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Forecasting Malaysian Business Cycle Movement: Empirical Evidence from Composite Leading Indicator

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Abstract
Early detection of a turning point in a business cycle is crucial, as information about the changing phases in business cycles enables policy makers, the business community, and investors to cope better with unexpected events brought about by economic and business situations. The Malaysian economy is fortunate to own a publicly accessible composite of leading indicator (CLI) that is presumed capable of tracing the business cycle movement and thus contributes to the creation of an early signaling tool for short-term economic forecasting. Certainly, the usefulness of this CLI in monitoring the contemporary economic and business condition in Malaysia will be empirically appealing to the nation. Even though the present study can display the ability of the Malaysian CLI to trace the business cycle and offers advanced detection of business cycle turning points, the evidence of diminishing lead times foreseen by the CLI significantly weaken the fundamental function of a leading index as an early tool to signal economic vulnerability.

Keywords: Business Cycle, Composite Leading Indicator, Early Signaling Tool

1. Introduction

For many decades, economists have sought to summarize the visual evidence of cyclical oscillation in economic series in some way to learn the characteristics of such cycles in real macroeconomic settings. In respect to the vastly classical text of Burns and Mitchell (1946), existence of various business cycle conceptions indeed shared a single objective, that is, to strengthen insight into the underlying thoughts behind recurring ups and downs in economic activity. Even though the cyclical fluctuations in economic activity hardly follow a predictable periodic pattern, as the size and magnitude of expansion and contraction deviate across periods, each turning point in the business cycle presents certain crucial information that offers future indication on the changing phases of the economy. Moreover, development in leading indicator analysis persuasively suggests that combinations of sets of leading series to form a unique composite index is generally better than any single series in explaining the cyclical movement.

Undeniably, attempts to track the business cycle may be undertaken under a composite leading indicator (CLI) since business cycles are widely characterized as broad-based co-movement among a set of economic series, which in turn reflect the future state of the economy. As a result, the leading indicator approach pioneered by the National Bureau of Economic Research (NBER) has been in the forefront of business cycle forecasting, as the leading feature of an indicator exhibits certain forecasting ability to foreshadow the changing economic scenario in the near future. Kozlowski (1980, p. 3) acknowledged that leading indicators have had a long history of usefulness in short-term economic forecasting for a national economy. Since the pioneering work of Mitchell and Burns (1938) and Burns and Mitchell (1946), interest in leading indicator analysis has grown among the national policymakers as well as business community since this forecasting approach works significantly well in presaging the cyclical transformation of economic and business conditions.

Owing to the capability in signaling the changing economic and business situation, the role of CLI in macroeconomic and business cycle forecasting receives great attention from government authorities, the business community, and economic research institutions. This is evidenced from the fact that most of the industrialized or economically advanced economies seriously recognize the CLI as a signaling tool to enhance short-term economic forecasts (Cotrie, Craigwell & Maurin, 2009). Unfortunately, there is little literature in this domain when we look at the developing nations. The application of leading indicator approach in business cycle analysis in developing economies only marked a short history and its construction remains a recent practice in the macroeconomics forecasting agenda.

One of the great challenges, which to some extent justified the slow development of such a forecasting approach in developing nations, is that the compilation of a CLI requires the use of a huge set of high frequency macroeconomic data with long time series. However, during the decades before the system of leading indicator was put in place in developing countries, the national statistical system in most of the developing countries was far less able to support the generation of a resilient CLI. Besides that, the limited availability of economically and statistically significant economic and financial data proven to be reliable is another problem to be dealt with if a more robust CLI is to be constructed.

However, due to the difficulties of some critical financial crises in South East Asia and South America, many developing countries are inspired to strengthen the inadequacy in their national statistical systems. This is to ensure that a more resilient economic monitoring system can be established to support the generation of effective precautionary measures to deal with any impending crisis. As such, many previously unavailable macroeconomic and financial indicators are now becoming available, offering much opportunity to conduct empirical research in business and economic forecasting. Despite this encouraging development, the practical significance of a leading indicator approach to macroeconomic and business cycle forecasting is uncertain due to the limited empirical evidence supporting the literature of macroeconomic forecasting via leading indicator approach.

Though the fundamental insight of the leading indicator approach highlighted in the literature, especially the experience put forward by NBER and Organization for Economic Co-operation and Development (OECD), has provided great conviction that the leading indicator can work for business cycle and macroeconomic forecasting. One major challenge in exploiting the leading indicator approach is that the forecasting performance of the indicator needs to be scrutinized occasionally to ensure that the indicator conveys timely information about the future. Given the availability of a publicly accessible CLI that is attributable to the national statistical institution of Malaysia, the present study presents a worthwhile opportunity to explore the experience in business cycle monitoring and forecasting via leading indicator approach from the perspective of a fast developing nation.

Malaysia, as one of the successful non-Western countries, owes its flourishing historical economic profile to its early exposure to international markets besides having other comparative advantages in terms of abundant natural resources and labor force, on top of political stability. Nevertheless, growing under an increasingly dynamic and globalized economic environment, the Malaysian economy has always been remarkably open to external influences, which doubtless give rise to immense risk and uncertainty to the domestic economy. Such economic vulnerability has been proven in decisive moments demonstrated in the historical profile of the Malaysia business cycle during the period 1980s-2010s. The critical historical turning points in the business cycle, which in turn translated into certain major crises or recessions in the Malaysian economy, significantly hindered the prosperous economic advancement in the country. For instance, the onslaught of the Asian financial crisis in 1997 has to some extent interrupted the notable growth in the Malaysian economy, as well as the Asian economies as a whole.

Accordingly, the main aim of this study is to evaluate the forecasting performance of the publicly available CLI in tracing and monitoring movement in the Malaysian business cycle. In order to offer a comprehensive evaluation on the forecasting performance and predictive capability of the CLI for the Malaysian economy, evidence of series co-movement between the CLI and business cycle and predictive content evaluation has been studied before turning point analysis comes to pass to evaluate the forecasting power of the CLI. This paper is organized into sections, as follows. The next section provides a brief discussion on the indicator approach to business cycle forecasting and reference series selection, followed by a brief description of the data. The subsequent section goes into methodological aspects of the study as well as presentation of empirical findings and interpretations. The final section contains the conclusion.

2. Indicator Approach to Business Cycle Forecasting and Reference Series Selection

The underpinning work on business cycle analysis is credited to the seminal publication of Burns and Mitchell (1946), who commence a methodology in transforming the cyclical evidence of economic series in some way to examine the characteristics of such cycles in the belief that the visual evidence of those economic series contains certain information about the economy. Their inspiration was the first venture into reality by the creation of the NBER committee which is responsible for dating U.S. business cycles. Burns and Mitchell (1946, p. 3) explicate a "cycle: as consisting of *expansions occurring at about the same time in many economic activities, followed by similarly general recessions, contractions and revivals which merge into the expansion phase of the next cycle; this sequence of changes is recurrent but not periodic.* Thus, the term business cycle represents an economy-wide cyclical fluctuation that consists of alternating phases of expansion and contraction over several months or years. The cycle is coupled with several periods of transformation that we called turning points.

The OECD characterizes a business cycle as a *recurrent sequence of alternating phases of expansion and contraction in the level of a time series*. Such expression has been widely termed as "classical cycle" or "business cycle." Alternatively, a "growth cycle" is described as *recurrent fluctuations in the series of deviation from trend*. In other words, the cycle is the result of deviations of the economy from its long-term trend. In this circumstance, a contraction phase represents a decline in the rate of growth in the economy but not necessarily as a result of an absolute drop in economic activity (Everhart & Duval-Hernandez, 2000; Yap, 2009). In the case of Malaysia, growth cycle is indeed an appropriate characterization of business cycle because the economy did not suffer from major oscillation in the level of general economic activity, but did experience fluctuations in the growth rates of economic activity (Zhang & Zhuang, 2002; Ahmad, 2003). In accordance with this phenomenon, this study adopted a growth cycle approach in characterizing the Malaysian business cycle.

In order to monitor the cyclical fluctuations in the business cycle, the indicator approach utilizes a huge set of economic indicators that can be broadly classified into leading, coincident, and lagging indicators. Among the three indicators, the CLI is the one designed to forecast the business cycle turning points and capability in determining the future direction of the economy. The CLI is an aggregated unique series that encompasses a bundle of economic indicators that carry some leading attributes and possess significant anticipating elements about the future roadmap of the economy. As such, the individual leading series, when blended into a group, can form a CLI that is able to work as an early signaling tool to monitor the changing economic environment and strengthen short-term economic forecasting for the country.

In business cycle study, identification of an appropriate measure of business cycles is another important empirical concern. The European Central Bank (2001) noted that there is no general agreement on which series should be selected to represent the business cycle. Some of the previous literatures regard real GDP to be a comprehensive measure of aggregate economy while some researchers favor using the Index of Industrial Production (IIP) to represent the business cycle. The later argued that the IIP is usually publicly accessible monthly for most of the country and the degree of revision is less frequent compared to GDP series. Thus, OECD opted for IIP as reference series in business cycle analysis, while the official publication of the Department of Statistics Malaysia (DOSM) in this context used a coincident index (CCI) built by the authority. On the other hand, the NBER takes on real GDP as a proxy of the business cycle. In this study, GDP in real terms (RGDP) will be adopted as a reference series following the NBER routine.

3. Data Description

In order to examine the applicability of the leading indicator approach in forecasting the business cycle fluctuations in the Malaysian economy, the study utilized monthly series' of real GDP and CLI covering the period of 1981-2010. The monthly series of the CLI was compiled from various issues of *Malaysian Economic Indicators* published by the DOSM. On the other hand, the monthly series of consumer price index (CPI) and quarterly series of GDP were extracted from the *International Financial Statistics Yearbook* (IFS) published by the International Monetary Fund (IMF). Interpolation technique proposed by Gandolfo (1981) was applied to interpolate quarterly GDP series into its monthly basic. The ratio of GDP to CPI was then calculated to transform the GDP series into its real term.

As documented in the CLI publication, the CLI is constructed based on the Moore-Shiskin method by averaging the month-to-month growth rates of the index component before standardizing them into the same unit. Then, the average growth rate was cumulated to obtain an index. Lastly, the index was adjusted to have the same average absolute percentage changes as the cyclical component of industrial production, and also the same average trend rate of growth as real GDP. The compilation of this index into its composite form utilizes eight economic series: (i) KLSE share price index, industrial (1970=100); (ii) growth rate of CPI for services sector (inverted); (iii) growth rate of industrial material price index; (iv) ratio of price to unit labor cost for manufacturing sector; (v) money supply, M1 in real term; (vi) housing permits approved; (vii) real total traded from eight major trading partners; and (viii) new companies registered.

4. Empirical Results and Discussion

As noted by many macroeconomists involved in empirical study using time series analysis, macroeconomic time series are habitually non-stationary due to the existence of unit root. Thus, incorporating such an unstable series into regression estimates will yield an erroneous conclusion, as the inferences drawn from the regression estimates are based on spurious regression results (Engle & Granger, 1987). As a result, much of the recent empirical works that involve time series analysis have accounted for the pre-testing of the time series properties of the data series. Hence, before we establish the evidence of cointegration, the time series properties of the CLI and real GDP were examined using Augmented Dickey-Fuller unit root tests developed by Dickey and Fuller (1979, 1981) and Phillips-Perron (PP) unit root test proposed by Phillips and Perron (1988). Both tests are conducted first on the level of each series. If no stationarity can be reached, the first difference will be considered and the process is repeated until the time series achieves stationarity. Both of the tests take on the null hypothesis of the existence of unit root. In other words, rejection of the null hypothesis at any conventional level of statistical significance implies the existence of stationary series. The results of ADF and PP tests are presented in Table 1.

(Insert Table 1 here)

Both ADF and PP tests collectively show the existence of non-stationary CLI and real GDP when the tests were performed at the level of the series. However, when first difference is applied, both series turn out to be stationary as the null hypothesis of unit root can be firmly rejected at a 1 percent level of significance. Given that the two testing procedures showed consistent evidence of stationarity after differencing once, we can conclude that all the series under study reached stationarity at first difference or possess $I(1)$ stochastic process. As the two variables own similar order of integration, we can proceed to cointegration tests to examine the evidence of long-run co-movement between the CLI and real GDP. Before we proceed to the cointegration tests proposed by Johansen and Juselius (1990), an appropriate lag length for the VAR system needs to be selected. Hence, the Akaike Information Criterion (AIC) proposed by Gonzalo and Pitarakis (2002) served as the selection criterion to ascertain the optimal lag length for the VAR system in the next testing procedure. The finding indicates that the optimal lag length for the VAR system is 2 or VAR (2).

After realization of the optimal lag length for the VAR system, the Johansen and Juselius cointegration test is performed to discover the evidence of cointegration between the CLI and business cycle as proxied by real GDP. Under this testing procedure, we seek to distinguish the presence or absence of a long-run stable relationship between the CLI and business cycle. If a cointegrating relationship can be verified, then the CLI is said to be moving in sync with the business cycle over the long-run. The results for Johansen and Juselius cointegration test, established on the basis of trace and maximum eigenvalue test statistics, are presented in Table 2. Findings from both trace and maximal eigenvalue tests statistics simultaneously suggest that the null hypothesis of no cointegration can be firmly rejected at a 5 percent significant level. Furthermore, both test statistics consistently show the existence of only one cointegrating vector in the system. This confirmed the presence of co-movement between CLI and real GDP in the long-run, and these two variables share similar long-run equilibrium paths. Importantly, the presence of this long-run stable relationship ensures that we are more likely to own a higher degree of synchronized cyclical determinant between the CLI and business cycle.

(Insert Table 2 here)

As the cointegration test does not imply the direction of Granger causality, we employed a vector error correction model (VECM) to examine the direction of causal effects between the CLI and business cycle. In this study, the inferences drawn from the Granger causality test present a meaningful implication to the evaluation of predictive content of CLI with respect to the Malaysian business cycle. If a causal relationship in a Granger sense can be established, we thus are able to provide empirical confirmation that the CLI possesses predictive value or information content for the business cycle. The finding on short-run causality is presented in Table 3 and there are several inferences we can draw from the result. Firstly, the null hypothesis of CLI does not Granger causes real GDP is firmly rejected at a 1 percent significant level. Likewise, the null hypothesis of real GDP does not Granger causes RGDP also being rejected at 1 percent level of significance. These findings imply the existence of bidirectional causality between CLI and real GDP. Essentially, the existence of short-run causality running from CLI to real GDP enables us to confirm that the CLI owns predictive content for the Malaysian business cycle as represented by real GDP. In this sense, the CLI can be regarded as a useful predictor to the Malaysian business cycle.

(Insert Table 3 here)

Although the robustness and responsiveness of the existing CLI in predicting business cycle turning points still could not be justified in this extent, the ability to impart the existence of predictive content of CLI for the Malaysia business cycle would sufficient to acknowledge the appropriateness of a leading indicator approach to business cycle forecasting in the context of Malaysia. In tandem, the presence of predictive content of CLI for the Malaysian business cycle implies that the cyclical movements in CLI, which are collectively contributed by a set of selected component series, indeed uphold certain important information on business cycles and it would potentially be a good gauge of the business cycle situation with some signaling capabilities.

After examining the predictive value of CLI over the entire business cycle, the next aim of this study is to evaluate the forecasting ability of the CLI in tracing the turning point in the Malaysian business cycle. In order to study the cyclical movement of the CLI and real GDP, we decompose both time series to yield the cyclical component underlying the CLI and real GDP. For this purpose, the Hodrick-Prescott (HP) filter developed by Hodrick and Prescott (1980) has been employed to generate a smooth estimate of the long-run trend component of the CLI and real GDP. The HP filter is a widely applied detrending framework used to decompose the seasonally adjusted time-series into trends, besides providing a smooth trend to a minimized problem. The HP filter was first employed by Hodrick and Prescott in the early 1980s to study the business cycle for the United States. Thus far, it is one of the commonly applied techniques to extract the cyclical component in business cycle analysis. Recent business cycle researches, such as Everhart and Duval-Hernandez (2000), Kranendonk, Bonenkamp and Verbruggen (2005), Bascos-Deveza (2006), Klucik and Haluska (2008), Zalewski (2009), Polasek (2010), and many more opted for an HP filter for cycle extraction.

After extracted the cyclical component CLI and real GDP from their long-term trends, we are able to analyze the Malaysian cycle based on a growth rate approach. The forecasting performance of the CLI to business cycle has been evaluated via turning point analysis, and graphical presentation in Figure 1 serves as a means to examine the arrival of any critical turning point and observe how the CLI traces the business cycle in Malaysia. In general, the presentation of cyclical oscillation in Figure 1 shows that the movement of the CLI is relatively coherent with the movement of the business cycle represented by real GDP. In chorus, the traced peaks and troughs from turning point analysis are fairly consistent with the historical profile of the Malaysian business cycle. Furthermore, from Figure 1, it is obvious that CLI moves in advance of real GDP most of the time, and the turning points in CLI consistently appear a few months earlier than the turning points in RGDP.

(Insert Figure 1 here)

Then, from the turning point analysis based on the Bry and Boschan (1971) procedure, we establish an alternative chronology for the Malaysian business cycle and tabulate the amount of early signal provided by CLI in relation to the Malaysian business cycle in Table 4. Interestingly, we observe a decreasing trend of early signal offered by CLI. In other words, even though CLI traced the occurrence of turning point in an advanced time, the amount of signaling becomes smaller over time.

(Insert Table 4 here)

Moreover, another appealing finding can be witnessed through the comparative analysis presented in Table 5. The business cycle reference chronology marked in the present study is distinctively different from the officially published reference chronology. One obvious distinction in this context is largely due to the use of different measures of business cycle. The official reference chronology is marked by taking the Composite Coincidence Index (CCI) built by the similar authority as the reference series. However, in the present study, real GDP serves as the reference series to the business cycle as it is regarded as an ideal representation of the Malaysian business cycle. Besides following the common practice of business cycle study, this selection is also supported by the finding of the Granger causality test reported in Table 3 which reveals that real GDP and CLI are indeed Granger causing each other, suggesting the existence of information content between these two series.

(Insert Table 5 here)

Another key finding we can draw from Table 5 is that the marked date of business cycle turning points obtained in the present study approach in advance of or analogous to the one marked by the DOSM for 8 out of 13 turning points in the full sample period. On the other hand, the chronology marked by DOSM only owns 5 turning points that surpass the marked date of turning points obtained in this study. Hence, the one remarkable implication from this analysis is that the business cycle forecasting is sensitive to the selection of an appropriate measure of the overall economic activity besides the predictive power of the CLI per se.

5. Conclusion

Exploring the indicator approach furnished by the national statistical institution of Malaysia enables us to provide better insight into the applicability of the leading indicator approach to business cycle monitoring and forecasting for a developing nation whose progress is under the wave of economic dynamism. Besides looking at the promptness of CLI in predicting the business cycle turning points, this study also seeks to examine the co-movement between the CLI and business cycle, an empirical concern that received little emphasis in business cycle literature in the past. This is because the CLI and business cycle are presumed to postulate a cointegrating relationship while their cyclical components are presumably being examined. Yet, one important argument noted by Yap (2009) is that the past analogous movement between the CLI and business cycle do not promise cyclical synchronization if the cointegrating relationship breaks off over time. Consequently, the implication of series co-movement in business cycle analysis is indeed substantial and a meaningful issue to be analyzed in this present study.

From the present study, we are able to demonstrate that the CLI is indeed cointegrated with real GDP. This finding implies that the CLI and business cycle are synchronized along the period of the study. The evidence of synchronization serves as an important inference to strengthen the potential ability of the CLI as a predictor to the business cycle movement. Furthermore, the forecasting performance and predictive capability of the existing CLI is evaluated based on its ability to provide signaling effect to the real GDP under the growth cycle approach. From this perspective per se, the performance of the existing CLI as a predictor of business cycle analysis is deemed to be fairly adequate given the decreasing amount of early signals, provided the real GDP is the comprehensive measure of the business cycle. However, an assessment of the usefulness of the Malaysia business cycle indicator performed by Yap (2009) surprisingly concluded that the publicly available CLI provides less reliable turning point detection at troughs with three missed turning points and the turning points prediction was not notable as the lead times were vastly erratic.

Another finding worth noting is that offered by Yap (2009) concerning the effectiveness of the existing CLI as an early warning tool for business cycle forecasting. The author observed an increased strength of correlation between CLI and CCI but lead times have become shorter over time. Interestingly, this finding is consistent with the empirical evidence drawn from the present study. As such, regardless of whether the business cycle is represented by real GDP or CCI, we can observe a diminishing capability of CLI to reveal early signal to vulnerable turning points. Given that diminishing lead times of CLI to business cycle turning points weaken the fundamental function of a leading index as an early warning tool to economic vulnerability, future study is encouraged to construct an alternative business cycle indicator that can contribute significantly to the reliable forecasts of the Malaysian business cycle with remarkable lead times.

In a nutshell, exploring the experience on indicator approach to business cycle forecasting performed by the national statistical institution of Malaysia, the present study is able to display the potential ability of a leading indicator as an early warning mechanism for economic vulnerability. Seeing that the business cycle turning point prediction based on leading indicators is able to recognize the changing phases of economic activity, besides providing early signals of a vulnerable economic situation, it becomes crucial for an economy to own a robust CLI that is able to recognize business cycle turning points in a timely manner.

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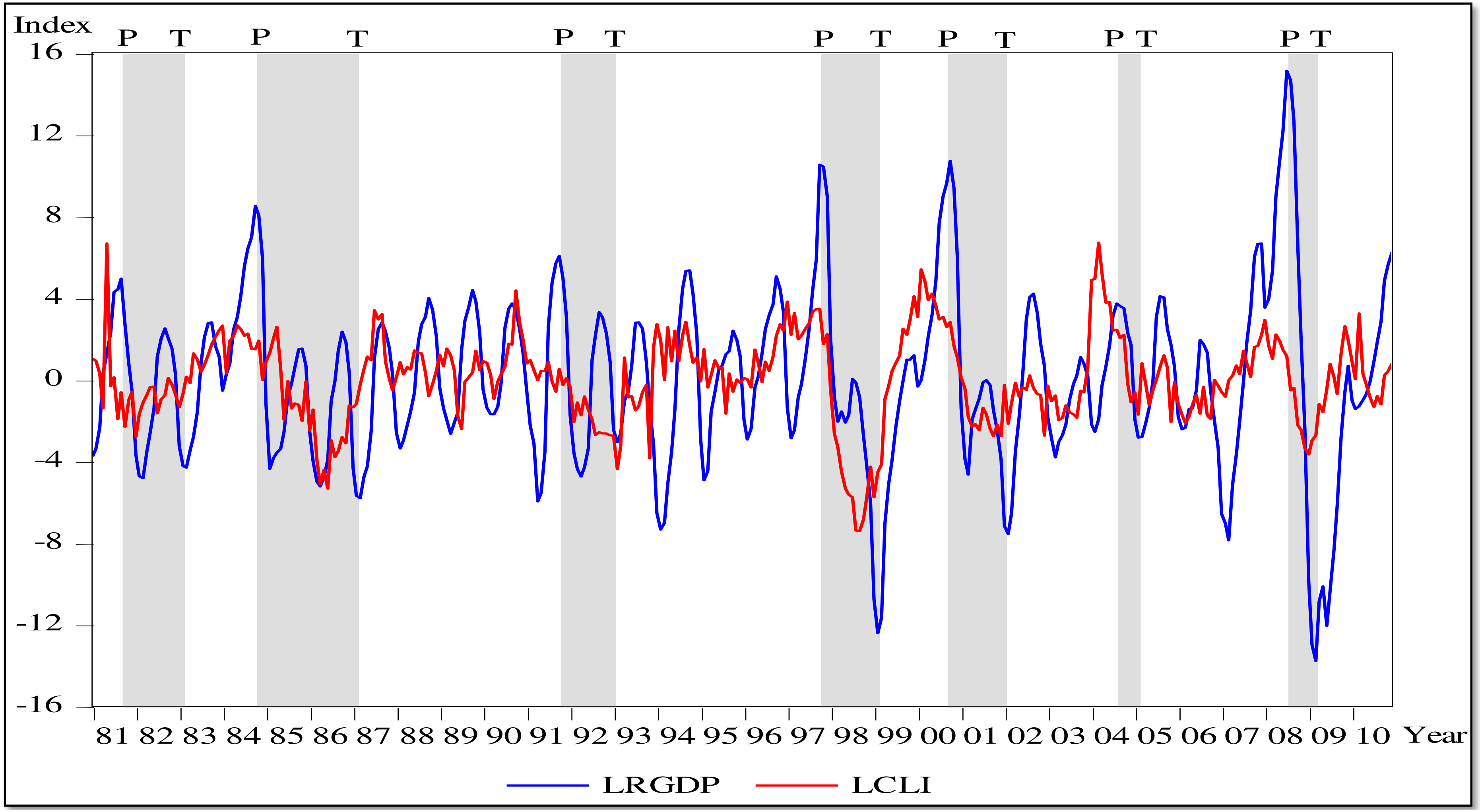

Figure 1: LRGDP versus LCLI, 1981:01 – 2010:12

Table 1: Unit Root Tests Results

Variables	ADF		PP	
	Constant No Trend	Constant Trend	Constant No Trend	Constant Trend
		Level		
LRGDP	-0.184	-2.971	-0.167	-3.226
LCLI	-0.391	-2.226	-0.378	-3.110
		First Difference		
ΔLRGDP	-5.583***	-5.575***	-7.232***	-7.210***
ΔLCLI	-25.186***	-25.154***	-24.348***	-24.322***

Notes: Asterisks (***) indicate statistically significant at 1% level. Lag lengths for ADF and PP tests have been chosen on the basis of Schwarz's Information Criteria (SC). LRGDP and LCLI denote natural logarithms of real GDP and CLI, respectively.

Table 2: Johansen Cointegration Test Results

Variables: LRGDP LCLI; k=1, r=1			
H_0	H_1	λ-trace	95% Critical Value
$r = 0$	$r \geq 1$	57.044*	15.495
$r \leq 1$	$r \geq 2$	0.259	3.841
H_0	H_1	λ-max	95% Critical Value
$r = 0$	$r = 1$	56.785*	14.265
$r \leq 1$	$r = 2$	0.259	3.841

Notes: The following notation applies: LRGDP designate natural logarithms of real gross domestic product, LCLI is the natural logarithms of composite leading index. Asterisk (*) denotes significant at 5% level, k is the number of lag and r is the number of cointegration vector(s).

Table 3: Granger Causality Test Results

Null hypothesis	Chi-square values	ECT [t-statistics]
CLI does not Granger cause RGDP	8.636 (0.00)***	-0.094 [-7.447]***
RGDP does not Granger cause CLI	6.450 (0.011)**	-0.030 [-2.706]***

Notes: Figure in bracket ( ) is the *p*-value and [ ] is the *t*-statistic. Asterisks (***) and (**) denote statistically significant at the 1% and 5% levels, respectively.

Table 4: Reference Chronology and the Amount of Early Signals (1981-2010)

	Reference Chronology of Business Cycle	Amount of Early Signals	Important Events
Peak **Trough**	Aug-1981 Mar-1982	3 months	World Recession
Peak **Trough**	Oct-1984 Mar-1987	7 months	Commodity Shock
Peak **Trough**	Sep-1991 Jan-1993	6 months	Global Recession
Peak **Trough**	Oct-1997 Jan-1999	5 months	Asian Financial Crisis
Peak **Trough**	Sep-2000 Feb-2002	4 months	U.S. Technology Bubble
Peak **Trough**	Aug-2004 Feb-2005	3 months	Oil Price Hikes
Peak **Trough**	July-2008 Feb-2009	3 months	Sub-prime Mortgage Crisis

Table 5: Comparative Finding from Turning Point Analysis (1981-2010)

	CLI vs RGDP (Present Study)	CLI vs CCI (DOSM)	Important Events
Peak **Trough**	Aug-1981 Mar-1982	- Nov-1982	World Recession
Peak **Trough**	Oct-1984 Mar-1987	Jan-1985 **Jan-1987**	Commodity Shock
Peak **Trough**	Sep-1991 Jan-1993	Jan-1992 Jan-1993	Global Recession
Peak **Trough**	Oct-1997 Jan-1999	**Jan-1997** Jan-1999	Asian Financial Crisis
Peak **Trough**	Sep-2000 Feb-2002	Sep-2000 Feb-2002	U.S. Technology Bubble
Peak **Trough**	Aug-2004 Feb-2005	**Apr-2004** **Dec 2004**	Oil Price Hikes
Peak **Trough**	July-2008 Feb-2009	**Jan-2008** Mar-2009	Sub-prime Mortgage Crisis

Note: CCI refers to Composite Coincidence Index developed by DOSM.

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