-0.23	2	4
Interest Rates and Spreads																
69	FYFF	D	-2.33	-1.83	0.64	1.37	1.79	0.90	0.54	0.55	0.48	0.17	0.59	0.56	1	-17
70	FYGM3	D	-2.12	-1.65	0.68	1.12	1.64	0.93	0.46	0.48	0.44	0.15	0.52	0.51	1	-18
71	FYGM6	D	-2.34	-1.72	0.71	1.15	1.52	0.94	0.46	0.49	0.45	0.16	0.53	0.51	1	-17
72	FYGT1	D	-2.36	-1.66	0.75	1.18	1.44	0.95	0.45	0.47	0.43	0.16	0.50	0.48	1	-17
73	FYGT10	D	-2.63	-1.61	1.37	1.74	1.00	0.94	0.24	0.28	0.26	0.13	-0.41	0.24	-13	-15
74	FYGL	D	-2.60	-1.45	1.48	1.51	0.93	0.96	0.26	0.30	0.28	0.12	-0.42	0.25	-13	-15
75	FYCP	D	-2.41	-1.84	0.61	1.21	1.71	0.92	0.50	0.52	0.47	0.17	0.55	0.52	1	-16
76	FYBAC	D	-2.21	-1.73	0.61	1.12	1.72	0.93	0.50	0.51	0.46	0.18	0.54	0.52	1	-17
77	FYAAAC	D	-2.47	-1.57	2.09	1.85	1.02	0.92	0.12	0.17	0.20	0.16	-0.45	0.10	-12	-12
78	FYBAAC	D	-2.53	-1.60	3.67	3.08	1.37	0.77	0.06	0.07	0.16	0.14	-0.48	-0.10	-7	-10
79	GL_GM3	N	-2.30	-2.10	25.26	7.02	1.14	0.11	0.24	0.23	0.27	0.15	-0.51	-0.51	1	-18
80	G10_G1	N	-2.66	-2.63	20.24	8.52	1.05	0.11	0.25	0.25	0.30	0.18	-0.59	-0.59	0	3
81	G10_GM3	N	-2.71	-2.46	20.11	8.40	1.11	0.12	0.18	0.18	0.23	0.13	-0.52	-0.52	0	3
82	G1_GM6	N	-3.59	-2.23	35.55	3.76	0.56	0.17	0.13	0.13	0.13	0.11	-0.23	-0.07	-8	-5
83	G1_GM3	N	-4.39	-3.30	17.99	6.09	1.39	0.29	0.07	0.07	0.06	0.10	0.20	-0.12	-18	-18
84	GM6_GM3	N	-4.39	-4.40	4.65	6.88	2.33	0.41	0.07	0.07	0.13	0.09	0.26	-0.14	-18	-18
85	GM3_FF	N	-3.58	-3.19	17.09	7.91	1.02	0.22	0.49	0.48	0.48	0.15	-0.53	-0.46	2	5
86	CP6_GM6	N	-3.67	-3.65	7.36	9.57	1.62	0.24	0.59	0.57	0.54	0.14	-0.48	0.34	-8	8
87	BAC_GM3	N	-3.49	-3.25	11.29	7.80	1.58	0.29	0.55	0.54	0.51	0.16	-0.44	0.31	-8	8
88	BAA_G10	N	-3.57	-2.69	33.97	5.82	0.62	0.06	0.28	0.28	0.30	0.17	-0.74	-0.68	-2	-1
89	BAA_AAA	N	-2.98	-2.19	38.12	4.84	0.59	0.05	0.34	0.34	0.35	0.16	-0.66	-0.57	-2	-2
90	AAA_GL	N	-1.52	-1.86	44.84	3.10	0.49	0.04	0.29	0.28	0.27	0.18	-0.58	-0.47	-3	-2
91	FF_CP6	N	-3.65	-3.10	20.98	6.29	0.61	0.29	0.26	0.25	0.29	0.12	0.43	0.41	1	-18
92	FF_BAC	N	-3.95	-3.47	14.86	6.78	0.91	0.35	0.30	0.29	0.33	0.12	0.45	0.40	2	2
93	FF_G10	N	-3.05	-3.05	11.99	10.73	1.07	0.13	0.37	0.36	0.39	0.17	0.60	0.57	1	4
94	FYFFR	D	-1.94	-1.63	0.35	0.88	1.80	0.94	0.46	0.46	0.40	0.17	0.45	0.45	0	-1
95	FYGM3R	D	-1.88	-1.73	0.41	1.11	1.66	0.94	0.31	0.32	0.35	0.17	0.34	0.30	-2	15
96	FYGM6R	D	-2.06	-1.90	0.44	1.23	1.50	0.95	0.31	0.32	0.35	0.19	-0.35	0.28	11	15
97	FYGT1R	D	-2.17	-1.91	0.44	1.28	1.39	0.95	0.30	0.31	0.33	0.19	-0.35	0.27	12	15
98	FYGT10R	D	-2.46	-2.24	1.14	2.46	0.87	0.91	0.03	0.06	0.19	0.19	-0.50	-0.04	10	13
Aggregate Employment and Labor Forc Participation																
99	LPMHUADJ	DLN	-2.90	-0.17	1.51	2.50	0.77	0.91	0.94	0.93	0.92	0.69	0.96	0.94	1	2
100	LHOURS	DLN	-2.96	0.54	0.40	0.63	0.38	1.10	0.76	0.74	0.67	0.45	0.81	0.81	1	1
101	LHEM	DLN	-3.69	0.33	1.17	1.86	0.71	0.97	0.79	0.77	0.71	0.34	0.83	0.81	1	2
102	LHTNAG	DLN	-1.19	-1.95	1.72	0.83	0.51	1.05	0.61	0.60	0.47	0.20	0.70	0.67	2	1
103	LHCH	D	0.22	-1.45	0.12	0.08	0.21	1.16	0.45	0.42	0.36	0.38	0.50	0.50	0	-1
104	LHNAGP	DLN	-2.09	-0.59	0.73	0.66	0.58	1.07	0.79	0.77	0.64	0.25	-0.84	-0.83	-1	-1
105	LHNAPS	DLN	-2.40	-1.08	0.44	0.94	0.78	1.04	0.78	0.77	0.69	0.24	-0.86	-0.81	-1	-2
106	LHNPVX	D	-2.08	-1.85	0.79	0.54	0.49	1.08	0.71	0.69	0.55	0.17	0.77	0.77	-1	-1

Table 1, continued

107	LHUL	DLN	-2.55	-2.41	0.75	2.14	1.10	0.91	0.89	0.88	0.84	0.29	-0.89	-0.89	0	-1
108	LHULLHEM	N	-2.30	-2.40	32.69	6.99	0.67	0.02	0.22	0.22	0.33	0.30	-0.90	-0.90	0	-1
109	LHMUR	N	-2.14	-1.90	45.28	3.91	0.19	0.01	0.07	0.07	0.13	0.18	-0.93	-0.92	1	1
110	LPHRM	N	-2.85	-2.87	25.28	7.16	0.73	0.14	0.07	0.08	0.17	0.19	0.79	0.75	-1	-3
111	LPHRD	N	-2.94	-2.95	25.37	7.52	0.60	0.12	0.08	0.10	0.19	0.20	0.80	0.77	-1	-3
112	LPMOSA	N	-3.07	-2.91	26.08	8.39	0.49	0.06	0.32	0.32	0.35	0.29	0.87	0.85	-1	-3
113	LHU5	DLN	-1.77	-1.30	0.24	0.33	0.27	1.13	0.61	0.63	0.63	0.20	-0.73	-0.66	-2	-3
114	LHU680	N	-2.64	-2.41	43.02	4.47	0.19	0.02	0.28	0.27	0.24	0.21	-0.88	-0.39	6	7
115	LHEL	DLN	-3.25	-1.82	2.30	5.22	1.42	0.65	0.88	0.88	0.84	0.32	0.95	0.94	-1	0
116	LHELX	N	-2.53	-2.50	41.36	5.13	0.15	0.01	0.07	0.07	0.13	0.23	0.82	0.82	0	0
117	LUINC	DLN	-2.31	-2.05	0.53	1.47	0.88	0.99	0.78	0.77	0.76	0.39	-0.87	-0.78	-2	-3
Employment by Sector																
118	LPNAG	DLN	-2.63	-0.14	5.37	5.77	1.35	0.56	0.89	0.88	0.88	0.68	0.92	0.89	1	3
119	LPMI	DLN	-1.35	-1.18	1.57	0.73	0.73	1.03	0.14	0.17	0.25	0.23	-0.41	0.09	-11	-12
120	LPCC	DLN	-3.55	-0.65	0.51	2.12	0.61	0.97	0.74	0.71	0.64	0.41	0.79	0.78	1	2
121	LPEM	DLN	-2.15	-1.96	3.35	6.08	1.66	0.55	0.92	0.92	0.92	0.61	0.96	0.93	1	2
122	LPED	DLN	-2.28	-1.90	2.64	5.27	1.26	0.66	0.90	0.91	0.91	0.58	0.95	0.91	1	2
123	LPEN	DLN	-2.00	-2.07	3.73	4.80	2.68	0.53	0.87	0.85	0.78	0.36	0.90	0.90	0	0
124	LPTW	DLN	-3.41	-0.27	3.49	5.69	0.93	0.65	0.65	0.63	0.61	0.18	0.82	0.70	3	5
125	LPTR	DLN	-4.07	0.20	5.41	3.54	1.18	0.73	0.75	0.76	0.71	0.39	0.79	0.78	1	1
126	LPFR	DLN	-4.58	0.12	9.26	5.92	0.79	0.53	0.40	0.37	0.34	0.18	0.44	0.42	2	5
127	LPSPA	DLN	-2.81	-0.19	8.84	3.49	0.74	0.71	0.69	0.68	0.67	0.33	0.76	0.70	2	4
128	LPGOV	DLN	-1.39	-2.46	11.48	1.50	0.47	0.81	0.12	0.10	0.14	0.12	0.43	0.17	15	16
129	LPSPNGA	DLN	-4.60	0.78	6.31	3.88	0.81	0.72	0.74	0.75	0.72	0.37	0.80	0.75	2	4
Productivity and Real Wages																
130	IPROD1	DLN	-2.38	-1.55	0.79	2.18	1.28	0.90	0.91	0.91	0.91	0.55	0.92	0.91	-1	-2
131	PLM	DLN	-1.98	-0.55	5.34	1.92	0.77	0.88	0.66	0.66	0.69	0.55	-0.69	-0.63	-2	-5
132	PLM82	DLN	-2.81	-0.13	0.86	1.55	1.25	0.94	0.58	0.58	0.57	0.40	-0.53	-0.53	0	1
133	LEHM	DLN	-2.35	-0.50	13.44	0.51	0.48	0.84	0.04	0.02	0.07	0.28	-0.31	-0.10	-7	-12
134	LEHM82	DLN	-1.36	-2.21	1.57	1.68	0.63	0.98	0.38	0.40	0.47	0.26	0.47	0.41	-10	-8
135	RPWGMS	N	-2.69	-2.26	40.23	4.93	0.34	0.03	0.06	0.06	0.06	0.15	0.52	0.19	-8	-10
136	RPWGMDS	N	-2.37	-2.22	44.57	3.68	0.33	0.02	0.00	0.01	0.05	0.15	0.49	0.29	-7	-7
Prices																
137	PUNEW	DLN	-2.62	-0.20	26.30	3.39	0.49	0.39	0.27	0.27	0.30	0.13	-0.53	-0.31	-9	-10
138	PZUNEW	DLN	-2.79	-0.44	23.79	3.10	0.46	0.46	0.28	0.27	0.30	0.13	-0.52	-0.32	-9	-10
139	PW	DLN	-2.54	-0.54	11.31	2.72	0.77	0.70	0.02	0.05	0.12	0.12	-0.48	-0.10	-9	-13
140	PW1200	DLN	-1.93	-0.62	3.72	3.04	1.68	0.74	0.32	0.31	0.21	0.11	-0.55	0.29	-16	-17
141	PW1300	DLN	-2.06	-0.66	10.48	1.25	0.45	0.85	0.39	0.38	0.34	0.15	-0.46	-0.41	-4	-5
142	PWCMP	DLN	-2.19	-0.75	2.03	1.45	0.58	0.99	0.29	0.31	0.25	0.11	-0.58	0.28	-18	-18
143	PWFC	DLN	-2.44	-0.53	10.49	2.08	0.54	0.79	0.13	0.15	0.20	0.12	-0.46	-0.19	-10	-12
144	PWFP	DLN	-2.89	-0.39	12.35	2.83	0.80	0.67	0.34	0.36	0.35	0.10	-0.53	-0.42	-4	-5

Table 1, continued

145	PWFUEL	DLN	-1.59	-0.79	11.22	3.67	2.05	0.52	0.12	0.16	0.21	0.11	-0.47	-0.20	-9	-10
146	PWIC	DLN	-2.43	-0.32	19.75	5.25	1.53	0.29	0.12	0.16	0.21	0.09	-0.53	-0.22	-8	-10
147	PWIMS	DLN	-2.27	-0.25	10.00	3.30	1.18	0.65	0.05	0.08	0.16	0.14	-0.54	-0.14	-8	-10
148	PWIMSM	DLN	-2.55	-0.04	12.47	6.61	1.68	0.33	0.05	0.08	0.17	0.12	-0.57	-0.15	-8	-10
149	PSMC99A	DLN	-2.25	0.06	3.06	7.02	1.08	0.55	0.54	0.54	0.45	0.13	0.55	0.55	0	2
150	PSCCOM	DLN	-3.20	-1.21	1.74	3.75	0.53	0.85	0.46	0.45	0.36	0.13	-0.48	0.45	-17	-18
Exchange Rates and Foreign Trade																
151	EXRWT1	DLN	-2.27	-1.37	2.85	1.87	1.34	0.87	0.12	0.08	0.11	0.11	-0.30	-0.14	-5	-7
152	EXRWT2	DLN	-2.59	-1.35	2.75	2.08	1.52	0.84	0.14	0.09	0.09	0.12	-0.27	-0.15	-5	-6
153	EXNWT1	DLN	-2.20	-1.74	2.91	1.97	1.46	0.85	0.10	0.06	0.07	0.08	-0.26	-0.12	-5	-6
154	EXNWT2	DLN	-2.47	-1.21	2.75	2.31	1.63	0.82	0.13	0.08	0.07	0.10	-0.24	-0.14	-5	-4
155	EXVUS	DLN	-2.10	-2.10	3.11	2.06	1.73	0.81	0.01	0.06	0.08	0.12	-0.23	-0.04	11	18
156	IMY1	DLN	-2.30	-0.59	0.11	0.15	0.19	1.15	0.49	0.46	0.34	0.17	0.54	0.48	2	4
157	EXY1	DLN	-1.82	-1.23	0.13	0.09	0.05	1.17	0.16	0.17	0.16	0.16	-0.32	0.13	-16	-15
158	TB1	D	-3.00	-0.74	0.11	0.10	0.14	1.16	0.31	0.31	0.23	0.13	-0.36	-0.35	1	18
Misc.: Government and other																
159	FBD	DLN	-2.11	0.84	10.37	1.43	0.32	0.86	0.15	0.13	0.14	0.13	0.47	0.16	-8	-8
160	FBDY	DLN	-1.51	-1.00	10.27	1.46	0.40	0.86	0.11	0.16	0.19	0.25	0.47	-0.08	-13	-11
161	FBYS	N	-5.63	-5.56	3.08	5.44	0.65	0.68	0.26	0.27	0.37	0.15	0.60	0.60	0	-2
162	FAIL	DLN	-1.45	-0.07	0.07	0.02	0.07	1.18	0.24	0.24	0.23	0.12	-0.40	-0.30	-3	-6
163	INC	DLN	-2.77	-0.17	0.33	0.33	0.35	1.12	0.44	0.41	0.42	0.19	0.55	0.43	-3	-4

Notes: The definitions of the series are given in Appendix A. The transformation codes are: N = no transformation, D = first differences of the series, DLN = first differences of the natural logs of the series (i.e. growth rates). DF_t refers to the Dickey-Fuller t-statistic testing the null that the series contains a unit root, when a constant and time is included as a regressor; DF_μ refers to this statistic when time is excluded. DF_t and DF_μ were computed including 12 lags of the first difference of the series in question in the regression. For variables with transformation code DLN, the DF statistics were computed after transforming the data to logarithms. The 10% (5%) critical values for the DF_t statistic are -3.12 (-3.41); for the DF_μ statistic, -2.57 (-2.86).

The four columns of univariate spectral estimates report the average value of the periodogram for periods in the indicated ranges, normalized so that the average spectrum on $[-\pi,\pi]$ is 1. The next four columns report average estimated coherences between the transformed series and the 1-month growth in the ICI. The final 4 columns present statistics based on the cross-correlogram between filtered log ICI and the filtered series. Of these, the first three are based on the 24-month moving average filter $a_{24}(L)$, and the final column is based on the Butterworth filter $a_B(L)$. See Appendix B and the text for a description of these final statistics and a discussion of the filters.

Table 2
Bivariate Predictive Content for the Index of Coincident Indicators (ICI)

	Series	Trans.	F_6	P_6	F_{12}	P_{12}	$R^2(1)$	rank	$R^2(6)$	rank	$R^2(12)$	rank	Subsample Stability: RMSE's - 88:12 -79:9	79:10-	- 79:9 -79:9	79:10-
Base Model			0.00	0.000	0.00	0.000	0.258	-	0.118	-	0.062	-	4.52	4.46	4.50	4.53
Output and Capacity Utilization																
3	IPC	DLN	0.73	0.625	1.67	0.073	0.288	79	0.154	111	0.202	54	4.48	4.22	4.45	4.39
4	IPCN	DLN	2.01	0.065	1.69	0.069	0.290	72	0.149	117	0.128	94	4.45	4.34	4.42	4.50
5	IPCD	DLN	0.87	0.521	1.44	0.148	0.275	123	0.133	140	0.143	83	4.49	4.38	4.47	4.49
6	IPD	DLN	1.28	0.264	1.15	0.316	0.290	70	0.144	122	0.075	146	4.35	4.61	4.31	4.79
7	IPN	DLN	3.66	0.002	2.63	0.002	0.311	24	0.211	56	0.121	101	4.25	4.27	4.22	4.42
8	IPMIN	DLN	1.01	0.419	1.43	0.151	0.283	94	0.161	105	0.127	96	4.44	4.25	4.42	4.41
9	IPUT	DLN	1.96	0.072	1.35	0.190	0.283	90	0.123	159	0.071	153	4.50	4.44	4.49	4.51
10	IPE	DLN	0.86	0.527	0.83	0.620	0.268	144	0.129	146	0.096	122	4.50	4.39	4.48	4.54
11	IPMFG	DLN	0.57	0.756	1.31	0.214	0.266	153	0.128	152	0.087	131	4.54	4.32	4.48	4.65
12	IPM	DLN	0.91	0.491	1.69	0.068	0.301	47	0.148	118	0.094	125	4.39	4.49	4.37	4.60
13	IPI	DLN	3.09	0.006	1.97	0.026	0.302	44	0.213	53	0.205	51	4.24	4.26	4.21	4.42
14	IPF	DLN	0.42	0.867	1.00	0.446	0.280	103	0.129	147	0.081	137	4.50	4.40	4.48	4.50
15	IPX	D	0.65	0.693	0.87	0.577	0.308	31	0.169	92	0.165	72	4.72	4.33	4.67	4.50
16	IPXDCA	D	0.58	0.750	1.24	0.260	0.307	33	0.172	89	0.144	81	4.66	4.40	4.59	4.65
17	IPXMCA	D	0.53	0.782	1.25	0.248	0.266	149	0.132	142	0.089	130	4.52	4.33	4.48	4.51
Consumption, Sales and Income																
18	GMC82	DLN	2.12	0.051	2.89	0.001	0.289	75	0.213	52	0.249	32	4.13	4.51	4.10	4.66
19	GMCD82	DLN	1.11	0.354	1.61	0.089	0.272	135	0.152	114	0.137	86	4.38	4.48	4.35	4.66
20	GMPY	DLN	1.84	0.092	1.14	0.329	0.282	102	0.182	74	0.174	65	4.43	4.10	4.41	4.26
21	GMPY82	DLN	0.72	0.635	1.66	0.074	0.266	150	0.140	126	0.107	114	4.38	4.57	4.34	4.79
22	GMYXP8	DLN	0.30	0.938	1.58	0.096	0.263	157	0.139	130	0.103	118	4.37	4.62	4.29	5.01
23	GMWS82	DLN	1.41	0.210	1.27	0.235	0.274	129	0.162	103	0.132	91	4.39	4.38	4.34	4.71
24	MT82	DLN	1.26	0.276	1.83	0.043	0.276	119	0.168	95	0.092	126	4.31	4.49	4.28	4.67
25	MSM8	DLN	0.51	0.803	0.75	0.704	0.303	42	0.169	94	0.107	113	4.64	4.45	4.58	4.67
26	WT8	DLN	0.67	0.674	1.46	0.140	0.301	48	0.175	85	0.156	74	4.63	4.42	4.61	4.52
27	RT8	DLN	1.82	0.096	2.52	0.004	0.327	14	0.226	44	0.274	23	4.46	4.32	4.43	4.44
28	RTR82	DLN	1.88	0.083	2.21	0.011	0.288	82	0.177	79	0.182	61	4.34	4.36	4.32	4.47
29	RCARD	DLN	0.95	0.458	2.13	0.015	0.280	107	0.129	148	0.108	112	4.48	4.44	4.47	4.54
30	RCARTA	DLN	1.18	0.316	2.45	0.005	0.285	85	0.128	150	0.114	103	4.48	4.45	4.47	4.54

Table 2, continued

Inventories, Orders, and Performance														
31	MPCON8	DLN	3.08	0.006	1.85	0.041	0.299	51	0.144	120	0.076	144	4.45 4.40	4.43 4.48
32	MSOND8	DLN	3.84	0.001	2.50	0.004	0.308	30	0.161	104	0.079	140	4.39 4.39	4.37 4.47
33	MOCM82	DLN	2.62	0.017	2.43	0.005	0.294	57	0.189	67	0.152	75	4.25 4.46	4.22 4.60
34	MO82	DLN	4.08	0.001	3.64	0.000	0.313	23	0.212	55	0.147	77	4.17 4.44	4.15 4.55
35	MDO82	DLN	3.39	0.003	3.09	0.000	0.306	35	0.173	87	0.120	102	4.35 4.37	4.33 4.47
36	MNO82	DLN	0.99	0.432	1.26	0.245	0.273	130	0.197	63	0.103	116	4.16 4.59	4.13 4.72
37	MU82	DLN	3.49	0.002	1.89	0.034	0.313	22	0.179	77	0.134	88	4.31 4.40	4.29 4.52
38	MDU82	DLN	3.06	0.006	1.81	0.045	0.306	34	0.172	91	0.143	82	4.35 4.37	4.33 4.48
39	MNU82	DLN	6.95	0.000	3.91	0.000	0.338	10	0.321	12	0.173	66	3.64 4.56	3.56 4.94
40	IVMT82	DLN	2.65	0.016	1.73	0.060	0.289	74	0.178	78	0.142	84	4.28 4.49	4.19 5.06
41	IVM1D8	N	1.67	0.129	1.23	0.263	0.289	73	0.223	47	0.171	70	4.09 4.50	3.99 5.09
42	IVM2D8	N	1.34	0.241	1.75	0.056	0.282	101	0.154	112	0.124	98	4.39 4.45	4.36 4.61
43	IVM3D8	N	2.52	0.022	1.59	0.092	0.288	81	0.165	97	0.086	132	4.36 4.41	4.29 4.94
44	IVT82	N	2.05	0.059	2.09	0.017	0.288	80	0.203	60	0.141	85	4.17 4.51	4.08 5.03
45	VENDOR	N	5.96	0.000	4.15	0.000	0.332	12	0.260	34	0.286	22	3.98 4.44	3.91 4.77
Housing and Construction														
46	HSBP	N	5.52	0.000	3.33	0.000	0.325	15	0.342	9	0.328	15	3.96 3.71	3.92 3.92
47	HSFR	N	2.46	0.025	1.85	0.041	0.293	59	0.306	17	0.262	28	4.07 3.80	4.05 3.94
48	CONDO9	DLN	1.60	0.146	1.02	0.428	0.283	96	0.139	129	0.078	142	4.44 4.45	4.43 4.52
Money and Credit: Quantity Variables														
49	FMBASE	DLN	0.71	0.641	0.88	0.570	0.265	154	0.134	136	0.080	138	4.52 4.30	4.47 4.60
50	FMBASER	DLN	3.92	0.001	2.48	0.004	0.303	41	0.335	10	0.414	5	3.84 4.05	3.60 5.59
51	FM1	DLN	1.61	0.145	0.95	0.498	0.275	125	0.149	116	0.080	139	4.44 4.37	4.32 5.41
52	FM1D82	DLN	3.94	0.001	2.07	0.019	0.304	40	0.278	28	0.262	29	3.93 4.38	3.38 8.04
53	FM2	DLN	3.03	0.007	1.59	0.092	0.291	65	0.271	30	0.234	41	3.91 4.47	3.82 4.99
54	FM2D82	DLN	5.52	0.000	3.09	0.000	0.322	17	0.417	5	0.493	2	3.42 4.15	3.30 4.73
55	FM3	DLN	0.95	0.461	0.90	0.551	0.267	147	0.163	100	0.103	117	4.28 4.60	4.20 5.00
56	FM3R	DLN	3.82	0.001	2.42	0.005	0.305	38	0.320	13	0.371	10	3.70 4.47	3.62 4.84
57	FML	DLN	0.84	0.537	1.43	0.150	0.267	148	0.146	119	0.077	143	4.41 4.46	4.34 4.87
58	FMLR	DLN	3.36	0.003	2.09	0.018	0.304	39	0.307	16	0.314	16	3.67 4.63	3.45 5.65
59	FCLN82	DLN	4.66	0.000	2.55	0.003	0.300	49	0.199	61	0.160	73	4.43 3.93	4.40 4.14
60	FCBCUC	N	1.71	0.119	1.46	0.138	0.273	132	0.173	88	0.146	79	4.43 4.18	4.34 4.71
61	FCBCUCY	N	1.13	0.343	1.06	0.393	0.272	134	0.133	139	0.067	156	4.45 4.48	4.41 4.71
62	FCLBMCY	N	5.35	0.000	4.04	0.000	0.311	25	0.381	7	0.411	6	3.92 3.41	3.89 3.62
63	CCBPY	DLN	1.24	0.286	0.94	0.510	0.275	122	0.133	141	0.073	151	4.44 4.50	4.41 4.68
64	CCI30M	DLN	1.03	0.407	1.21	0.276	0.268	143	0.137	132	0.129	93	4.43 4.49	4.36 4.90

Table 2, continued

Stock Prices and Volume														
65	FSPCOM	DLN	5.04	0.000	3.07	0.000	0.311	26	0.318	14	0.249	31	3.84 4.19	3.78 4.57
66	FSPIN	DLN	4.96	0.000	3.06	0.000	0.310	28	0.313	15	0.245	34	3.86 4.20	3.79 4.59
67	FSDJ	DLN	4.40	0.000	2.54	0.003	0.306	36	0.295	22	0.219	46	3.97 4.14	3.90 4.51
68	FSVOL	DLN	0.23	0.967	1.32	0.207	0.262	160	0.125	156	0.084	134	4.49 4.45	4.48 4.54
Interest Rates and Spreads														
69	FYFF	D	1.96	0.072	2.11	0.016	0.278	111	0.220	48	0.227	43	4.34 3.96	4.17 5.99
70	FYGM3	D	1.93	0.076	1.68	0.070	0.277	112	0.164	99	0.166	71	4.52 4.03	4.42 5.14
71	FYGM6	D	2.30	0.034	1.89	0.034	0.277	115	0.175	82	0.180	63	4.54 3.88	4.43 4.95
72	FYGT1	D	2.24	0.039	1.85	0.040	0.276	116	0.187	70	0.190	58	4.52 3.82	4.41 4.85
73	FYGT10	D	1.85	0.089	1.44	0.146	0.273	133	0.182	73	0.191	57	4.49 3.96	4.42 4.59
74	FYGL	D	1.74	0.111	1.56	0.102	0.275	121	0.188	69	0.203	52	4.44 4.02	4.34 5.38
75	FYCP	D	2.70	0.014	2.48	0.004	0.283	91	0.245	40	0.239	37	4.31 3.80	4.17 5.21
76	FYBAC	D	2.35	0.031	2.34	0.007	0.280	105	0.231	42	0.220	45	4.33 3.88	4.19 5.39
77	FYAAAC	D	3.52	0.002	2.16	0.013	0.294	58	0.236	41	0.245	35	4.31 3.90	4.16 5.86
78	FYBAAC	D	3.73	0.001	2.13	0.015	0.298	52	0.280	27	0.271	25	4.15 3.85	3.93 6.36
79	GL_GM3	N	3.24	0.004	1.89	0.034	0.299	50	0.303	18	0.386	7	3.98 4.05	3.69 6.11
80	G10_G1	N	4.25	0.000	2.25	0.010	0.308	32	0.350	8	0.431	4	3.87 3.84	3.70 4.93
81	G10_GM3	N	2.58	0.019	1.59	0.093	0.292	60	0.282	26	0.350	12	4.05 4.08	3.88 5.27
82	G1_GM6	N	0.57	0.754	1.18	0.300	0.266	152	0.133	138	0.074	150	4.49 4.38	4.46 4.79
83	G1_GM3	N	0.57	0.754	0.87	0.580	0.266	151	0.134	137	0.094	124	4.49 4.37	4.47 4.58
84	GM6_GM3	N	0.85	0.533	1.00	0.448	0.271	137	0.175	81	0.178	64	4.51 3.97	4.48 4.26
85	GM3_FF	N	6.44	0.000	3.46	0.000	0.340	9	0.457	3	0.454	3	3.28 4.04	3.20 4.50
86	CP6_GM6	N	8.46	0.000	5.01	0.000	0.366	2	0.525	1	0.385	8	2.95 3.98	2.91 4.19
87	BAC_GM3	N	7.29	0.000	4.71	0.000	0.353	5	0.473	2	0.351	11	3.20 4.04	3.16 4.23
88	BAA_G10	N	4.46	0.000	2.49	0.004	0.310	29	0.206	58	0.133	90	4.17 4.48	4.05 5.15
89	BAA_AAA	N	6.68	0.000	3.61	0.000	0.333	11	0.192	65	0.114	104	4.27 4.39	4.19 5.09
90	AAA_GL	N	3.34	0.003	2.06	0.020	0.301	46	0.206	59	0.102	119	4.24 4.34	4.21 4.48
91	FF_CP6	N	2.69	0.014	1.63	0.081	0.291	63	0.269	31	0.337	14	4.06 4.17	3.97 5.01
92	FF_BAC	N	2.63	0.017	1.76	0.054	0.291	64	0.297	21	0.372	9	3.89 4.28	3.84 4.60
93	FF_G10	N	4.93	0.000	2.58	0.003	0.323	16	0.439	4	0.532	1	3.44 3.91	3.32 4.80
94	FYFFR	D	1.79	0.101	1.31	0.210	0.282	98	0.139	128	0.085	133	4.55 4.20	4.38 5.85
95	FYGM3R	D	2.12	0.051	1.47	0.133	0.283	95	0.125	157	0.066	158	4.47 4.50	4.06 7.55
96	FYGM6R	D	2.63	0.017	1.72	0.062	0.286	84	0.125	155	0.066	160	4.48 4.48	4.09 7.07
97	FYGT1R	D	2.74	0.013	1.82	0.044	0.287	83	0.126	153	0.067	155	4.51 4.40	4.18 6.62
98	FYGT10R	D	2.54	0.021	1.87	0.038	0.284	86	0.130	145	0.075	148	4.40 4.62	4.11 6.29
Aggregate Employment and Labor Force Participation														
99	LPMHUADJ	DLN	0.82	0.553	2.25	0.010	0.268	142	0.144	121	0.128	95	4.44 4.40	4.43 4.49
100	LHOURS	DLN	0.49	0.813	1.03	0.420	0.264	155	0.134	135	0.066	159	4.48 4.41	4.46 4.53

Table 2, continued

101	LHEM	DLN	0.64	0.700	1.05	0.403	0.263	158	0.130	144	0.076	145	4.50 4.39		4.48 4.51
102	LHTNAG	DLN	2.24	0.039	1.51	0.119	0.290	67	0.135	134	0.074	149	4.46 4.44		4.44 4.60
103	LHCH	D	1.09	0.370	0.93	0.516	0.268	146	0.128	151	0.066	157	4.49 4.44		4.47 4.57
104	LHNAGP	DLN	4.82	0.000	4.02	0.000	0.317	20	0.189	68	0.089	128	4.26 4.44		4.24 4.55
105	LHNAPS	DLN	7.63	0.000	4.59	0.000	0.340	8	0.246	39	0.106	115	4.09 4.31		4.07 4.44
106	LHNPVX	D	2.91	0.009	2.86	0.001	0.296	54	0.164	98	0.084	135	4.33 4.50		4.30 4.62
107	LHUL	DLN	4.07	0.001	2.55	0.004	0.363	4	0.183	72	0.134	89	4.63 4.37		4.59 4.51
108	LHULLHEM	N	4.82	0.000	3.39	0.000	0.364	3	0.257	35	0.241	36	4.37 4.23		4.24 4.86
109	LHMUR	N	3.69	0.002	2.20	0.012	0.292	62	0.175	83	0.146	80	4.39 4.26		4.27 5.28
110	LPHRM	N	1.15	0.335	0.89	0.558	0.283	97	0.140	125	0.123	100	4.44 4.45		4.41 4.63
111	LPHRD	N	1.78	0.103	1.20	0.283	0.288	76	0.138	131	0.126	97	4.45 4.44		4.42 4.59
112	LPMOSA	N	0.63	0.710	0.83	0.624	0.278	109	0.198	62	0.215	48	4.23 4.42		4.19 4.64
113	LHU5	DLN	2.61	0.017	2.09	0.017	0.288	77	0.168	96	0.114	105	4.37 4.37		4.34 4.53
114	LHU680	N	0.95	0.459	1.12	0.345	0.278	108	0.216	49	0.208	49	4.27 4.18		4.16 4.95
115	LHEL	DLN	12.72	0.000	6.91	0.000	0.408	1	0.387	6	0.194	55	3.51 4.24		3.47 4.45
116	LHELX	N	4.91	0.000	2.59	0.003	0.318	19	0.297	20	0.249	33	3.81 4.45		3.71 4.93
117	LUINC	DLN	5.84	0.000	3.90	0.000	0.302	45	0.250	37	0.171	69	4.04 4.39		3.95 4.88
Employment by Sector															
118	LPNAG	DLN	0.94	0.468	1.48	0.132	0.274	127	0.141	123	0.146	78	4.44 4.43		4.42 4.55
119	LPMI	DLN	2.92	0.009	2.73	0.002	0.311	27	0.208	57	0.206	50	4.36 4.03		4.33 4.20
120	LPCC	DLN	0.49	0.819	1.02	0.432	0.268	145	0.130	143	0.068	154	4.46 4.48		4.45 4.56
121	LPEM	DLN	1.96	0.072	1.78	0.050	0.291	66	0.175	84	0.216	47	4.39 4.27		4.36 4.41
122	LPED	DLN	1.23	0.292	1.30	0.220	0.282	100	0.186	71	0.236	40	4.38 4.18		4.35 4.36
123	LPEN	DLN	3.58	0.002	1.97	0.027	0.318	18	0.181	76	0.109	111	4.31 4.40		4.29 4.50
124	LPTW	DLN	1.02	0.410	1.02	0.433	0.275	120	0.172	90	0.202	53	4.39 4.27		4.36 4.45
125	LPTR	DLN	1.11	0.354	2.11	0.016	0.271	136	0.122	160	0.072	152	4.50 4.46		4.48 4.60
126	LPFR	DLN	0.78	0.588	1.07	0.385	0.269	141	0.155	109	0.111	110	4.38 4.45		4.37 4.54
127	LPSPA	DLN	0.33	0.921	0.42	0.955	0.262	159	0.122	161	0.078	141	4.49 4.49		4.45 4.73
128	LPGOV	DLN	0.72	0.637	1.52	0.115	0.262	161	0.140	127	0.089	129	4.53 4.25		4.50 4.45
129	LPSPNGA	DLN	0.55	0.774	0.41	0.961	0.263	156	0.141	124	0.124	99	4.44 4.44		4.41 4.59
Productivity and Real Wages															
130	IPROD1	DLN	0.65	0.694	1.59	0.093	0.270	138	0.125	154	0.090	127	4.50 4.42		4.49 4.53
131	PLM	DLN	1.44	0.197	2.36	0.007	0.276	117	0.215	50	0.265	26	4.37 3.94		4.33 4.18
132	PLM82	DLN	1.71	0.118	1.15	0.319	0.283	93	0.157	108	0.096	123	4.28 4.66		4.21 5.00
133	LEHM	DLN	2.34	0.032	2.00	0.024	0.294	56	0.224	46	0.172	67	4.20 4.27		4.17 4.44
134	LEHM82	DLN	1.80	0.099	2.44	0.005	0.276	118	0.157	107	0.191	56	4.39 4.42		4.34 4.71
135	RPWGMS	N	2.21	0.042	2.03	0.021	0.277	113	0.224	45	0.237	38	4.08 4.53		4.01 4.86
136	RPWGMDS	N	3.04	0.007	2.36	0.006	0.283	92	0.191	66	0.172	68	4.20 4.54		4.15 4.81

Table 2, continued

Prices															
137	PUNEW	DLN	3.47	0.002	2.58	0.003	0.302	43	0.260	33	0.313	17	4.19	3.96	4.16 4.12
138	PZUNEW	DLN	2.47	0.024	2.06	0.019	0.295	55	0.252	36	0.300	21	4.18	4.05	4.16 4.18
139	PW	DLN	2.51	0.022	1.74	0.057	0.290	69	0.247	38	0.258	30	4.07	4.35	4.04 4.52
140	PW1200	DLN	1.61	0.143	1.54	0.108	0.275	126	0.152	113	0.181	62	4.39	4.47	4.34 4.81
141	PW1300	DLN	2.14	0.049	1.24	0.254	0.290	68	0.212	54	0.187	59	4.25	4.25	4.21 4.48
142	PWCMP	DLN	1.78	0.103	1.38	0.174	0.277	114	0.128	149	0.100	121	4.49	4.43	4.47 4.53
143	PWFC	DLN	1.48	0.186	1.12	0.347	0.284	89	0.215	51	0.236	39	4.23	4.28	4.21 4.39
144	PWFP	DLN	3.08	0.006	2.09	0.018	0.297	53	0.285	24	0.221	44	4.01	4.14	3.98 4.33
145	PWFUEL	DLN	0.91	0.489	2.24	0.010	0.273	131	0.230	43	0.231	42	4.07	4.50	3.88 5.74
146	PWIC	DLN	2.10	0.053	1.66	0.075	0.284	87	0.284	25	0.303	19	3.90	4.37	3.84 4.72
147	PWIMS	DLN	2.54	0.020	1.60	0.091	0.292	61	0.302	19	0.301	20	3.82	4.38	3.78 4.62
148	PWIMSM	DLN	4.68	0.000	2.58	0.003	0.316	21	0.332	11	0.340	13	3.69	4.39	3.64 4.62
149	PSMC99A	DLN	2.26	0.038	2.84	0.001	0.290	71	0.169	93	0.184	60	4.26	4.61	4.19 4.98
150	PSCCOM	DLN	2.05	0.058	2.11	0.016	0.280	106	0.149	115	0.148	76	4.38	4.51	4.33 4.79
Exchange Rates and Foreign Trade															
151	EXRWT1	DLN	2.06	0.058	1.14	0.328	0.282	99	0.194	64	0.130	92	4.37	4.13	4.35 4.33
152	EXRWT2	DLN	1.67	0.127	1.10	0.361	0.275	124	0.174	86	0.112	109	4.44	4.15	4.42 4.27
153	EXNWT1	DLN	1.43	0.203	0.99	0.456	0.274	128	0.176	80	0.112	108	4.43	4.15	4.41 4.28
154	EXNWT2	DLN	1.20	0.307	1.00	0.445	0.270	139	0.162	102	0.101	120	4.46	4.20	4.45 4.31
155	EXVUS	DLN	0.80	0.575	0.70	0.755	0.305	37	0.181	75	0.135	87	4.67	4.32	4.65 4.40
156	IMY1	DLN	1.37	0.224	1.50	0.122	0.280	104	0.161	106	0.113	106	4.34	4.50	4.31 4.67
157	EXY1	DLN	2.04	0.060	1.42	0.154	0.284	88	0.155	110	0.112	107	4.37	4.47	4.34 4.64
158	TB1	D	0.56	0.764	0.97	0.474	0.269	140	0.123	158	0.063	161	4.50	4.46	4.47 4.68
Misc.: Government and other															
159	FBD	DLN	2.14	0.050	1.09	0.368	0.342	7	0.268	32	0.262	27	4.48	4.22	4.30 5.12
160	FBDY	DLN	2.68	0.016	1.47	0.136	0.352	6	0.293	23	0.306	18	4.41	4.13	4.08 6.05
161	FBYS	N	1.30	0.257	1.23	0.265	0.332	13	0.275	29	0.272	24	4.88	3.89	4.80 4.23
162	FAIL	DLN	2.21	0.042	1.85	0.040	0.288	78	0.137	133	0.083	136	4.43	4.49	4.41 4.61
163	INC	DLN	1.49	0.181	1.46	0.137	0.278	110	0.163	101	0.075	147	4.30	4.56	4.27 4.74

Notes: The first two columns respectively report the F-statistic and p-value of the test of the hypothesis that none of the six lags of the indicated series enter into a regression of the growth of the ICI on 12 lags of ICI growth and 6 lags of the trial series. The next two columns report these statistics, when 12 lags of the trial series are used. The next six columns report the R^2 of the k-month ahead forecast produced by regressing the k-month growth of ICI on 6 lags each of the trial variable and the one-month growth of the ICI. The "rank" following the $R^2(k)$ statistic is the rank of the $R^2(k)$ for that row variable among all the $R^2(k)$ statistics reported in that column. The final four columns report root mean square errors (RMSE's) for forecasts computed from a regression of future 6-month ICI growth on 6 lags each of ICI growth and the transformed variable. The regressions were estimated for the full sample, then reestimated for the subsample through 79:9, to produce the two sets of RMSE's.

Table 3
Bivariate Predictive Content for the Index of Industrial Production (IP)

Series		Trans.	F_6	p_6	F_{12}	p_{12}	$R^2(1)$	rank	$R^2(6)$	rank	$R^2(12)$	rank	Subsample Stability: RMSE's - 88:12 -79:9	79:10-	- 79:9 -79:9	79:10-
Base Model			0.00	0.000	0.00	0.000	0.194	-	0.083	-	0.038	-	6.79	6.53	6.76	6.69
Output and Capacity Utilization																
3	IPC	DLN	1.08	0.374	2.46	0.004	0.241	46	0.132	98	0.200	49	6.68	6.17	6.63	6.45
4	IPCN	DLN	2.25	0.038	1.79	0.050	0.229	71	0.113	119	0.104	98	6.67	6.44	6.63	6.67
5	IPCD	DLN	0.70	0.654	2.05	0.020	0.221	97	0.110	125	0.132	79	6.71	6.36	6.68	6.58
6	IPD	DLN	2.85	0.010	2.19	0.012	0.253	31	0.124	109	0.059	136	6.49	6.71	6.44	6.94
7	IPN	DLN	4.23	0.000	2.58	0.003	0.267	17	0.195	48	0.104	97	6.31	6.23	6.27	6.45
8	IPMIN	DLN	0.81	0.563	1.08	0.380	0.221	100	0.129	103	0.110	91	6.70	6.15	6.64	6.49
9	IPUT	DLN	0.95	0.462	1.20	0.279	0.207	145	0.085	161	0.044	154	6.79	6.51	6.76	6.68
10	IPE	DLN	0.67	0.674	0.76	0.687	0.204	152	0.096	145	0.090	109	6.76	6.44	6.72	6.68
11	IPMFG	DLN	1.34	0.239	1.67	0.073	0.213	125	0.126	105	0.072	126	6.75	6.08	6.68	6.46
12	IPM	DLN	0.72	0.633	1.32	0.205	0.245	41	0.127	104	0.096	103	6.60	6.42	6.57	6.59
13	IPI	DLN	3.90	0.001	2.65	0.002	0.252	33	0.196	47	0.164	58	6.25	6.36	6.18	6.73
14	IPF	DLN	0.41	0.873	1.11	0.355	0.233	61	0.097	144	0.053	145	6.73	6.49	6.70	6.66
15	IPX	D	1.23	0.294	0.76	0.690	0.265	19	0.171	65	0.174	55	6.84	6.20	6.70	6.83
16	IPXDCA	D	1.39	0.218	1.97	0.028	0.279	13	0.160	70	0.110	92	6.82	6.34	6.74	6.62
17	IPXMCA	D	0.66	0.680	1.21	0.273	0.203	153	0.112	121	0.064	132	6.72	6.32	6.65	6.79
Consumption, Sales and Income																
18	GMC82	DLN	3.09	0.006	2.75	0.001	0.241	47	0.188	55	0.219	38	6.17	6.63	6.11	6.93
19	GMCD82	DLN	1.43	0.204	1.37	0.178	0.218	112	0.129	102	0.117	88	6.51	6.59	6.45	6.96
20	GMPY	DLN	2.51	0.022	1.69	0.068	0.227	79	0.140	87	0.154	71	6.64	6.16	6.59	6.44
21	GMPY82	DLN	1.38	0.222	2.27	0.009	0.213	126	0.108	127	0.078	119	6.57	6.72	6.49	7.15
22	GMYXP8	DLN	0.78	0.587	1.88	0.036	0.212	127	0.109	126	0.072	124	6.53	6.79	6.41	7.49
23	GMWS82	DLN	0.52	0.795	0.94	0.506	0.204	149	0.115	116	0.098	101	6.63	6.49	6.55	7.04
24	MT82	DLN	2.31	0.034	1.97	0.027	0.218	110	0.154	75	0.069	128	6.36	6.63	6.29	7.04
25	MSM8	DLN	0.42	0.866	1.10	0.359	0.256	26	0.152	78	0.085	115	6.76	6.51	6.62	7.07
26	WT8	DLN	1.34	0.242	1.83	0.044	0.270	16	0.161	69	0.133	78	6.74	6.45	6.69	6.67
27	RT8	DLN	2.20	0.044	1.97	0.028	0.289	9	0.218	39	0.254	25	6.45	6.32	6.37	6.61
28	RTR82	DLN	2.43	0.026	1.94	0.030	0.229	73	0.158	71	0.163	61	6.45	6.38	6.41	6.61
29	RCARD	DLN	0.60	0.732	1.24	0.253	0.214	118	0.100	139	0.093	107	6.70	6.53	6.66	6.74
30	RCARTA	DLN	0.46	0.835	1.24	0.253	0.213	124	0.098	142	0.097	102	6.70	6.54	6.67	6.74

Table 3, continued

Inventories, Orders, and Performance														
31	MPCON8	DLN	4.03	0.001	2.41	0.005	0.242	44	0.112	122	0.053	147	6.67 6.45	6.64 6.62
32	MSOND8	DLN	4.24	0.000	3.08	0.000	0.248	38	0.130	101	0.056	141	6.58 6.44	6.55 6.60
33	MOCM82	DLN	3.87	0.001	3.34	0.000	0.233	65	0.178	60	0.136	77	6.28 6.52	6.22 6.83
34	MO82	DLN	4.84	0.000	4.50	0.000	0.254	29	0.205	44	0.130	80	6.13 6.52	6.08 6.77
35	MDO82	DLN	4.38	0.000	3.76	0.000	0.245	39	0.157	73	0.099	100	6.45 6.40	6.41 6.61
36	MNO82	DLN	1.59	0.149	1.83	0.043	0.221	99	0.189	54	0.091	108	6.12 6.72	6.07 6.97
37	MU82	DLN	2.81	0.011	1.69	0.068	0.242	42	0.142	86	0.111	90	6.50 6.48	6.46 6.69
38	MDU82	DLN	2.83	0.011	1.94	0.029	0.239	49	0.136	93	0.124	83	6.56 6.39	6.53 6.58
39	MNU82	DLN	7.08	0.000	4.87	0.000	0.287	10	0.303	10	0.154	70	5.40 6.78	5.24 7.48
40	IVMT82	DLN	2.62	0.017	1.74	0.058	0.228	77	0.152	79	0.140	76	6.43 6.49	6.30 7.37
41	IVM1D8	N	1.55	0.160	1.05	0.406	0.227	78	0.194	49	0.160	64	6.17 6.55	6.01 7.53
42	IVM2D8	N	1.25	0.282	1.35	0.192	0.216	115	0.122	112	0.108	94	6.60 6.49	6.55 6.78
43	IVM3D8	N	2.50	0.023	1.78	0.051	0.231	66	0.147	84	0.072	125	6.52 6.36	6.40 7.23
44	IVT82	N	3.70	0.001	2.66	0.002	0.241	48	0.205	43	0.142	74	6.07 6.64	5.91 7.54
45	VENDOR	N	6.16	0.000	4.39	0.000	0.273	14	0.248	28	0.293	17	5.90 6.47	5.78 7.06
Housing and Construction														
46	HSBP	N	5.83	0.000	3.81	0.000	0.260	23	0.318	8	0.315	14	5.96 5.38	5.90 5.73
47	HSFR	N	3.64	0.002	2.69	0.002	0.237	56	0.286	16	0.248	27	6.09 5.50	6.06 5.73
48	CONDO9	DLN	1.79	0.100	1.11	0.355	0.224	91	0.113	118	0.055	143	6.64 6.51	6.62 6.64
Money and Credit: Quantity Variables														
49	FMBASE	DLN	1.10	0.361	0.88	0.573	0.204	151	0.096	147	0.050	148	6.80 6.34	6.73 6.77
50	FMBASER	DLN	3.71	0.001	2.23	0.011	0.233	62	0.288	15	0.365	7	5.81 6.15	5.42 8.64
51	FM1	DLN	2.07	0.057	1.22	0.268	0.212	129	0.111	124	0.054	144	6.69 6.41	6.53 7.84
52	FM1D82	DLN	3.95	0.001	2.03	0.021	0.238	54	0.239	32	0.226	35	5.92 6.54	5.06 12.27
53	FM2	DLN	3.79	0.001	2.18	0.012	0.233	64	0.243	30	0.216	39	5.88 6.57	5.73 7.34
54	FM2D82	DLN	5.35	0.000	2.95	0.001	0.260	22	0.390	5	0.480	2	5.04 6.35	4.79 7.52
55	FM3	DLN	1.61	0.144	1.57	0.100	0.208	139	0.130	100	0.080	116	6.44 6.75	6.33 7.35
56	FM3R	DLN	3.55	0.002	2.09	0.017	0.239	51	0.291	14	0.348	9	5.51 6.70	5.34 7.48
57	FML	DLN	1.29	0.260	1.75	0.055	0.208	143	0.107	129	0.056	140	6.64 6.58	6.54 7.18
58	FMLR	DLN	3.24	0.004	1.90	0.033	0.239	50	0.268	21	0.280	23	5.50 6.99	5.08 8.92
59	FCLN82	DLN	4.49	0.000	2.51	0.004	0.237	57	0.173	62	0.150	72	6.66 5.66	6.60 6.05
60	FCBCUC	N	3.23	0.004	2.21	0.011	0.226	85	0.150	81	0.140	75	6.60 6.12	6.45 7.04
61	FCBCUCY	N	1.44	0.199	1.61	0.088	0.208	140	0.102	132	0.046	152	6.67 6.57	6.58 7.09
62	FCLBMCY	N	5.30	0.000	3.83	0.000	0.255	27	0.360	6	0.416	4	5.82 5.08	5.75 5.56
63	CCBPY	DLN	1.10	0.361	0.80	0.653	0.207	144	0.096	146	0.041	158	6.67 6.64	6.60 7.04
64	CCI30M	DLN	1.54	0.163	1.45	0.143	0.209	137	0.105	131	0.113	89	6.65 6.59	6.56 7.15

Table 3, continued

Stock Prices and Volume														
65	FSPCOM	DLN	5.12	0.000	3.15	0.000	0.251	35	0.302	12	0.238	29	5.76 6.05	5.65 6.69
66	FSPIN	DLN	5.11	0.000	3.17	0.000	0.252	34	0.298	13	0.234	33	5.79 6.06	5.67 6.70
67	FSDJ	DLN	4.75	0.000	2.69	0.002	0.251	36	0.283	17	0.208	45	5.90 6.00	5.79 6.67
68	FSVOL	DLN	0.37	0.900	2.05	0.020	0.198	158	0.094	149	0.065	130	6.74 6.51	6.71 6.69
Interest Rates and Spreads														
69	FYFF	D	2.14	0.049	2.15	0.014	0.212	131	0.179	58	0.208	44	6.50 5.99	6.19 9.62
70	FYGM3	D	2.27	0.037	1.79	0.049	0.214	119	0.124	107	0.146	73	6.77 6.03	6.62 7.62
71	FYGM6	D	2.78	0.012	2.05	0.020	0.215	116	0.138	91	0.163	60	6.79 5.81	6.63 7.31
72	FYGT1	D	3.19	0.005	2.22	0.011	0.221	98	0.153	77	0.176	54	6.75 5.69	6.58 7.25
73	FYGT10	D	2.82	0.011	1.77	0.053	0.218	106	0.149	82	0.173	56	6.73 5.81	6.61 6.96
74	FYGL	D	2.59	0.018	1.76	0.053	0.217	113	0.156	74	0.187	51	6.67 5.86	6.50 8.14
75	FYCP	D	3.72	0.001	2.97	0.001	0.226	86	0.209	41	0.224	37	6.43 5.75	6.18 8.16
76	FYBAC	D	3.07	0.006	2.85	0.001	0.222	93	0.193	51	0.204	47	6.47 5.89	6.21 8.49
77	FYAAAC	D	4.50	0.000	2.54	0.003	0.239	52	0.204	45	0.226	36	6.48 5.69	6.21 9.06
78	FYBAAC	D	4.68	0.000	2.57	0.003	0.245	40	0.251	27	0.249	26	6.22 5.69	5.79 10.19
79	GL_GM3	N	3.06	0.006	1.69	0.069	0.233	63	0.255	26	0.335	10	5.99 6.18	5.52 9.57
80	G10_G1	N	4.57	0.000	2.33	0.007	0.249	37	0.302	11	0.377	5	5.82 5.93	5.52 7.77
81	G10_GM3	N	2.35	0.031	1.37	0.178	0.225	88	0.236	34	0.303	15	6.10 6.18	5.82 8.13
82	G1_GM6	N	0.85	0.534	1.24	0.255	0.209	135	0.102	134	0.053	146	6.77 6.33	6.70 7.07
83	G1_GM3	N	0.37	0.897	0.76	0.692	0.199	157	0.100	138	0.072	123	6.77 6.36	6.71 6.84
84	GM6_GM3	N	0.40	0.879	0.81	0.639	0.201	156	0.140	88	0.163	62	6.79 5.78	6.73 6.38
85	GM3_FF	N	5.97	0.000	3.44	0.000	0.280	12	0.432	3	0.436	3	4.82 6.20	4.64 7.08
86	CP6_GM6	N	9.24	0.000	5.75	0.000	0.316	3	0.491	1	0.352	8	4.43 6.10	4.32 6.53
87	BAC_GM3	N	7.28	0.000	5.32	0.000	0.295	8	0.450	2	0.320	13	4.69 6.21	4.57 6.70
88	BAA_G10	N	6.05	0.000	3.15	0.000	0.260	21	0.185	57	0.108	93	6.22 6.56	6.04 7.55
89	BAA_AAA	N	7.74	0.000	4.22	0.000	0.281	11	0.167	67	0.090	110	6.35 6.50	6.20 7.65
90	AAA_GL	N	3.43	0.003	2.02	0.022	0.237	58	0.178	59	0.074	122	6.35 6.35	6.31 6.62
91	FF_CP6	N	2.27	0.037	1.56	0.103	0.227	81	0.240	31	0.329	11	6.06 6.22	5.89 7.70
92	FF_BAC	N	2.40	0.028	1.80	0.047	0.228	76	0.270	19	0.368	6	5.83 6.34	5.73 6.91
93	FF_G10	N	4.47	0.000	2.31	0.008	0.259	24	0.393	4	0.488	1	5.14 6.12	4.86 7.98
94	FYFFR	D	2.09	0.054	1.35	0.188	0.219	104	0.099	140	0.056	142	6.81 6.28	6.55 8.76
95	FYGM3R	D	2.37	0.029	1.52	0.116	0.222	96	0.092	150	0.042	157	6.68 6.67	6.11 10.95
96	FYGM6R	D	2.80	0.012	1.68	0.069	0.223	92	0.090	154	0.042	156	6.70 6.64	6.16 10.29
97	FYGT1R	D	3.28	0.004	1.91	0.033	0.229	72	0.091	153	0.042	155	6.76 6.51	6.28 9.71
98	FYGT10R	D	3.21	0.005	1.85	0.039	0.228	75	0.099	141	0.058	138	6.58 6.82	6.14 9.35
Aggregate Employment and Labor Force Participation														
99	LPMHUADJ	DLN	1.11	0.358	2.46	0.004	0.213	121	0.091	152	0.090	112	6.77 6.47	6.74 6.66
100	LHOURS	DLN	0.25	0.958	0.90	0.546	0.195	161	0.089	156	0.041	159	6.77 6.51	6.73 6.72
101	LHEM	DLN	1.45	0.195	1.90	0.034	0.203	154	0.094	148	0.059	135	6.78 6.41	6.73 6.66

Table 3, continued

102	LHTNAG	DLN	1.62	0.142	1.52	0.114	0.219	105	0.098	143	0.049	150	6.73	6.48	6.69	6.71
103	LHCH	D	0.68	0.663	0.71	0.746	0.197	160	0.085	160	0.040	160	6.78	6.53	6.74	6.77
104	LHNAGP	DLN	4.75	0.000	3.80	0.000	0.253	32	0.161	68	0.060	134	6.36	6.56	6.31	6.80
105	LHNAPS	DLN	6.68	0.000	3.78	0.000	0.271	15	0.222	36	0.079	118	6.09	6.38	6.05	6.62
106	LHNPVX	D	3.17	0.005	2.79	0.001	0.236	59	0.139	90	0.058	137	6.45	6.62	6.41	6.84
107	LHUL	DLN	3.01	0.008	1.88	0.037	0.310	5	0.157	72	0.107	95	6.81	6.38	6.75	6.65
108	LHULLHEM	N	4.32	0.000	2.82	0.001	0.319	2	0.220	37	0.237	31	6.59	6.09	6.43	6.97
109	LHMUR	N	4.02	0.001	2.20	0.012	0.229	70	0.136	94	0.127	82	6.61	6.28	6.39	8.13
110	LPHRM	N	1.16	0.329	1.32	0.206	0.220	103	0.117	115	0.118	87	6.64	6.45	6.59	6.74
111	LPHRD	N	1.46	0.192	1.42	0.155	0.224	90	0.111	123	0.118	86	6.68	6.43	6.64	6.69
112	LPMOSA	N	1.30	0.257	1.52	0.117	0.227	83	0.197	46	0.233	34	6.21	6.43	6.14	6.82
113	LHU5	DLN	1.47	0.188	1.47	0.134	0.210	133	0.137	92	0.094	105	6.56	6.40	6.51	6.67
114	LHU680	N	1.14	0.339	1.55	0.106	0.217	114	0.193	50	0.205	46	6.37	6.12	6.15	7.70
115	LHEL	DLN	13.06	0.000	7.84	0.000	0.347	1	0.329	7	0.154	69	5.49	6.29	5.42	6.59
116	LHELX	N	4.94	0.000	2.66	0.002	0.257	25	0.268	20	0.237	30	5.72	6.58	5.55	7.41
117	LUINC	DLN	7.29	0.000	4.76	0.000	0.255	28	0.237	33	0.157	67	6.00	6.38	5.87	7.12
Employment by Sector																
118	LPNAG	DLN	0.63	0.709	1.85	0.039	0.213	123	0.102	133	0.129	81	6.72	6.45	6.69	6.66
119	LPMI	DLN	2.28	0.036	2.27	0.009	0.242	45	0.172	64	0.187	52	6.60	5.83	6.54	6.17
120	LPCC	DLN	1.05	0.395	1.97	0.026	0.209	136	0.100	137	0.047	151	6.68	6.58	6.64	6.77
121	LPEM	DLN	1.19	0.310	1.67	0.073	0.227	80	0.123	110	0.182	53	6.70	6.23	6.65	6.54
122	LPED	DLN	0.45	0.843	1.13	0.335	0.220	102	0.132	97	0.210	41	6.72	6.08	6.65	6.44
123	LPEN	DLN	2.68	0.015	1.66	0.075	0.254	30	0.151	80	0.088	113	6.46	6.45	6.43	6.65
124	LPTW	DLN	1.28	0.268	1.62	0.086	0.227	82	0.146	85	0.197	50	6.58	6.23	6.53	6.53
125	LPTR	DLN	1.51	0.174	1.81	0.045	0.212	130	0.087	159	0.044	153	6.77	6.53	6.73	6.76
126	LPFR	DLN	1.31	0.254	1.41	0.162	0.206	146	0.124	108	0.101	99	6.58	6.52	6.55	6.69
127	LPSPA	DLN	0.69	0.657	0.63	0.817	0.203	155	0.089	155	0.068	129	6.73	6.58	6.68	6.94
128	LPGOV	DLN	0.64	0.701	1.73	0.060	0.197	159	0.101	135	0.060	133	6.80	6.27	6.75	6.62
129	LPSPNGA	DLN	1.17	0.321	0.79	0.665	0.205	147	0.108	128	0.121	84	6.68	6.49	6.63	6.77
Productivity and Real Wages																
130	IPROD1	DLN	1.11	0.358	2.46	0.004	0.213	120	0.091	151	0.090	111	6.77	6.47	6.74	6.66
131	PLM	DLN	1.79	0.100	2.62	0.002	0.212	128	0.190	52	0.261	24	6.49	5.85	6.43	6.22
132	PLM82	DLN	1.80	0.098	1.53	0.112	0.215	117	0.125	106	0.080	117	6.41	6.88	6.28	7.53
133	LEHM	DLN	1.95	0.073	1.93	0.030	0.231	68	0.206	42	0.157	66	6.20	6.35	6.15	6.63
134	LEHM82	DLN	1.16	0.326	2.03	0.021	0.205	148	0.117	113	0.161	63	6.60	6.56	6.52	6.97
135	RPWGMS	N	2.91	0.009	2.55	0.003	0.221	101	0.186	56	0.214	40	6.13	6.74	6.02	7.35
136	RPWGMDS	N	3.55	0.002	2.98	0.001	0.226	87	0.170	66	0.164	59	6.23	6.72	6.14	7.19

Table 3, continued

Prices															
137	PUNEW	DLN	3.36	0.003	2.50	0.004	0.239	53	0.225	35	0.294	16	6.22	6.05	6.17 6.40
138	PZUNEW	DLN	2.33	0.032	1.74	0.057	0.230	69	0.219	38	0.282	22	6.22	6.13	6.16 6.46
139	PW	DLN	3.09	0.006	1.99	0.025	0.229	74	0.210	40	0.236	32	6.10	6.52	6.01 6.97
140	PW1200	DLN	2.62	0.017	2.08	0.018	0.225	89	0.115	117	0.156	68	6.62	6.53	6.54 7.01
141	PW1300	DLN	1.71	0.119	1.08	0.376	0.222	94	0.173	63	0.164	57	6.35	6.42	6.26 6.96
142	PWCMP	DLN	1.91	0.078	1.50	0.124	0.213	122	0.089	157	0.069	127	6.76	6.51	6.73 6.72
143	PWFC	DLN	1.48	0.183	1.22	0.267	0.218	109	0.177	61	0.209	43	6.32	6.43	6.26 6.77
144	PWFP	DLN	3.72	0.001	2.47	0.004	0.242	43	0.263	22	0.209	42	5.91	6.25	5.85 6.59
145	PWFUEL	DLN	0.76	0.600	1.81	0.046	0.208	142	0.189	53	0.200	48	6.13	6.69	5.81 8.87
146	PWIC	DLN	3.49	0.002	2.63	0.002	0.237	55	0.255	25	0.282	21	5.79	6.61	5.64 7.37
147	PWIMS	DLN	3.10	0.006	1.91	0.032	0.235	60	0.273	18	0.285	19	5.70	6.57	5.59 7.10
148	PWIMSM	DLN	5.83	0.000	3.04	0.001	0.266	18	0.305	9	0.326	12	5.49	6.56	5.38 7.09
149	PSMC99A	DLN	2.64	0.016	3.03	0.001	0.231	67	0.140	89	0.160	65	6.40	6.70	6.31 7.22
150	PSCCOM	DLN	2.68	0.015	2.37	0.006	0.222	95	0.107	130	0.119	85	6.62	6.62	6.53 7.12
Exchange Rates and Foreign Trade															
151	EXRWT1	DLN	1.88	0.083	1.35	0.191	0.218	108	0.153	76	0.095	104	6.60	6.10	6.55 6.49
152	EXRWT2	DLN	1.52	0.171	1.32	0.203	0.211	132	0.131	99	0.075	121	6.69	6.16	6.65 6.49
153	EXNWT1	DLN	1.35	0.233	1.34	0.195	0.210	134	0.133	95	0.077	120	6.69	6.13	6.65 6.36
154	EXNWT2	DLN	1.03	0.407	1.27	0.232	0.204	150	0.117	114	0.065	131	6.73	6.23	6.69 6.51
155	EXVUS	DLN	0.66	0.679	0.88	0.564	0.263	20	0.149	83	0.105	96	6.92	6.31	6.88 6.53
156	IMY1	DLN	1.15	0.335	1.57	0.098	0.218	107	0.122	111	0.094	106	6.56	6.59	6.51 6.86
157	EXY1	DLN	1.20	0.307	0.93	0.515	0.209	138	0.113	120	0.086	114	6.60	6.60	6.54 6.92
158	TB1	D	0.83	0.544	1.32	0.203	0.208	141	0.088	158	0.039	161	6.76	6.52	6.71 6.88
Misc.: Government and other															
159	FBD	DLN	2.07	0.058	1.16	0.313	0.298	6	0.246	29	0.245	28	6.56	6.19	6.25 7.74
160	FBDY	DLN	3.01	0.008	1.80	0.050	0.313	4	0.259	24	0.283	20	6.53	6.10	6.01 9.10
161	FBYS	N	1.69	0.124	1.40	0.167	0.295	7	0.262	23	0.288	18	7.15	5.61	7.03 6.14
162	FAIL	DLN	1.84	0.092	1.65	0.077	0.218	111	0.101	136	0.056	139	6.68	6.55	6.65 6.73
163	INC	DLN	2.26	0.038	1.91	0.033	0.226	84	0.133	96	0.049	149	6.47	6.64	6.42 6.92
Standard, Rank Correlations between columns in Tables 2 and 3															
Standard Correlation			0.95	0.78	0.92	0.77	0.95	0.99	0.99	0.99	0.95	0.99	0.98		
Rank Correlation			0.91	0.91	0.84	0.84	0.93	0.98	0.99	0.97	0.95	0.98	0.94		

Notes: The statistics are identical to the statisitics reported in Table 2 with ICI repaced everywhere by IP. See the notes to Table 2 for detailed description. The final two rows provide the correlation and rank correlation of the respective columns in Tables 2 and 3.

Table 4

Marginal Predictive Content for 1-month ICI growth, given lagged M2 growth, inflation, and the 90 day T-Bill rate

Series		Trans.	F_x	p_x	F_m	p_m	$R^2(1)$	rank	$R^2(6)$	rank	$R^2(12)$	rank	Subsample Stability: RMSE's - 88:12 -79:9	79:10-	- 79:9 -79:9	79:10-
Base Model			0.00	0.000	3.76	0.001	0.350	-	0.425	-	0.507	-	3.38	4.16	3.17	5.21
Output and Capacity Utilization																
3	IPC	DLN	2.84	0.010	4.10	0.001	0.383	27	0.428	151	0.521	58	3.33	4.22	3.04	5.55
4	IPCN	DLN	2.59	0.018	3.72	0.001	0.380	34	0.437	90	0.531	28	3.38	4.03	3.12	5.40
5	IPCD	DLN	2.51	0.022	4.83	0.000	0.379	41	0.440	77	0.510	136	3.26	4.23	3.04	5.30
6	IPD	DLN	2.38	0.029	3.77	0.001	0.378	42	0.442	73	0.509	144	3.27	4.20	3.07	5.23
7	IPN	DLN	3.12	0.006	2.66	0.015	0.386	23	0.457	47	0.515	88	3.30	4.00	3.10	5.03
8	IPMIN	DLN	0.84	0.542	3.32	0.003	0.360	120	0.426	158	0.509	149	3.37	4.15	3.17	5.26
9	IPUT	DLN	1.34	0.238	3.72	0.001	0.366	84	0.427	152	0.516	76	3.38	4.13	3.06	5.99
10	IPE	DLN	2.09	0.054	4.20	0.000	0.374	52	0.455	50	0.516	81	3.35	3.94	3.15	5.02
11	IPMFG	DLN	0.97	0.449	3.47	0.002	0.362	104	0.430	128	0.509	150	3.35	4.16	3.08	5.54
12	IPM	DLN	2.81	0.011	3.76	0.001	0.382	33	0.438	84	0.515	86	3.33	4.13	3.13	5.14
13	IPI	DLN	1.28	0.267	2.75	0.013	0.365	92	0.437	91	0.525	42	3.37	4.07	3.16	5.17
14	IPF	DLN	1.64	0.136	3.42	0.003	0.369	72	0.431	124	0.520	67	3.40	4.06	3.12	5.56
15	IPX	D	0.94	0.469	2.12	0.052	0.407	11	0.457	48	0.521	61	3.46	3.98	3.02	5.33
16	IPXDCA	D	1.10	0.365	2.61	0.018	0.410	9	0.463	33	0.511	112	3.35	4.06	2.99	5.09
17	IPXMCA	D	0.89	0.504	3.48	0.002	0.361	112	0.429	136	0.508	155	3.37	4.14	3.15	5.32
Consumption, Sales and Income																
18	GMC82	DLN	0.41	0.873	2.97	0.008	0.355	148	0.429	137	0.526	39	3.34	4.18	3.11	5.38
19	GMCD82	DLN	0.20	0.977	3.47	0.002	0.352	157	0.435	102	0.508	158	3.36	4.11	3.15	5.22
20	GMPY	DLN	0.65	0.687	3.64	0.002	0.358	139	0.428	142	0.512	107	3.33	4.22	3.02	5.63
21	GMPY82	DLN	0.83	0.549	3.85	0.001	0.360	123	0.431	120	0.514	91	3.35	4.16	3.12	5.27
22	GMYXP8	DLN	0.52	0.795	3.69	0.001	0.356	145	0.433	106	0.515	87	3.33	4.18	3.08	5.31
23	GMWS82	DLN	0.68	0.665	3.92	0.001	0.358	138	0.437	89	0.526	38	3.34	4.12	3.13	5.19
24	MT82	DLN	0.86	0.522	3.57	0.002	0.360	121	0.427	153	0.512	104	3.37	4.15	3.15	5.31
25	MSM8	DLN	1.49	0.183	2.87	0.010	0.416	7	0.469	26	0.513	96	3.43	3.92	3.08	5.08
26	WT8	DLN	0.60	0.733	2.55	0.021	0.402	13	0.472	24	0.515	89	3.40	3.94	3.03	5.16
27	RT8	DLN	1.04	0.402	2.15	0.049	0.409	10	0.456	49	0.516	79	3.47	3.98	3.07	5.28
28	RTR82	DLN	0.71	0.642	3.05	0.006	0.359	133	0.428	148	0.513	98	3.37	4.15	3.16	5.22
29	RCARD	DLN	1.76	0.108	3.79	0.001	0.371	60	0.437	88	0.509	142	3.31	4.17	3.11	5.24
30	RCARTA	DLN	2.38	0.029	3.91	0.001	0.378	43	0.439	82	0.509	139	3.31	4.16	3.11	5.18

Table 4, continued

Inventories, Orders, and Performance														
31	MPCON8	DLN	1.72	0.116	3.04	0.007	0.370	68	0.433	113	0.509	138	3.36 4.11	3.16 5.20
32	MSOND8	DLN	2.43	0.026	3.01	0.007	0.378	44	0.449	59	0.510	129	3.32 4.04	3.13 5.06
33	MOCM82	DLN	0.85	0.534	2.84	0.010	0.360	124	0.429	130	0.511	119	3.36 4.16	3.15 5.23
34	MO82	DLN	1.43	0.203	2.59	0.018	0.367	82	0.433	112	0.510	127	3.35 4.13	3.14 5.24
35	MDO82	DLN	1.34	0.237	2.53	0.021	0.366	85	0.431	123	0.511	120	3.36 4.13	3.15 5.24
36	MNO82	DLN	0.11	0.995	3.58	0.002	0.351	158	0.434	104	0.510	125	3.33 4.15	3.08 5.57
37	MU82	DLN	3.58	0.002	3.04	0.007	0.391	19	0.460	40	0.520	63	3.22 4.13	3.03 5.01
38	MDU82	DLN	2.75	0.013	3.27	0.004	0.382	31	0.458	44	0.522	53	3.27 4.06	3.08 4.98
39	MNU82	DLN	3.95	0.001	2.49	0.023	0.395	17	0.498	7	0.518	71	2.95 4.25	2.71 5.21
40	IVMT82	DLN	0.78	0.586	3.01	0.007	0.359	131	0.433	114	0.516	80	3.36 4.13	3.13 5.35
41	IVM1D8	N	1.45	0.194	3.57	0.002	0.367	81	0.446	65	0.522	54	3.27 4.16	3.03 5.34
42	IVM2D8	N	3.02	0.007	4.31	0.000	0.385	24	0.451	55	0.520	62	3.30 4.07	3.11 5.07
43	IVM3D8	N	1.16	0.325	2.85	0.010	0.364	97	0.441	75	0.511	118	3.30 4.15	3.01 5.66
44	IVT82	N	0.81	0.567	3.46	0.003	0.360	117	0.429	129	0.508	156	3.38 4.11	3.09 5.70
45	VENDOR	N	4.64	0.000	3.06	0.006	0.402	14	0.459	42	0.542	16	3.29 4.01	3.11 4.92
Housing and Construction														
46	HSBP	N	2.60	0.018	1.90	0.081	0.380	38	0.469	27	0.532	25	3.32 3.85	3.11 5.01
47	HSFR	N	0.89	0.504	2.08	0.056	0.361	114	0.466	30	0.522	52	3.30 3.92	3.09 5.05
48	CONDO9	DLN	0.75	0.610	2.82	0.011	0.359	127	0.428	150	0.509	141	3.38 4.12	3.16 5.32
Money and Credit: Quantity Variables														
49	FMBASE	DLN	0.28	0.948	3.24	0.004	0.353	156	0.448	61	0.533	24	3.26 4.15	2.93 5.91
50	FMBASER	DLN	0.66	0.680	2.60	0.018	0.358	135	0.436	95	0.538	21	3.38 4.05	3.13 5.45
51	FM1	DLN	0.94	0.465	3.15	0.005	0.361	110	0.429	131	0.514	94	3.34 4.20	2.90 6.95
52	FM1D82	DLN	0.74	0.615	2.39	0.028	0.359	129	0.426	157	0.513	97	3.37 4.16	3.11 5.99
53	FM2	DLN	1.25	0.278	2.34	0.032	0.365	91	0.436	97	0.510	128	3.28 4.24	2.94 5.88
55	FM3	DLN	0.76	0.605	2.86	0.010	0.359	130	0.431	122	0.511	113	3.42 4.02	3.05 5.88
56	FM3R	DLN	0.61	0.722	2.24	0.039	0.357	141	0.437	92	0.511	109	3.42 3.96	3.17 5.26
57	FML	DLN	1.46	0.191	3.25	0.004	0.367	77	0.433	105	0.518	70	3.40 4.04	2.89 6.51
58	FMLR	DLN	0.32	0.929	2.00	0.065	0.354	150	0.436	96	0.521	60	3.44 3.94	3.15 5.52
59	FCLN82	DLN	3.47	0.003	2.99	0.007	0.390	21	0.476	19	0.570	7	3.41 3.59	3.15 5.11
60	FCBCUC	N	0.72	0.633	3.70	0.001	0.359	132	0.432	116	0.526	40	3.40 4.04	3.15 5.36
61	FCBCUCY	N	0.57	0.753	3.76	0.001	0.357	142	0.433	110	0.525	41	3.36 4.12	3.12 5.41
62	FCLBMCY	N	1.96	0.071	2.53	0.021	0.373	56	0.493	8	0.592	4	3.39 3.47	3.13 5.02
63	CCBPY	DLN	0.34	0.913	3.56	0.002	0.354	152	0.429	132	0.513	99	3.37 4.12	3.15 5.30
64	CCI30M	DLN	1.31	0.251	3.99	0.001	0.366	87	0.437	87	0.527	34	3.35 4.10	3.16 5.12
Stock Prices and Volume														
65	FSPCOM	DLN	1.79	0.102	2.30	0.035	0.371	61	0.484	12	0.540	18	3.21 3.92	2.92 5.53
66	FSPIN	DLN	1.83	0.093	2.36	0.030	0.372	57	0.487	10	0.544	15	3.21 3.89	2.93 5.48

Table 4, continued

67	FSDJ	DLN	1.61	0.143	2.42	0.027	0.369	71	0.474	23	0.529	31	3.23	3.98	2.94 5.57
68	FSVOL	DLN	0.27	0.950	3.42	0.003	0.353	155	0.429	134	0.520	66	3.37	4.13	3.15 5.41
Interest Rates and Spreads															
69	FYFF	D	1.19	0.309	3.73	0.001	0.364	95	0.461	39	0.523	48	3.22	4.12	2.96 5.65
71	FYGM6	D	0.46	0.836	3.58	0.002	0.356	144	0.429	135	0.510	131	3.39	4.10	3.16 5.46
72	FYGT1	D	1.00	0.429	3.59	0.002	0.362	108	0.430	125	0.510	132	3.38	4.12	3.13 5.68
73	FYGT10	D	0.38	0.892	3.58	0.002	0.355	147	0.431	121	0.511	114	3.35	4.15	3.15 5.39
74	FYGL	D	0.35	0.907	3.48	0.002	0.354	151	0.428	144	0.509	147	3.36	4.15	3.14 5.59
75	FYCP	D	1.24	0.285	3.11	0.006	0.365	93	0.488	9	0.524	44	3.15	3.99	2.87 5.56
76	FYBAC	D	1.71	0.117	2.97	0.008	0.370	67	0.486	11	0.521	59	3.12	4.06	2.85 5.51
77	FYAAAC	D	0.52	0.791	2.78	0.012	0.356	146	0.433	111	0.508	153	3.36	4.12	3.15 5.27
78	FYBAAC	D	0.72	0.635	2.05	0.059	0.359	126	0.441	74	0.511	111	3.32	4.11	3.10 5.30
79	GL_GM3	N	0.93	0.474	2.88	0.010	0.361	111	0.461	38	0.560	9	3.34	3.90	3.10 5.37
80	G10_G1	N	0.95	0.457	2.20	0.043	0.361	113	0.482	14	0.572	6	3.30	3.77	3.01 5.68
81	G10_GM3	N	0.66	0.681	2.94	0.008	0.358	137	0.454	54	0.549	12	3.31	4.01	3.09 5.36
82	G1_GM6	N	1.03	0.406	3.73	0.001	0.362	106	0.427	155	0.509	151	3.39	4.11	3.09 5.88
83	G1_GM3	N	0.70	0.651	3.78	0.001	0.358	136	0.428	143	0.513	102	3.37	4.14	3.11 5.69
84	GM6_GM3	N	0.41	0.876	3.55	0.002	0.355	149	0.439	79	0.539	19	3.39	4.01	3.16 5.41
85	GM3_FF	N	3.59	0.002	2.05	0.058	0.391	18	0.540	4	0.607	3	2.99	3.76	2.78 5.02
86	CP6_GM6	N	5.52	0.000	1.55	0.162	0.411	8	0.582	1	0.554	11	2.67	3.89	2.55 4.44
87	BAC_GM3	N	4.93	0.000	1.53	0.168	0.405	12	0.543	3	0.538	20	2.90	3.91	2.73 4.82
88	BAA_G10	N	2.74	0.013	2.77	0.012	0.382	28	0.460	41	0.514	90	3.24	4.09	3.03 5.39
89	BAA_AAA	N	2.99	0.007	2.44	0.025	0.384	26	0.435	101	0.514	93	3.35	4.11	3.12 5.59
90	AAA_GL	N	2.73	0.013	3.16	0.005	0.382	30	0.463	34	0.513	95	3.26	4.02	3.02 5.39
91	FF_CP6	N	1.29	0.260	3.42	0.003	0.365	94	0.455	52	0.581	5	3.38	3.87	3.17 5.22
92	FF_BAC	N	1.00	0.426	3.18	0.005	0.362	103	0.476	18	0.615	2	3.29	3.84	3.09 5.07
93	FF_G10	N	2.79	0.012	1.92	0.077	0.382	29	0.530	5	0.620	1	3.07	3.73	2.86 5.02
94	FYFFR	D	1.44	0.199	4.09	0.001	0.367	80	0.462	36	0.527	35	3.29	3.98	3.11 4.99
95	FYGM3R	D	1.46	0.190	3.72	0.001	0.367	83	0.438	83	0.516	75	3.39	4.01	3.15 5.60
96	FYGM6R	D	2.02	0.062	3.91	0.001	0.374	51	0.439	80	0.517	74	3.40	3.99	3.16 5.40
97	FYGT1R	D	2.38	0.029	3.91	0.001	0.378	45	0.439	78	0.515	85	3.39	3.99	3.17 5.26
98	FYGT10R	D	1.49	0.180	3.64	0.002	0.368	74	0.429	138	0.510	134	3.39	4.10	3.16 5.43
Aggregate Employment and Labor Force Participation															
99	LPMHUADJ	DLN	1.44	0.200	4.46	0.000	0.367	78	0.433	108	0.509	152	3.31	4.21	3.09 5.24
100	LHOURS	DLN	0.32	0.925	3.61	0.002	0.354	153	0.431	117	0.511	116	3.37	4.11	3.16 5.22
101	LHEM	DLN	0.76	0.603	3.93	0.001	0.359	128	0.427	156	0.512	108	3.36	4.17	3.16 5.19
102	LHTNAG	DLN	2.52	0.021	4.03	0.001	0.379	40	0.433	107	0.513	101	3.35	4.14	3.15 5.18
103	LHCH	D	0.86	0.522	3.67	0.002	0.360	118	0.438	86	0.509	145	3.34	4.10	3.16 5.09
104	LHNAGP	DLN	2.47	0.024	2.96	0.008	0.379	39	0.447	62	0.510	124	3.30	4.09	3.11 5.08
105	LHNAPS	DLN	3.62	0.002	2.09	0.054	0.391	20	0.467	28	0.510	135	3.22	4.06	3.03 4.98

Table 4, continued

106	LHNPVX	D	1.64	0.136	3.36	0.003	0.369	73	0.438	85	0.511	110	3.32 4.14	3.14 5.09
107	LHUL	DLN	2.94	0.009	2.02	0.064	0.437	3	0.477	17	0.516	77	3.46 3.82	3.10 5.10
108	LHULLHEM	N	3.49	0.003	2.47	0.025	0.444	2	0.505	6	0.559	10	3.30 3.80	2.91 5.32
109	LHMUR	N	1.95	0.072	3.68	0.001	0.373	54	0.435	99	0.520	64	3.35 4.11	3.12 5.38
110	LPHRM	N	2.13	0.050	3.88	0.001	0.375	50	0.431	118	0.523	50	3.37 4.12	3.17 5.20
111	LPHRD	N	2.57	0.019	3.88	0.001	0.380	37	0.431	119	0.524	43	3.35 4.15	3.16 5.15
112	LPMOSA	N	1.68	0.124	3.83	0.001	0.370	64	0.446	64	0.528	33	3.30 4.11	3.08 5.16
113	LHU5	DLN	1.92	0.077	3.87	0.001	0.373	55	0.436	93	0.516	78	3.37 4.08	3.16 5.18
114	LHU680	N	1.07	0.384	3.72	0.001	0.363	99	0.439	81	0.529	30	3.38 4.03	3.15 5.23
115	LHEL	DLN	9.50	0.000	1.22	0.296	0.448	1	0.563	2	0.531	27	2.79 3.89	2.64 4.57
116	LHELX	N	2.40	0.028	2.48	0.023	0.378	46	0.469	25	0.519	69	3.14 4.19	2.94 5.06
117	LUINC	DLN	1.38	0.224	2.61	0.018	0.366	88	0.459	43	0.521	56	3.27 4.05	3.01 5.40
Employment by Sector														
118	LPNAG	DLN	2.62	0.017	5.21	0.000	0.380	35	0.442	72	0.510	133	3.23 4.27	2.99 5.28
119	LPMI	DLN	2.91	0.009	3.42	0.003	0.384	25	0.429	139	0.518	72	3.40 4.08	3.15 5.41
120	LPCC	DLN	1.28	0.266	4.02	0.001	0.365	90	0.444	69	0.511	117	3.26 4.19	3.06 5.13
121	LPEM	DLN	3.32	0.004	4.54	0.000	0.388	22	0.434	103	0.532	26	3.37 4.10	3.15 5.17
122	LPED	DLN	1.77	0.104	4.06	0.001	0.371	63	0.429	140	0.537	22	3.40 4.08	3.17 5.22
123	LPEN	DLN	4.43	0.000	4.06	0.001	0.400	15	0.457	45	0.516	82	3.28 4.04	3.11 4.96
124	LPTW	DLN	2.79	0.012	4.96	0.000	0.382	32	0.455	51	0.513	100	3.23 4.15	3.02 5.10
125	LPTR	DLN	1.49	0.183	4.00	0.001	0.368	75	0.429	141	0.515	84	3.36 4.15	3.15 5.22
126	LPFR	DLN	0.81	0.565	3.95	0.001	0.360	125	0.436	94	0.509	148	3.31 4.18	3.10 5.27
127	LPSPA	DLN	1.39	0.218	4.71	0.000	0.367	79	0.449	57	0.522	55	3.26 4.15	3.04 5.22
128	LPGOV	DLN	0.28	0.946	3.79	0.001	0.353	154	0.446	66	0.534	23	3.36 3.99	3.14 5.18
129	LPSPNGA	DLN	1.33	0.243	4.61	0.000	0.366	86	0.435	100	0.509	146	3.30 4.22	3.07 5.26
Productivity and Real Wages														
130	IPROD1	DLN	1.68	0.125	4.09	0.001	0.370	65	0.435	98	0.510	130	3.31 4.20	3.03 5.47
131	PLM	DLN	0.99	0.430	3.79	0.001	0.362	107	0.428	145	0.523	46	3.40 4.08	3.07 5.64
132	PLM82	DLN	0.99	0.430	3.79	0.001	0.362	109	0.428	146	0.523	47	3.40 4.08	3.07 5.64
133	LEHM	DLN	1.79	0.101	3.91	0.001	0.371	62	0.444	71	0.512	103	3.39 3.96	3.14 5.33
134	LEHM82	DLN	2.33	0.033	4.88	0.000	0.377	47	0.465	31	0.510	122	3.24 4.03	3.04 5.06
135	RPWGMS	N	1.15	0.331	3.89	0.001	0.364	98	0.430	127	0.510	121	3.36 4.15	3.08 5.51
136	RPWGMDS	N	1.71	0.118	3.81	0.001	0.370	66	0.430	126	0.512	105	3.33 4.20	3.04 5.85
Prices														
137	PUNEW	DLN	1.05	0.394	3.25	0.004	0.363	101	0.432	115	0.510	126	3.31 4.21	2.96 5.89
138	PZUNEW	DLN	0.60	0.733	3.32	0.003	0.357	140	0.433	109	0.508	154	3.30 4.23	2.97 5.97
140	PW1200	DLN	2.25	0.038	3.89	0.001	0.376	49	0.476	20	0.521	57	3.22 3.97	3.04 5.00
141	PW1300	DLN	1.58	0.153	4.04	0.001	0.369	70	0.440	76	0.516	83	3.38 4.02	3.17 5.22
142	PWCMP	DLN	2.07	0.056	2.88	0.010	0.374	53	0.474	22	0.547	13	3.23 3.98	3.03 4.95

Table 4, continued

143	PWFC	DLN	1.13	0.347	3.63	0.002	0.363	100	0.445	68	0.514	92	3.21	4.27	2.98 5.36
144	PWFP	DLN	1.83	0.093	3.61	0.002	0.372	58	0.461	37	0.520	65	3.32	3.93	3.07 5.45
145	PWFUEL	DLN	1.20	0.304	3.96	0.001	0.364	96	0.454	53	0.509	140	3.24	4.13	2.87 6.14
146	PWIC	DLN	0.86	0.529	3.67	0.002	0.360	119	0.447	63	0.522	51	3.27	4.16	3.03 5.31
147	PWIMS	DLN	0.56	0.764	3.40	0.003	0.357	143	0.475	21	0.540	17	3.11	4.18	2.89 5.17
148	PWIMSM	DLN	2.28	0.036	3.27	0.004	0.377	48	0.479	15	0.564	8	3.10	4.15	2.92 5.04
149	PSMC99A	DLN	2.55	0.020	3.26	0.004	0.380	36	0.483	13	0.524	45	3.19	3.97	2.99 5.04
150	PSCCOM	DLN	1.61	0.145	3.18	0.005	0.369	69	0.449	58	0.511	115	3.35	4.00	3.15 5.05
Exchange Rates and Foreign Trade															
151	EXRWT1	DLN	0.97	0.443	3.13	0.005	0.362	105	0.449	60	0.517	73	3.30	4.07	3.09 5.17
152	EXRWT2	DLN	0.81	0.566	3.40	0.003	0.360	122	0.446	67	0.519	68	3.32	4.07	3.11 5.15
153	EXNWT1	DLN	0.95	0.463	3.56	0.002	0.361	115	0.457	46	0.526	36	3.29	4.03	3.07 5.08
154	EXNWT2	DLN	0.69	0.656	3.64	0.002	0.358	134	0.450	56	0.526	37	3.31	4.05	3.10 5.06
155	EXVUS	DLN	0.37	0.895	2.31	0.035	0.399	16	0.463	35	0.531	29	3.45	3.95	3.05 5.23
156	IMY1	DLN	1.50	0.178	3.79	0.001	0.368	76	0.428	147	0.510	123	3.37	4.15	3.16 5.23
157	EXY1	DLN	1.26	0.274	3.43	0.003	0.365	89	0.427	154	0.508	157	3.37	4.16	3.16 5.21
158	TB1	D	1.02	0.413	3.57	0.002	0.362	102	0.429	133	0.509	143	3.36	4.15	3.13 5.36
Misc.: Government and other															
159	FBD	DLN	1.52	0.173	2.26	0.039	0.430	4	0.467	29	0.528	32	3.57	3.92	2.97 6.26
160	FBDY	DLN	1.38	0.226	2.15	0.049	0.428	5	0.464	32	0.523	49	3.61	3.88	3.06 6.22
161	FBYS	N	0.94	0.469	2.09	0.056	0.425	6	0.478	16	0.544	14	3.79	3.76	3.29 5.41
162	FAIL	DLN	1.77	0.105	3.59	0.002	0.371	59	0.428	149	0.512	106	3.37	4.15	3.17 5.19
163	INC	DLN	0.92	0.484	2.97	0.008	0.361	116	0.444	70	0.510	137	3.26	4.20	3.04 5.33

Notes: All statistics refer to regression equations that include six lags each of five series: the growth of IP, the growth of real M2 (FM2D82), the growth of wholesale prices (PW), the change in the 90-day Treasury bill rate (FYGM3), and the indicated trial variable, transformed as indicated. The first two columns report the F-statistic and p-value testing whether the lags of the trial variable enter the regression, and the next two columns report these statistics for M2. The remaining 10 columns are identical to the final 10 columns in Table 2, except that the conditioning variables for the k-month ahead regressions are 6 lags each of transformed FM2D82, PW, and FYGM3, in addition to 6 lags each of transformed ICI and the transformed trial series.

Table 5

Marginal Predictive Content for 1-month ICI growth, given the lagged private-public interest rate spread CP6_GM6 and given the lagged yield curve spread G10_G1

Series		Trans.	F_x	p_x	F_{cpgm}	p_{cpgm}	Fg10g1	p_{g10g1}	$R^2(1)$	rank	$R^2(6)$	rank	$R^2(12)$	rank	Subsample Stability: RMSE's - 88:12 -79:9	79:10-	- 79:9 -79:9	79:10-
Base Model			0.00	0.000	6.31	0.000	1.13	0.346	0.379		0.565		0.522		2.87	3.74	2.79	4.08
Output and Capacity Utilization																		
3	IPC	DLN	2.29	0.035	6.25	0.000	1.26	0.277	0.404	32	0.567	148	0.559	24	2.88	3.71	2.77	4.18
4	IPCN	DLN	1.98	0.068	5.93	0.000	1.14	0.340	0.400	47	0.571	95	0.548	44	2.86	3.69	2.78	4.05
5	IPCD	DLN	1.67	0.129	6.26	0.000	1.28	0.264	0.397	63	0.568	135	0.539	63	2.86	3.73	2.75	4.19
6	IPD	DLN	2.09	0.054	5.84	0.000	1.25	0.282	0.401	43	0.569	116	0.527	118	2.83	3.76	2.73	4.18
7	IPN	DLN	2.78	0.012	5.45	0.000	1.12	0.348	0.409	25	0.594	23	0.537	74	2.83	3.50	2.73	3.96
8	IPMIN	DLN	1.11	0.354	5.99	0.000	1.02	0.410	0.391	93	0.568	120	0.530	94	2.86	3.72	2.77	4.12
9	IPUT	DLN	1.82	0.094	5.93	0.000	1.01	0.419	0.399	49	0.570	107	0.543	55	2.86	3.70	2.78	4.09
10	IPE	DLN	1.94	0.074	6.58	0.000	1.41	0.209	0.400	48	0.591	32	0.533	85	2.82	3.55	2.74	3.91
11	IPMFG	DLN	0.85	0.531	6.30	0.000	1.25	0.283	0.388	115	0.575	75	0.545	51	2.93	3.52	2.78	4.23
12	IPM	DLN	2.79	0.012	5.89	0.000	1.27	0.268	0.409	26	0.568	132	0.526	123	2.86	3.72	2.76	4.16
13	IPI	DLN	1.06	0.386	5.72	0.000	0.62	0.718	0.390	99	0.583	43	0.551	39	2.81	3.66	2.71	4.10
14	IPF	DLN	1.51	0.175	5.91	0.000	1.13	0.342	0.395	71	0.571	96	0.543	57	2.88	3.65	2.78	4.14
15	IPX	D	0.82	0.558	4.63	0.000	1.60	0.147	0.441	10	0.645	6	0.639	2	2.48	3.55	2.15	4.34
16	IPXDCA	D	1.15	0.333	4.68	0.000	1.87	0.087	0.446	7	0.645	7	0.624	6	2.40	3.63	2.10	4.29
17	IPXMCA	D	0.51	0.803	6.11	0.000	1.15	0.333	0.384	145	0.566	159	0.523	153	2.88	3.71	2.76	4.27
Consumption, Sales and Income																		
18	GMC82	DLN	0.39	0.887	5.50	0.000	0.98	0.440	0.383	154	0.571	97	0.554	34	2.81	3.78	2.70	4.26
19	GMCD82	DLN	0.49	0.817	6.25	0.000	1.18	0.319	0.384	143	0.567	143	0.526	126	2.87	3.72	2.78	4.10
20	GMPY	DLN	0.67	0.671	6.00	0.000	1.04	0.401	0.386	133	0.566	149	0.531	92	2.86	3.74	2.79	4.08
21	GMPY82	DLN	0.67	0.675	6.35	0.000	1.06	0.385	0.386	135	0.566	150	0.543	56	2.84	3.77	2.72	4.30
22	GMYXP8	DLN	0.49	0.818	6.38	0.000	1.05	0.391	0.384	146	0.567	140	0.538	68	2.89	3.68	2.74	4.37
23	GMWS82	DLN	0.45	0.846	5.90	0.000	1.05	0.393	0.384	148	0.568	133	0.535	78	2.84	3.75	2.73	4.26
24	MT82	DLN	1.04	0.398	6.27	0.000	1.18	0.314	0.390	97	0.569	113	0.523	155	2.84	3.74	2.74	4.21
25	MSM8	DLN	0.98	0.442	4.81	0.000	1.73	0.114	0.444	9	0.650	3	0.614	10	2.43	3.56	2.17	4.24
26	WT8	DLN	0.28	0.948	4.34	0.000	1.61	0.144	0.434	13	0.643	10	0.633	3	2.37	3.67	2.10	4.32
27	RT8	DLN	1.27	0.274	4.50	0.000	1.80	0.101	0.448	6	0.642	11	0.628	4	2.41	3.64	2.15	4.25
28	RTR82	DLN	1.28	0.264	6.05	0.000	1.16	0.327	0.393	81	0.570	108	0.531	91	2.85	3.72	2.77	4.08

Table 5, continued

29	RCARD	DLN	2.45	0.025	6.71	0.000	1.58	0.151	0.405	30	0.569	119	0.529	106	2.85	3.74	2.75 4.15
30	RCARTA	DLN	3.11	0.006	6.74	0.000	1.69	0.123	0.412	20	0.572	85	0.528	110	2.83	3.74	2.74 4.14
Inventories, Orders, and Performance																	
31	MPCON8	DLN	1.50	0.176	5.56	0.000	0.69	0.659	0.395	69	0.571	98	0.525	134	2.86	3.70	2.78 4.06
32	MSOND8	DLN	2.29	0.035	5.56	0.000	0.73	0.627	0.404	33	0.577	65	0.527	115	2.83	3.69	2.75 4.04
33	MOCM82	DLN	1.13	0.345	5.83	0.000	0.69	0.661	0.391	90	0.570	100	0.533	81	2.84	3.73	2.76 4.10
34	MO82	DLN	2.21	0.042	5.61	0.000	0.71	0.640	0.403	35	0.577	68	0.530	100	2.80	3.73	2.72 4.12
35	MDO82	DLN	2.09	0.055	5.92	0.000	0.67	0.672	0.401	41	0.572	87	0.528	107	2.84	3.71	2.76 4.07
36	MNO82	DLN	0.32	0.926	5.91	0.000	1.07	0.380	0.382	159	0.573	83	0.524	142	2.81	3.76	2.70 4.28
37	MU82	DLN	3.44	0.003	5.34	0.000	1.03	0.408	0.415	15	0.602	16	0.546	47	2.64	3.76	2.52 4.27
38	MDU82	DLN	3.27	0.004	5.50	0.000	1.13	0.344	0.414	17	0.604	15	0.544	52	2.66	3.70	2.58 4.09
39	MNU82	DLN	2.86	0.010	4.17	0.000	1.00	0.426	0.410	24	0.605	14	0.531	90	2.58	3.82	2.43 4.38
40	IVMT82	DLN	1.14	0.340	5.90	0.000	0.71	0.639	0.391	91	0.574	80	0.532	86	2.84	3.71	2.73 4.18
41	IVM1D8	N	1.84	0.091	6.50	0.000	1.05	0.395	0.399	51	0.567	139	0.526	121	2.86	3.74	2.77 4.16
42	IVM2D8	N	2.03	0.062	5.63	0.000	1.61	0.144	0.401	44	0.575	77	0.526	122	2.84	3.69	2.76 4.03
43	IVM3D8	N	1.38	0.222	6.35	0.000	0.71	0.642	0.394	73	0.582	45	0.524	143	2.79	3.70	2.65 4.37
44	IVT82	N	1.11	0.355	5.63	0.000	1.02	0.410	0.391	89	0.577	69	0.529	104	2.80	3.74	2.69 4.24
45	VENDOR	N	5.71	0.000	6.59	0.000	1.15	0.331	0.437	11	0.594	22	0.545	49	2.78	3.59	2.70 3.95
Housing and Construction																	
46	HSBP	N	2.98	0.008	6.23	0.000	0.59	0.738	0.411	23	0.593	26	0.554	33	2.77	3.63	2.68 3.98
47	HSFR	N	0.73	0.625	6.18	0.000	0.79	0.580	0.387	120	0.587	39	0.538	71	2.82	3.60	2.74 3.96
48	CONDO9	DLN	0.60	0.729	5.17	0.000	1.04	0.396	0.385	139	0.568	130	0.525	138	2.87	3.70	2.78 4.14
Money and Credit: Quantity Variables																	
49	FMBASE	DLN	0.41	0.872	6.39	0.000	0.89	0.506	0.383	155	0.573	81	0.523	154	2.83	3.73	2.72 4.19
50	FMBASER	DLN	0.81	0.561	5.92	0.000	0.77	0.594	0.388	112	0.579	60	0.567	19	2.76	3.79	2.53 4.92
51	FM1	DLN	0.76	0.602	6.21	0.000	1.07	0.382	0.387	118	0.566	151	0.528	111	2.86	3.75	2.67 4.89
52	FM1D82	DLN	0.78	0.587	5.75	0.000	0.86	0.523	0.387	119	0.569	112	0.525	132	2.83	3.77	2.49 5.94
53	FM2	DLN	0.64	0.701	5.52	0.000	0.95	0.462	0.386	130	0.576	71	0.534	80	2.80	3.75	2.67 4.46
54	FM2D82	DLN	1.03	0.405	4.80	0.000	0.83	0.548	0.390	101	0.581	50	0.578	16	2.75	3.78	2.59 4.54
55	FM3	DLN	0.63	0.709	6.15	0.000	1.27	0.270	0.386	134	0.582	46	0.530	97	2.77	3.74	2.63 4.44
56	FM3R	DLN	1.16	0.330	5.48	0.000	1.04	0.402	0.391	88	0.580	51	0.561	20	2.74	3.81	2.54 4.62
57	FML	DLN	0.97	0.444	6.14	0.000	1.28	0.266	0.389	105	0.576	74	0.527	114	2.83	3.68	2.71 4.24
58	FMLR	DLN	0.46	0.840	5.09	0.000	1.04	0.401	0.384	150	0.572	84	0.535	79	2.81	3.76	2.55 4.90
59	FCLN82	DLN	3.32	0.004	6.95	0.000	0.90	0.498	0.414	19	0.590	34	0.539	62	2.96	3.28	2.77 4.39
60	FCBCUC	N	1.09	0.370	6.59	0.000	0.97	0.447	0.391	94	0.582	49	0.556	30	2.88	3.54	2.76 4.05
61	FCBCUCY	N	0.76	0.604	6.25	0.000	1.02	0.409	0.387	123	0.579	56	0.540	61	2.88	3.57	2.77 4.04
62	FCLBMCY	N	2.11	0.051	5.94	0.000	1.17	0.322	0.402	39	0.592	29	0.570	18	2.95	3.31	2.78 4.16
63	CCBPY	DLN	0.72	0.635	6.44	0.000	1.14	0.341	0.387	125	0.592	27	0.545	48	2.85	3.49	2.74 3.96

Table 5, continued

64	CCI30M	DLN	1.09	0.371	6.33	0.000	1.18	0.316	0.391	96	0.569	114	0.561	23	2.86 3.71	2.78 4.05
Stock Prices and Volume																
65	FSPCOM	DLN	1.63	0.139	5.09	0.000	0.76	0.603	0.397	65	0.597	19	0.549	40	2.77 3.58	2.63 4.24
66	FSPIN	DLN	1.66	0.131	5.12	0.000	0.75	0.613	0.397	64	0.601	17	0.553	35	2.76 3.55	2.62 4.23
67	FSDJ	DLN	1.44	0.200	5.28	0.000	0.87	0.519	0.394	77	0.591	30	0.538	66	2.78 3.63	2.64 4.32
68	FSVOL	DLN	0.45	0.845	6.17	0.000	1.23	0.290	0.384	147	0.567	147	0.529	101	2.87 3.72	2.78 4.13
Interest Rates and Spreads																
69	FYFF	D	1.46	0.192	6.43	0.000	1.25	0.278	0.395	68	0.568	131	0.523	151	2.87 3.71	2.78 4.26
70	FYGM3	D	1.42	0.206	6.54	0.000	1.19	0.309	0.394	80	0.572	88	0.525	136	2.86 3.69	2.77 4.25
71	FYGM6	D	1.05	0.391	6.58	0.000	0.91	0.487	0.390	98	0.570	99	0.525	137	2.85 3.71	2.78 4.09
72	FYGT1	D	0.78	0.588	6.55	0.000	0.84	0.541	0.387	126	0.569	115	0.524	149	2.85 3.72	2.78 4.07
73	FYGT10	D	0.64	0.700	6.46	0.000	1.05	0.393	0.386	131	0.568	129	0.524	150	2.86 3.72	2.79 4.08
74	FYGL	D	0.91	0.488	6.46	0.000	1.20	0.304	0.389	108	0.566	152	0.525	133	2.87 3.72	2.78 4.31
75	FYCP	D	0.95	0.462	6.41	0.000	0.85	0.529	0.389	103	0.567	144	0.525	135	2.86 3.73	2.79 4.12
76	FYBAC	D	1.23	0.290	6.57	0.000	1.39	0.218	0.392	86	0.568	127	0.524	148	2.87 3.71	2.79 4.18
77	FYAAAC	D	1.77	0.105	6.68	0.000	1.17	0.320	0.398	60	0.568	125	0.524	146	2.86 3.72	2.79 4.11
78	FYBAAC	D	0.64	0.702	6.03	0.000	0.76	0.602	0.386	132	0.568	124	0.524	145	2.87 3.71	2.78 4.17
79	GL_GM3	N	1.56	0.158	6.48	0.000	1.58	0.154	0.396	66	0.576	72	0.527	119	2.83 3.69	2.73 4.25
81	G10_GM3	N	1.79	0.100	6.48	0.000	2.05	0.059	0.398	59	0.588	36	0.538	70	2.75 3.70	2.66 4.19
82	G1_GM6	N	1.83	0.093	6.21	0.000	1.76	0.106	0.399	50	0.595	20	0.554	32	2.78 3.59	2.72 3.91
83	G1_GM3	N	1.79	0.100	6.48	0.000	1.81	0.097	0.398	57	0.588	37	0.538	67	2.75 3.70	2.66 4.19
84	GM6_GM3	N	0.86	0.527	6.54	0.000	1.26	0.276	0.388	113	0.567	138	0.530	93	2.87 3.72	2.61 5.24
85	GM3_FF	N	0.79	0.580	2.64	0.016	0.88	0.509	0.387	124	0.585	42	0.597	13	2.81 3.64	2.73 4.12
87	BAC_GM3	N	0.73	0.624	1.31	0.253	1.12	0.351	0.387	121	0.573	82	0.530	96	2.82 3.75	2.73 4.18
88	BAA_G10	N	2.01	0.064	3.95	0.001	1.10	0.363	0.401	42	0.578	62	0.526	131	2.83 3.68	2.77 3.95
89	BAA_AAA	N	3.74	0.001	4.50	0.000	1.12	0.348	0.418	14	0.582	47	0.538	69	2.79 3.71	2.71 4.09
90	AAA_GL	N	1.49	0.183	5.25	0.000	1.05	0.395	0.395	70	0.568	122	0.528	113	2.87 3.70	2.78 4.09
91	FF_CP6	N	0.63	0.708	5.53	0.000	0.97	0.447	0.386	129	0.580	52	0.593	14	2.86 3.61	2.78 4.07
92	FF_BAC	N	0.43	0.862	5.29	0.000	0.96	0.453	0.383	153	0.583	44	0.613	11	2.85 3.58	2.77 3.98
93	FF_G10	N	0.88	0.510	4.17	0.000	1.28	0.268	0.388	110	0.566	153	0.557	29	2.87 3.72	2.78 4.22
94	FYFFR	D	1.41	0.210	6.07	0.000	0.83	0.548	0.394	74	0.566	154	0.524	144	2.86 3.74	2.77 4.29
95	FYGM3R	D	1.22	0.294	6.37	0.000	0.40	0.881	0.392	85	0.570	109	0.528	108	2.86 3.70	2.74 4.42
96	FYGM6R	D	1.58	0.154	6.47	0.000	0.49	0.819	0.396	67	0.569	111	0.527	120	2.86 3.71	2.75 4.37
97	FYGT1R	D	1.73	0.114	6.25	0.000	0.66	0.685	0.398	58	0.568	121	0.527	116	2.86 3.73	2.75 4.30
98	FYGT10R	D	1.77	0.104	6.30	0.000	0.86	0.527	0.398	61	0.567	137	0.526	128	2.87 3.72	2.76 4.28
Aggregate Employment and Labor Force Participation																
99	LPMHUADJ	DLN	0.56	0.760	6.13	0.000	1.08	0.373	0.385	142	0.578	64	0.557	28	2.86 3.62	2.76 4.02
100	LHOURS	DLN	0.56	0.765	6.17	0.000	1.17	0.321	0.385	141	0.585	41	0.530	95	2.83 3.61	2.74 3.97

Table 5, continued

101	LHEM	DLN	0.36	0.902	6.17	0.000	1.12	0.351	0.383	156	0.571	94	0.529	103	2.84	3.72	2.75	4.11
102	LHTNAG	DLN	2.49	0.023	5.99	0.000	1.16	0.326	0.406	27	0.574	78	0.529	102	2.82	3.73	2.73	4.11
103	LHCH	D	0.81	0.562	5.94	0.000	1.22	0.293	0.388	111	0.580	53	0.524	147	2.84	3.63	2.77	3.96
104	LHNAGP	DLN	2.51	0.022	5.34	0.000	0.67	0.675	0.406	28	0.578	63	0.523	156	2.80	3.73	2.72	4.07
105	LHNAPS	DLN	3.33	0.003	4.87	0.000	0.54	0.775	0.414	18	0.590	35	0.523	157	2.77	3.67	2.68	4.01
106	LHNPVX	D	1.29	0.262	5.13	0.000	0.92	0.484	0.393	82	0.570	101	0.523	158	2.84	3.74	2.76	4.08
107	LHUL	DLN	3.07	0.007	4.48	0.000	1.27	0.270	0.472	2	0.645	8	0.610	12	2.38	3.65	2.14	4.21
108	LHULLHEM	N	3.91	0.001	5.09	0.000	1.32	0.247	0.482	1	0.650	2	0.624	7	2.40	3.60	2.09	4.31
109	LHMUR	N	1.73	0.114	6.10	0.000	1.04	0.396	0.398	55	0.579	55	0.552	37	2.81	3.69	2.69	4.33
110	LPHRM	N	1.77	0.105	6.22	0.000	0.95	0.457	0.398	54	0.570	103	0.537	72	2.86	3.71	2.74	4.35
111	LPHRD	N	1.83	0.093	5.63	0.000	1.04	0.402	0.399	52	0.568	128	0.539	64	2.87	3.72	2.74	4.43
112	LPMOSA	N	1.42	0.205	6.63	0.000	1.06	0.386	0.394	76	0.579	58	0.547	45	2.81	3.69	2.71	4.16
113	LHU5	DLN	2.19	0.044	6.26	0.000	1.23	0.289	0.402	38	0.571	93	0.528	112	2.87	3.68	2.78	4.07
114	LHU680	N	0.56	0.759	6.22	0.000	1.32	0.247	0.385	138	0.613	13	0.583	15	2.80	3.36	2.68	3.90
115	LHEL	DLN	6.59	0.000	2.01	0.065	0.87	0.515	0.446	8	0.631	12	0.540	60	2.56	3.58	2.48	3.88
116	LHELX	N	1.39	0.217	4.03	0.001	1.28	0.264	0.394	79	0.582	48	0.526	129	2.77	3.74	2.67	4.21
117	LUINC	DLN	1.31	0.250	5.55	0.000	0.80	0.573	0.393	84	0.593	25	0.542	59	2.79	3.58	2.67	4.12
Employment by Sector																		
118	LPNAG	DLN	1.30	0.259	6.04	0.000	1.19	0.310	0.393	83	0.571	92	0.553	36	2.86	3.69	2.76	4.11
119	LPMI	DLN	3.06	0.006	5.78	0.000	1.37	0.227	0.412	21	0.572	90	0.549	42	2.86	3.68	2.76	4.10
120	LPCC	DLN	0.49	0.817	6.05	0.000	1.20	0.305	0.384	151	0.568	126	0.529	105	2.87	3.70	2.78	4.11
121	LPEM	DLN	3.03	0.007	4.97	0.000	1.65	0.132	0.411	22	0.577	70	0.559	25	2.83	3.68	2.72	4.18
122	LPED	DLN	2.18	0.045	6.19	0.000	1.18	0.318	0.402	40	0.575	76	0.559	26	2.84	3.69	2.74	4.13
123	LPEN	DLN	3.41	0.003	3.95	0.001	1.48	0.184	0.415	16	0.591	31	0.535	76	2.79	3.61	2.70	4.03
124	LPTW	DLN	1.75	0.110	6.30	0.000	1.25	0.280	0.398	53	0.577	67	0.552	38	2.84	3.67	2.75	4.06
125	LPTR	DLN	0.68	0.664	6.02	0.000	1.18	0.317	0.386	128	0.578	61	0.526	127	2.87	3.60	2.75	4.09
126	LPFR	DLN	0.58	0.745	6.09	0.000	1.08	0.374	0.385	137	0.570	110	0.543	58	2.84	3.74	2.75	4.15
127	LPSPA	DLN	0.36	0.905	6.20	0.000	1.11	0.355	0.383	152	0.567	136	0.528	109	2.85	3.75	2.75	4.20
128	LPGOV	DLN	0.34	0.916	5.99	0.000	1.20	0.308	0.382	158	0.587	38	0.561	21	2.80	3.63	2.70	4.10
129	LPSPNGA	DLN	0.46	0.840	6.33	0.000	1.09	0.366	0.384	149	0.576	73	0.561	22	2.86	3.65	2.75	4.13
Productivity and Real Wages																		
130	IPROD1	DLN	1.08	0.372	6.27	0.000	1.25	0.280	0.391	92	0.579	57	0.558	27	2.90	3.53	2.79	4.07
131	PLM	DLN	0.86	0.522	6.31	0.000	0.99	0.429	0.388	117	0.586	40	0.573	17	2.81	3.63	2.71	4.07
132	PLM82	DLN	1.75	0.109	6.74	0.000	0.94	0.468	0.398	56	0.595	21	0.545	50	2.90	3.36	2.77	4.00
133	LEHM	DLN	0.98	0.437	5.42	0.000	1.17	0.323	0.390	100	0.570	106	0.527	117	2.83	3.76	2.73	4.24
134	LEHM82	DLN	1.44	0.198	6.39	0.000	1.34	0.238	0.395	72	0.568	123	0.535	77	2.87	3.71	2.78	4.12
135	RPWGMS	N	2.02	0.063	7.10	0.000	0.96	0.452	0.401	45	0.570	104	0.537	73	2.85	3.73	2.67	4.50
136	RPWGMDS	N	2.40	0.028	6.29	0.000	1.12	0.350	0.405	29	0.567	145	0.548	43	2.87	3.72	2.72	4.37

Table 5, continued

Prices																
137	PUNEW	DLN	1.16	0.329	5.70	0.000	0.86	0.522	0.391	95	0.569	118	0.549	41	2.85 3.73	2.76 4.19
138	PZUNEW	DLN	0.88	0.511	5.82	0.000	0.95	0.456	0.388	114	0.570	102	0.544	53	2.86 3.71	2.76 4.20
139	PW	DLN	1.38	0.224	6.29	0.000	1.13	0.345	0.394	75	0.569	117	0.530	98	2.87 3.69	2.75 4.28
140	PW1200	DLN	2.46	0.024	6.70	0.000	1.68	0.126	0.405	31	0.593	24	0.525	139	2.81 3.56	2.73 3.93
141	PW1300	DLN	0.91	0.485	5.82	0.000	1.02	0.412	0.389	107	0.566	155	0.526	125	2.86 3.74	2.75 4.29
142	PWCMP	DLN	1.66	0.131	6.40	0.000	1.11	0.359	0.397	62	0.590	33	0.526	124	2.86 3.50	2.76 3.95
143	PWFC	DLN	0.91	0.486	6.20	0.000	1.12	0.349	0.389	106	0.566	156	0.530	99	2.87 3.72	2.76 4.24
144	PWFP	DLN	0.61	0.724	5.06	0.000	1.13	0.346	0.385	140	0.574	79	0.533	83	2.83 3.72	2.74 4.13
145	PWFUEL	DLN	1.05	0.390	6.74	0.000	1.28	0.266	0.390	102	0.572	86	0.533	82	2.87 3.66	2.70 4.86
146	PWIC	DLN	0.62	0.711	6.01	0.000	1.22	0.298	0.386	127	0.567	141	0.547	46	2.86 3.74	2.72 4.42
147	PWIMS	DLN	0.91	0.486	5.80	0.000	1.16	0.326	0.389	109	0.566	157	0.544	54	2.85 3.76	2.70 4.46
148	PWIMSM	DLN	2.02	0.062	5.29	0.000	1.12	0.352	0.401	46	0.568	134	0.554	31	2.84 3.76	2.71 4.32
149	PSMC99A	DLN	2.19	0.044	5.77	0.000	1.30	0.257	0.403	36	0.597	18	0.539	65	2.83 3.48	2.72 4.03
150	PSCCOM	DLN	2.24	0.039	6.89	0.000	0.98	0.435	0.403	34	0.592	28	0.523	152	2.85 3.49	2.76 3.93
Exchange Rates and Foreign Trade																
151	EXRWT1	DLN	0.91	0.485	6.45	0.000	0.82	0.553	0.389	104	0.577	66	0.532	88	2.81 3.72	2.70 4.28
152	EXRWT2	DLN	0.44	0.850	6.23	0.000	0.89	0.504	0.384	144	0.570	105	0.533	84	2.85 3.72	2.78 4.06
153	EXNWT1	DLN	0.61	0.721	6.42	0.000	0.82	0.554	0.385	136	0.579	59	0.532	89	2.81 3.70	2.71 4.16
154	EXNWT2	DLN	0.27	0.950	6.24	0.000	0.90	0.495	0.382	157	0.571	91	0.532	87	2.85 3.71	2.77 4.09
155	EXVUS	DLN	0.34	0.913	4.72	0.000	1.45	0.197	0.435	12	0.644	9	0.626	5	2.37 3.66	2.10 4.30
156	IMY1	DLN	1.36	0.229	6.01	0.000	1.07	0.377	0.394	78	0.567	142	0.526	130	2.87 3.72	2.78 4.11
157	EXY1	DLN	1.22	0.295	5.82	0.000	1.09	0.371	0.392	87	0.567	146	0.524	141	2.86 3.74	2.77 4.12
158	TB1	D	0.85	0.536	6.15	0.000	1.17	0.324	0.388	116	0.566	158	0.524	140	2.86 3.73	2.78 4.14
Misc.: Government and other																
159	FBD	DLN	0.99	0.433	4.31	0.000	1.58	0.153	0.458	4	0.648	5	0.616	9	2.42 3.65	2.18 4.20
160	FBDY	DLN	0.84	0.542	4.24	0.000	1.35	0.235	0.456	5	0.648	4	0.617	8	2.44 3.64	2.20 4.19
161	FBYS	N	1.02	0.415	4.00	0.001	1.50	0.179	0.461	3	0.679	1	0.677	1	2.57 3.35	2.20 4.15
162	FAIL	DLN	2.18	0.045	6.34	0.000	0.88	0.511	0.402	37	0.580	54	0.536	75	2.81 3.70	2.73 4.03
163	INC	DLN	0.74	0.617	5.81	0.000	1.06	0.386	0.387	122	0.572	89	0.522	159	2.84 3.72	2.76 4.07

Notes: All statistics refer to systems that include 6 lags each of four series: the growth of IP, CP6_GM6, G10_G1, and the indicated trial variable. The first six columns report the F-statistic and p-value respectively testing whether the lags of (1) the trial variable (2) CP6_GM6, and (3) G10_G1 enter the regression. The remaining 10 columns are identical to the final 10 columns in Table 2, except that the conditioning variables for the k-month ahead regressions are 6 lags each of CP6_GM6 and G10_G1, in addition to 6 lags each of transformed ICI and the transformed trial series.

Table 6

Bivariate Predictive Content for the Index of Industrial Production (IP): 1948-1988

Series		Trans.	F_6	p_6	F_{12}	p_{12}	$R^2(1)$	rank	$R^2(6)$	rank	$R^2(12)$	rank	Subsample Stability: RMSE's - 88:12 -79:9	79:10-	- 79:9 -79:9	79:10-
Base Model			0.00	0.000	0.00	0.000	0.202	-	0.085	-	0.074	-	8.72	6.58	8.71	6.68
Output and Capacity Utilization																
3	IPC	DLN	2.55	0.019	2.98	0.001	0.239	21	0.145	43	0.207	27	8.46	6.22	8.44	6.37
4	IPCN	DLN	2.79	0.011	2.59	0.002	0.239	22	0.131	53	0.170	40	8.50	6.43	8.48	6.54
5	IPCD	DLN	1.98	0.067	2.50	0.004	0.226	44	0.114	65	0.143	53	8.59	6.42	8.58	6.56
6	IPD	DLN	7.06	0.000	4.54	0.000	0.269	1	0.136	49	0.129	56	8.37	6.85	8.36	6.96
7	IPN	DLN	4.70	0.000	3.33	0.000	0.261	3	0.218	11	0.202	29	8.04	6.17	8.03	6.27
8	IPMIN	DLN	4.38	0.000	4.03	0.000	0.248	14	0.131	54	0.160	44	8.54	6.17	8.53	6.33
9	IPUT	DLN	0.75	0.614	0.94	0.509	0.212	77	0.087	83	0.082	80	8.71	6.56	8.69	6.76
10	IPE	DLN	0.39	0.883	1.08	0.376	0.207	81	0.123	59	0.132	55	8.51	6.56	8.49	6.73
11	IPMFG	DLN	3.53	0.002	3.17	0.000	0.242	18	0.125	57	0.118	60	8.58	6.18	8.55	6.45
12	IPM	DLN	3.46	0.002	3.24	0.000	0.236	25	0.137	48	0.148	49	8.45	6.47	8.44	6.59
13	IPI	DLN	5.91	0.000	3.33	0.000	0.267	2	0.204	20	0.186	35	8.05	6.51	8.02	6.81
14	IPF	DLN	2.61	0.017	2.15	0.013	0.230	37	0.102	74	0.099	71	8.63	6.55	8.62	6.66
17	IPXMCA	D	3.71	0.001	3.24	0.000	0.241	19	0.118	61	0.105	65	8.56	6.46	8.52	6.97
Consumption, Sales and Income																
20	GMPY	DLN	1.15	0.332	1.27	0.231	0.213	71	0.120	60	0.169	41	8.59	6.28	8.57	6.48
21	GMPY82	DLN	2.72	0.013	1.62	0.084	0.220	56	0.116	63	0.097	72	8.49	6.82	8.47	7.00
24	MT82	DLN	0.85	0.532	0.82	0.630	0.210	79	0.117	62	0.091	75	8.53	6.63	8.51	6.80
28	RTR82	DLN	2.06	0.057	1.55	0.102	0.229	40	0.134	50	0.160	45	8.47	6.42	8.46	6.56
Inventories, Orders, and Performance																
31	MPCON8	DLN	2.85	0.010	2.87	0.001	0.235	28	0.165	34	0.125	47	8.22	6.76	8.20	6.98
32	MSOND8	DLN	4.86	0.000	3.74	0.000	0.259	4	0.204	19	0.150	48	8.01	6.68	7.99	6.88
33	MOCM82	DLN	3.85	0.001	3.78	0.000	0.247	15	0.207	18	0.180	38	8.00	6.62	7.99	6.79
35	MDO82	DLN	3.77	0.001	3.49	0.000	0.249	12	0.226	9	0.185	36	7.88	6.64	7.86	6.86
44	IVT82	N	1.67	0.126	1.21	0.273	0.219	61	0.187	27	0.165	42	8.10	6.71	8.06	7.18

Table 6, continued

Housing and Construction															
46	HSBP	N	4.22	0.000	3.31	0.000	0.251	11	0.313	1	0.336	1	7.58	5.58	7.56 5.86
47	HSFR	N	3.05	0.006	2.08	0.017	0.240	20	0.268	3	0.277	4	7.84	5.67	7.82 5.90
48	CONDO9	DLN	3.13	0.005	2.72	0.002	0.235	27	0.130	55	0.103	67	8.47	6.59	8.46 6.69
Money and Credit: Quantity Variables															
49	FMBASE	DLN	1.57	0.155	1.13	0.334	0.222	51	0.088	82	0.078	83	8.72	6.49	8.70 6.65
52	FM1D82	DLN	2.94	0.008	1.62	0.082	0.237	24	0.211	14	0.225	15	7.86	7.10	7.39 12.05
59	FCLN82	DLN	1.71	0.117	1.68	0.068	0.222	50	0.171	32	0.201	30	8.38	5.88	8.35 6.24
60	FCBCUC	N	2.14	0.048	2.04	0.019	0.233	31	0.214	13	0.218	16	7.95	6.66	7.89 7.22
63	CCBPY	DLN	1.83	0.093	1.06	0.396	0.216	66	0.093	79	0.094	73	8.66	6.63	8.65 6.77
64	CCI30M	DLN	1.40	0.215	1.04	0.413	0.214	69	0.096	76	0.108	64	8.62	6.74	8.58 7.20
Stock Prices and Volume															
65	FSPCOM	DLN	4.52	0.000	2.60	0.002	0.254	5	0.252	4	0.216	18	7.80	6.29	7.75 6.83
66	FSPIN	DLN	4.50	0.000	2.60	0.002	0.254	7	0.245	6	0.210	24	7.85	6.29	7.80 6.82
67	FSDJ	DLN	4.27	0.000	2.34	0.007	0.252	9	0.234	7	0.190	34	7.94	6.22	7.88 6.78
68	FSVOL	DLN	1.15	0.335	1.46	0.138	0.213	74	0.115	64	0.113	62	8.54	6.64	8.52 6.81
Interest Rates and Spreads															
70	FYGM3	D	1.06	0.384	1.05	0.403	0.213	72	0.109	67	0.117	61	8.66	6.21	8.56 8.45
74	FYGL	D	1.69	0.121	1.24	0.254	0.219	58	0.131	52	0.154	46	8.56	6.07	8.40 10.20
75	FYCP	D	1.83	0.091	1.48	0.128	0.222	52	0.156	39	0.147	50	8.43	6.05	8.29 8.56
76	FYBAC	D	1.50	0.176	1.43	0.148	0.218	62	0.143	45	0.137	54	8.49	6.15	8.34 8.86
77	FYAAAC	D	2.75	0.013	1.67	0.071	0.230	39	0.157	38	0.184	37	8.44	5.93	8.24 10.50
78	FYBAAC	D	3.07	0.006	1.69	0.066	0.233	32	0.191	26	0.215	20	8.24	5.97	7.95 11.21
79	GL_GM3	N	2.21	0.041	1.30	0.217	0.224	46	0.194	25	0.284	3	8.15	6.30	7.95 9.04
87	BAC_GM3	N	3.65	0.002	3.41	0.000	0.231	35	0.221	10	0.201	31	8.06	6.00	8.04 6.25
89	BAA_AAA	N	5.83	0.000	3.21	0.000	0.254	6	0.144	44	0.120	59	8.36	6.69	8.24 8.52
90	AAA_GL	N	2.48	0.023	1.37	0.176	0.223	49	0.129	56	0.103	68	8.52	6.35	8.51 6.49
Aggregate Employment and Labor Force Participation															
100	LHOURS	DLN	0.64	0.703	2.32	0.007	0.211	78	0.094	78	0.086	78	8.67	6.56	8.66 6.68
101	LHEM	DLN	1.27	0.271	3.44	0.000	0.222	54	0.106	70	0.105	66	8.63	6.43	8.62 6.57
102	LHTNAG	DLN	3.02	0.007	4.14	0.000	0.232	34	0.107	69	0.089	77	8.60	6.57	8.59 6.71
103	LHCH	D	0.34	0.916	1.07	0.385	0.205	84	0.086	84	0.075	84	8.71	6.57	8.70 6.70
109	LHMUR	N	1.14	0.338	1.97	0.025	0.220	57	0.159	37	0.170	39	8.25	6.79	7.98 10.30
110	LPHRM	N	1.81	0.096	2.21	0.011	0.227	43	0.171	33	0.213	21	8.18	6.78	8.13 7.29
111	LPHRD	N	1.77	0.104	1.81	0.044	0.224	48	0.162	36	0.204	28	8.26	6.67	8.22 7.06
113	LHU5	DLN	1.46	0.190	1.21	0.276	0.213	73	0.103	73	0.080	82	8.62	6.57	8.60 6.78
114	LHU680	N	1.50	0.176	1.39	0.165	0.221	55	0.196	22	0.210	23	8.14	6.31	8.02 7.88
116	LHELX	N	4.06	0.001	2.68	0.002	0.248	13	0.230	8	0.266	7	7.82	6.82	7.74 7.58

Table 6, continued

117	LUINC	DLN	3.49	0.002	2.51	0.003	0.243	17	0.203	21	0.153	47	8.01	6.70	7.94 7.40
Employment by Sector															
118	LPNAG	DLN	1.12	0.349	1.96	0.026	0.216	64	0.151	42	0.210	25	8.37	6.46	8.36 6.58
119	LPMI	DLN	4.14	0.001	3.56	0.000	0.253	8	0.196	23	0.218	17	8.23	5.88	8.21 6.09
120	LPCC	DLN	1.89	0.082	2.59	0.002	0.216	67	0.096	77	0.090	76	8.65	6.60	8.64 6.71
121	LPEM	DLN	0.26	0.957	1.00	0.450	0.206	83	0.152	40	0.215	19	8.41	6.24	8.39 6.46
122	LPED	DLN	1.00	0.423	1.42	0.153	0.214	70	0.183	28	0.262	8	8.27	6.06	8.25 6.30
123	LPEN	DLN	2.89	0.009	1.88	0.035	0.238	23	0.132	51	0.123	58	8.47	6.51	8.46 6.62
124	LPTW	DLN	0.82	0.556	0.72	0.732	0.212	76	0.125	58	0.160	43	8.54	6.34	8.53 6.54
125	LPTR	DLN	0.54	0.781	1.37	0.175	0.207	82	0.103	72	0.083	79	8.60	6.65	8.58 6.86
126	LPFR	DLN	1.43	0.203	1.52	0.113	0.215	68	0.105	71	0.099	70	8.61	6.59	8.60 6.71
128	LPGOV	DLN	1.47	0.186	1.36	0.181	0.217	63	0.093	80	0.081	81	8.71	6.39	8.68 6.76
Productivity and Real Wages															
131	PLM	DLN	1.01	0.419	1.90	0.032	0.216	65	0.183	29	0.276	5	8.31	5.88	8.29 6.07
133	LEHM	DLN	2.92	0.008	2.20	0.011	0.231	36	0.210	15	0.232	14	8.05	6.35	8.03 6.56
Prices															
137	PUNEW	DLN	2.06	0.056	1.28	0.228	0.225	45	0.179	31	0.256	11	8.26	6.23	8.24 6.50
138	PZUNEW	DLN	3.08	0.006	1.86	0.037	0.232	33	0.180	30	0.256	10	8.24	6.28	8.22 6.52
139	PW	DLN	2.19	0.043	1.38	0.174	0.224	47	0.165	35	0.211	22	8.30	6.41	8.29 6.53
140	PW1200	DLN	2.83	0.010	1.89	0.034	0.230	38	0.109	66	0.145	51	8.57	6.62	8.55 6.95
141	PW1300	DLN	0.85	0.529	1.23	0.258	0.212	75	0.138	47	0.195	33	8.47	6.35	8.46 6.49
142	PWCMP	DLN	2.03	0.061	1.19	0.286	0.219	60	0.090	81	0.094	74	8.70	6.53	8.69 6.67
143	PWFC	DLN	1.46	0.190	1.13	0.331	0.219	59	0.143	46	0.196	32	8.44	6.34	8.44 6.43
144	PWFP	DLN	3.22	0.004	1.98	0.024	0.233	30	0.247	5	0.252	12	7.86	6.19	7.85 6.29
145	PWFUEL	DLN	0.91	0.490	1.60	0.089	0.210	80	0.151	41	0.209	26	8.30	6.79	8.17 8.43
146	PWIC	DLN	2.56	0.019	2.03	0.021	0.228	41	0.207	16	0.261	9	8.02	6.57	7.99 6.86
147	PWIMS	DLN	2.44	0.025	1.49	0.125	0.228	42	0.207	17	0.247	13	8.04	6.47	8.02 6.62
148	PWIMSM	DLN	3.08	0.006	1.89	0.034	0.236	26	0.217	12	0.270	6	7.99	6.44	7.98 6.57
150	PSCCOM	DLN	3.21	0.004	1.79	0.047	0.235	29	0.098	75	0.112	63	8.64	6.62	8.62 6.85
Misc.: Government and other															
162	FAIL	DLN	1.74	0.110	1.79	0.047	0.222	53	0.109	68	0.101	69	8.56	6.68	8.54 6.94
163	INC	DLN	3.53	0.002	1.92	0.030	0.251	10	0.194	24	0.143	52	8.03	6.84	8.01 7.02

Notes: The statistics are identical to those reported in Table 3, except that the sample period begins with 1948:1. See the notes to Tables 2 and 3 for descriptions.

Table 7

Leading Indicators, classified by lead at maximal absolute correlation (k_{max}) of filtered series $a_{24}(L)Y_t$, as reported in Table 1, column 16

Rank	Vble no.	Name	k_{max}	$r_{xy}(k_{max})$
Range of Lead:	*-1*	*to*	*-2*	*months*
1	115	LHEL	-1	0.95
2	24	MT82	-1	0.94
3	13	IPI	-1	0.93
4	7	IPN	-1	0.92
5	130	IPROD1	-1	0.92
6	34	MO82	-1	0.90
7	35	MDO82	-1	0.90
8	33	MOCM82	-2	0.89
9	3	IPC	-1	0.88
10	112	LPMOSA	-1	0.87
11	117	LUINC	-2	-0.87
12	105	LHNAPS	-1	-0.86
13	104	LHNAGP	-1	-0.84
14	5	IPCD	-1	0.82
15	111	LPHRD	-1	0.80
16	4	IPCN	-1	0.80
17	110	LPHRM	-1	0.79
18	44	IVT82	-2	-0.79
19	32	MSOND8	-1	0.78
20	106	LHNPVX	-1	0.77
21	31	MPCON8	-1	0.76
22	36	MNO82	-2	0.75
23	88	BAA_G10	-2	-0.74
24	18	GMC82	-2	0.73
25	39	MNU82	-2	0.73
26	113	LHU5	-2	-0.73
27	27	RT8	-2	0.73
28	19	GMCD82	-2	0.70
29	28	RTR82	-2	0.69
30	131	PLM	-2	-0.69
31	45	VENDOR	-2	0.67
32	60	FCBCUC	-2	0.67
33	89	BAA_AAA	-2	-0.66
34	29	RCARD	-1	0.58
35	30	RCARTA	-1	0.56
36	9	IPUT	-1	0.46
37	42	IVM2D8	-2	0.43
38	95	FYGM3R	-2	0.34

Rank	Vble no.	Name	k_{max}	$r_{xy}(k_{max})$
Range of Lead:	*-3*	*to*	*-4*	*months*
1	58	FMLR	-4	0.60
2	90	AAA_GL	-3	-0.58
3	163	INC	-3	0.55
4	144	PWFP	-4	-0.53
5	52	FM1D82	-4	0.53
6	141	PW1300	-4	-0.46
7	162	FAIL	-3	-0.40
8	55	FM3	-3	0.27
9	51	FM1	-3	0.25
10	49	FMBASE	-3	0.18
Range of Lead:	*-5*	*to*	*-7*	*months*
1	54	FM2D82	-6	0.68
2	50	FMBASER	-6	0.62
3	56	FM3R	-5	0.59
4	46	HSBP	-6	0.59
5	47	HSFR	-6	0.59
6	65	FSPCOM	-6	0.55
7	66	FSPIN	-6	0.54
8	67	FSDJ	-6	0.51
9	136	RPWGMDS	-7	0.49
10	78	FYBAAC	-7	-0.48
11	53	FM2	-5	0.48
12	133	LEHM	-7	-0.31
13	151	EXRWT1	-5	-0.30
14	152	EXRWT2	-5	-0.27
15	153	EXNWT1	-5	-0.26
16	154	EXNWT2	-5	-0.24
Range of Lead:	*-8*	*to*	*-10*	*months*
1	148	PWIMSM	-8	-0.57
2	147	PWIMS	-8	-0.54
3	146	PWIC	-8	-0.53
4	137	PUNEW	-9	-0.53
5	138	PZUNEW	-9	-0.52
6	135	RPWGMS	-8	0.52
7	139	PW	-9	-0.48
8	86	CP6_GM6	-8	-0.48
9	159	FBD	-8	0.47
10	134	LEHM82	-10	0.47
11	145	PWFUEL	-9	-0.47
12	143	PWFC	-10	-0.46
13	87	BAC_GM3	-8	-0.44
14	82	G1_GM6	-8	-0.23
Range of Lead:	*-11*	*to*	*-14*	*months*
1	160	FBDY	-13	0.47
2	77	FYAAAC	-12	-0.45
3	74	FYGL	-13	-0.42
4	119	LPMI	-11	-0.41
5	73	FYGT10	-13	-0.41

Table 8

Leading Indicators, classified by predictive content for ICI growth for the conditioning set of Table 2 (lagged series and ICI growth, 1959 - 1988

A. Classified by 6-month ahead in-sample R^2				*B. Classified by 6-month ahead "out-of-sample" RMSE (79:10-88:12)*		
Rank	Series		$R^2(6)$	Series		RMSE
1	86	CP6_GM6	0.53	62	FCLBMCY	3.62
2	87	BAC_GM3	0.47	46	HSBP	3.92
3	85	GM3_FF	0.46	47	HSFR	3.94
4	93	FF_G10	0.44	137	PUNEW	4.12
5	54	FM2D82	0.42	59	FCLN82	4.14
6	115	LHEL	0.39	131	PLM	4.18
7	62	FCLBMCY	0.38	138	PZUNEW	4.18
8	80	G10_G1	0.35	86	CP6_GM6	4.19
9	46	HSBP	0.34	119	LPMI	4.20
10	50	FMBASER	0.34	161	FBYS	4.23
11	148	PWIMSM	0.33	87	BAC_GM3	4.23
12	39	MNU82	0.32	20	GMPY	4.26
13	56	FM3R	0.32	84	GM6_GM3	4.26
14	65	FSPCOM	0.32	152	EXRWT2	4.27
15	66	FSPIN	0.31	153	EXNWT1	4.28
16	58	FMLR	0.31	154	EXNWT2	4.31
17	47	HSFR	0.31	151	EXRWT1	4.33
18	79	GL_GM3	0.30	144	PWFP	4.33
19	147	PWIMS	0.30	122	LPED	4.36
20	116	LHELX	0.30	3	IPC	4.39
21	92	FF_BAC	0.30	143	PWFC	4.39
22	67	FSDJ	0.30	155	EXVUS	4.40
23	160	FBDY	0.29	8	IPMIN	4.41
24	144	PWFP	0.29	121	LPEM	4.41
25	146	PWIC	0.28	13	IPI	4.42
26	81	G10_GM3	0.28	7	IPN	4.42
27	78	FYBAAC	0.28	27	RT8	4.44
28	52	FM1D82	0.28	133	LEHM	4.44
29	161	FBYS	0.28	105	LHNAPS	4.44
30	53	FM2	0.27	128	LPGOV	4.45
31	91	FF_CP6	0.27	115	LHEL	4.45
32	159	FBD	0.27	124	LPTW	4.45
33	137	PUNEW	0.26	35	MDO82	4.47
34	45	VENDOR	0.26	32	MSOND8	4.47
35	108	LHULLHEM	0.26	28	RTR82	4.47
36	138	PZUNEW	0.25	38	MDU82	4.48
37	117	LUINC	0.25	141	PW1300	4.48
38	139	PW	0.25	90	AAA_GL	4.48
39	105	LHNAPS	0.25	31	MPCON8	4.48
40	75	FYCP	0.25	99	LPMHUADJ	4.49

Table 9

Leading Indicators, classified by predictive content for ICI growth for the conditioning set of Table 4 (lagged series, ICI growth, money growth, inflation, 90-day T-bill rate), 1959 - 1988

A. Classified by 6-month ahead in-sample R^2				*B. Classified by 6-month ahead "out-of-sample" RMSE (79:10-88:12)*		
Rank	Series		$R^2(6)$	Series		RMSE
1	86	CP6_GM6	0.58	86	CP6_GM6	4.44
2	115	LHEL	0.56	115	LHEL	4.57
3	87	BAC_GM3	0.54	87	BAC_GM3	4.82
4	85	GM3_FF	0.54	45	VENDOR	4.92
5	93	FF_G10	0.53	142	PWCMP	4.95
6	108	LHULLHEM	0.51	123	LPEN	4.96
7	39	MNU82	0.50	38	MDU82	4.98
8	62	FCLBMCY	0.49	105	LHNAPS	4.98
9	75	FYCP	0.49	94	FYFFR	4.99
10	66	FSPIN	0.49	140	PW1200	5.00
11	76	FYBAC	0.49	46	HSBP	5.01
12	65	FSPCOM	0.48	37	MU82	5.01
13	149	PSMC99A	0.48	10	IPE	5.02
14	80	G10_G1	0.48	85	GM3_FF	5.02
15	148	PWIMSM	0.48	93	FF_G10	5.02
16	161	FBYS	0.48	62	FCLBMCY	5.02
17	107	LHUL	0.48	7	IPN	5.03
18	92	FF_BAC	0.48	149	PSMC99A	5.04
19	59	FCLN82	0.48	148	PWIMSM	5.04
20	140	PW1200	0.48	47	HSFR	5.05
21	147	PWIMS	0.48	150	PSCCOM	5.05
22	142	PWCMP	0.47	116	LHELX	5.06
23	67	FSDJ	0.47	32	MSOND8	5.06
24	26	WT8	0.47	134	LEHM82	5.06
25	116	LHELX	0.47	154	EXNWT2	5.06
26	25	MSM8	0.47	92	FF_BAC	5.07
27	46	HSBP	0.47	42	IVM2D8	5.07
28	105	LHNAPS	0.47	104	LHNAGP	5.08
29	159	FBD	0.47	25	MSM8	5.08
30	47	HSFR	0.47	153	EXNWT1	5.08
31	134	LEHM82	0.47	106	LHNPVX	5.09
32	160	FBDY	0.46	16	IPXDCA	5.09
33	16	IPXDCA	0.46	103	LHCH	5.09
34	90	AAA_GL	0.46	107	LHUL	5.10
35	155	EXVUS	0.46	124	LPTW	5.10
36	94	FYFFR	0.46	59	FCLN82	5.11
37	144	PWFP	0.46	64	CCI30M	5.12
38	79	GL_GM3	0.46	120	LPCC	5.13
39	69	FYFF	0.46	12	IPM	5.14
40	37	MU82	0.46	152	EXRWT2	5.15