MINISTRY OF ECONOMY
DEPARTMENT OF STATISTICS MALAYSIA

EARLY SIGNALS ON ECONOMIC DIRECTION PRIOR TO GDP

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INTRODUCTION

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1. An economic crisis is a significant and sudden disruption in economic stability.
2. Economic crises are often characterised by a sharp decline in economic activity, financial instability, and can lead to negative social consequences.
3. These crises can be triggered by many factors and may lead to big implications for both national and global economies.
4. One of the criteria to achieve sustainable economy is by having stability in macro-economy Jackson, T. (2009).
5. To secure stability in macro-economy, Malaysia's Government must make sure that any possible disruption to the country's economy shall be managed as soon as possible.
6. Therefore, anticipating these crises can help mitigate the adverse impact with informed policy decision so as to safeguard the economy from severe downturn.
7. In this regard, Leading Index (LI) is adopted in this study to obtain early signals on the economic direction in the near term.

METHODOLOGY

METHODOLOGY

COMPOSITE INDEX

The compilation of Malaysia Economic Indicators involves various economic indicators, then categorising them based on their behaviour either “lead” or “coincide” or “lag” or disqualified before combining them into a Composite Index. Hence, there are three indices in Composite Index namely Leading, Coincident and Lagging.

LEADING INDEX

The LI forecasts the state of the economy as a whole in the coming months. The indicator reveals the direction of the economy. A continuous decrease in the LI growth rate is one among the first indicators that an ongoing expansion may start to slow down. This indicator includes elements that, on average, "lead the economy".

METHODOLOGY

COMPONENTS

TYPES OF INDEXES

Composite Index
Combine components

Leading Index (LI)
Measures **anticipations of the overall economic activity in the months ahead**

Coincident Index (CI)
Comprehensive measure of the **overall current economic performance**

Lagging Index (LG)
Validate the signal of the LI and CI

Diffusion Index
Assist in making decision

Leading Index (LI)

Coincident Index (CI)

LEADING INDEX

- Real Money Supply, M1
- Bursa Malaysia Industrial Index
- Real Import of Semi Conductors
- Real Import of Basic Precious & Other Non-ferrous Metal
- Number of Housing Units Approved
- Expected Sales Value, Manufacturing
- Number of New Companies Registered

COINCIDENT INDEX

- Total Employment, Manufacturing
- Real Salaries & Wages, Manufacturing
- Industrial Production Index
- Real Contributions, EPF
- Capacity Utilisation, Manufacturing
- Volume Index of Retail Trade

METHODOLOGY

Selection of each component/data for the Composite Index is based on the guideline in the Business Cycle Indicators Handbook, namely;

1 Conformity to business cycle
The selected data series **must conform to the business cycle**

2 Consistent timing
The data series must exhibit **a consistent timing pattern over time** as leading, coincident or lagging indexes

3 Economic significant
The selected data series **must significantly contribute to the economy**

4 Statistical adequacy
Data must be **collected and processed in a statistically reliable manner**

5 Smoothness
The month to month movements of the data series must be **not too erratic**

6 Promptness
The selected components must be **timely, accurate and updated** to contribute to the current analysis

COMPILATION OF THE COMPOSITE INDEX

Composite Index

1. Month-on-month changes (symmetric percent change formula) for each component

$$y_{j,t} = 200\ x\ \frac{(Y_{j,t} - Y_{j,t-1})}{(Y + Y_{j,t-1})} \text{ for } t = 0, 1, 2, \dots .T$$

2. Standardization/normalization factor for each component

$$S_j = \frac{\sum_j |y_{j,t}|}{T}$$

3. Standardized month-on-month for each component

$$c_t = \frac{\sum_j w_j y_{j,t}}{F_k} \text{ for } t = 0, 1, 2, \dots .T$$

4. Sum the components' adjusted month-on-month

$$w_j = \frac{\beta_j}{\sum_j \beta_j}, \text{ where } \beta_j = \frac{1}{S_j}$$

5. Level of the composite index

$$NDX_0 = 100, \text{ and}$$

$$NDX_t = NDX_{t-1} \frac{(200 + c_t)}{200 - c_t}, \text{ for } t = 0, 1, 2, \dots .T$$

COMPILATION OF THE COMPOSITE INDEX

Index Standardization

1. Calculate average absolute symmetrical percent change;

$$Z_k = \frac{(\Sigma_t |c_t|)}{T} \text{ for } t = 0, 1, 2, \ldots . T$$

1. Compute the index standardization factor;

$$F_k = \frac{Z_k}{Z_{primary}}$$

2. The set of LI, CI and LG uses the CI as the primary index, so the Fk values for the LI, CI and LG indexes are;

$$F_{LI} = \frac{Z_{LI}}{Z_{CI}},\ F_{LG} = \frac{Z_{LG}}{Z_{CI}}, \text{ and } F_{CI} = 1$$

Index Rebasing

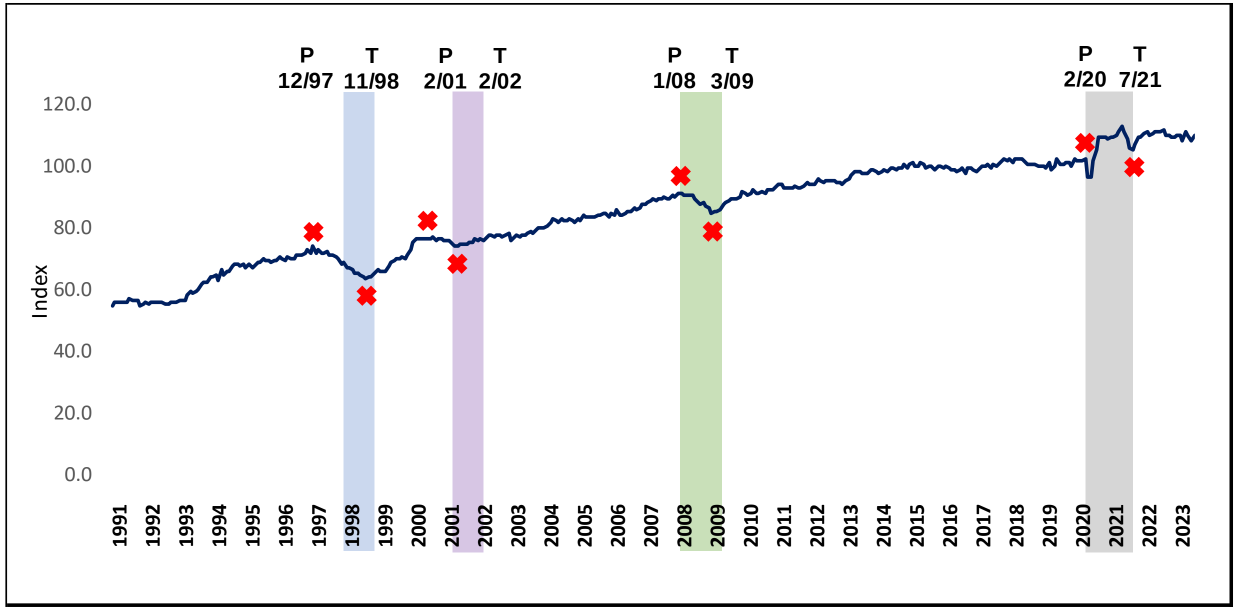
As a final step, each index is rescaled so that its average value equals 100 in the desired base year;

$$NDX_{t,rebased} = 100\left(\frac{NDX_t}{BASE}\right) \text{ for } t = 0, 1, 2, \ldots . T$$

RESULTS

RESULTS

Chart 1: Leading Index (2015=100), January 1991 to May 2023 and Business Cycle

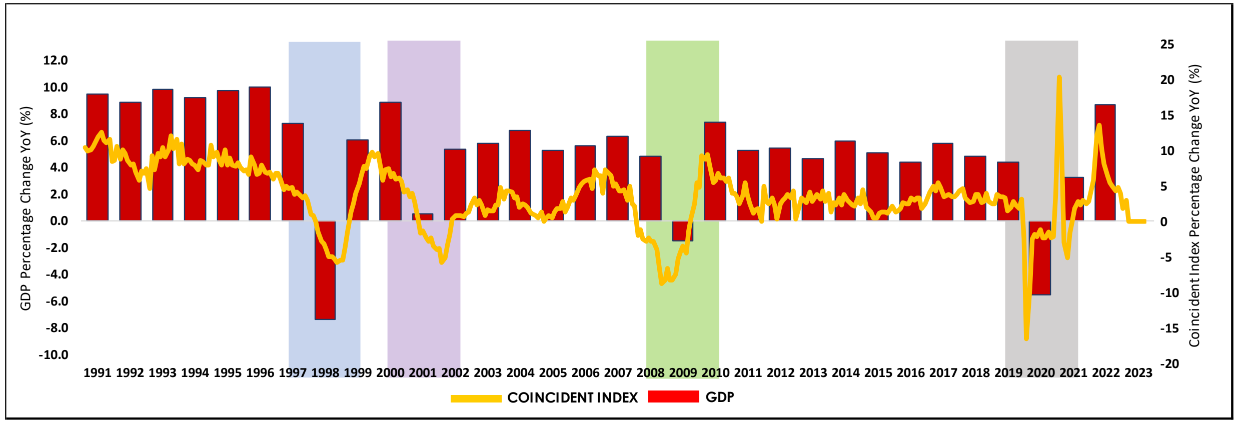


As seen in Chart 1, the LI offers an early warning for each of the economic crises. Based on prior economic behaviour, the LI can anticipate the :

1. 1997/1998 Asian financial crisis three months in advance,
2. 2000/2001 dot-com crisis ten months in advance,
3. 2008/2009 subprime and Eurozone crises two months in advance
4. COVID-19 health crisis 5 months in advance.

The growth of GDP for that year, would confirm the forecast later.

Chart 2 : Coincident Index and GDP growth, 1991 to 2022



- Focusing on the latest crisis, the breakout of the COVID19 pandemic, has exacerbated the economic outlook.
- The implementation of Movement Control Orders (MCO) to restrict pandemic transmission has subsequently a direct influence on Malaysia's economic activity.
- According to the Malaysian Economic Indicators: Leading, Coincident, and Lagging Index April 2020, business closures in April 2020 weigh down Malaysia's economic scenario, as indicated by a year-on-year drop in CI to negative 19.3 per cent, down from 3.6 per cent in March 2020.
- In terms of annual LI, the index fell further to -5.5 per cent in April 2020, compared to -3.6 per cent in March 2020. Since October 2019, LI has provided an early warning of an impending economic downturn.
- Since then, the economy has begun to slow down due to global trade tensions, and the downturn has intensified with the onset of COVID19.

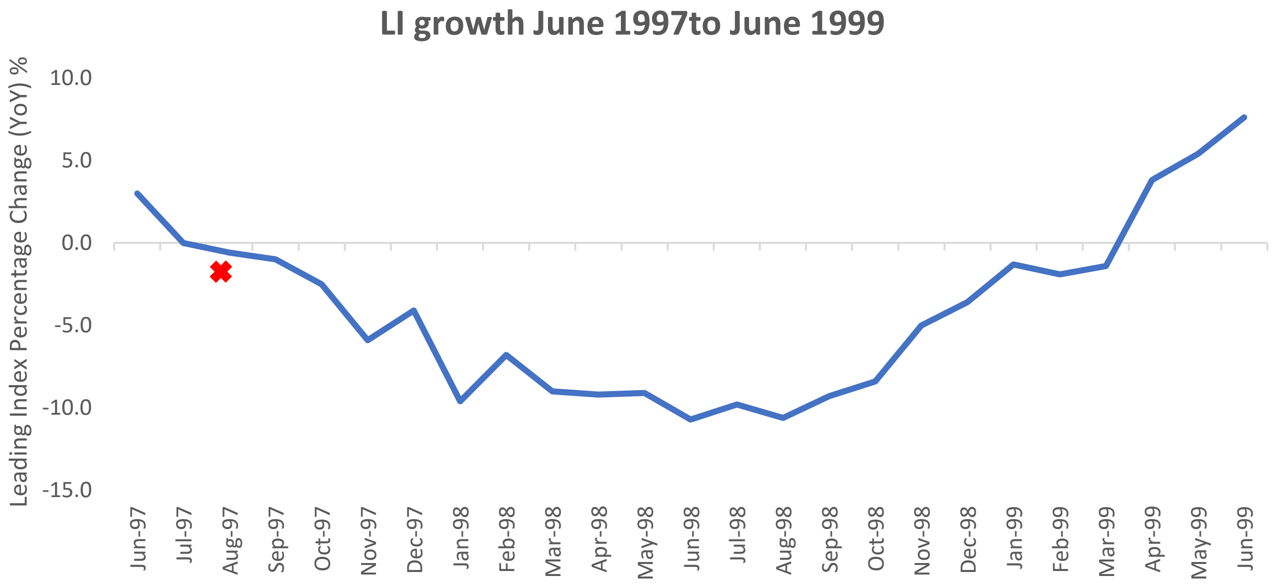
DISCUSSION & CONCLUSION

DISCUSSION & CONCUSION

Malaysia's quick action to address economic challenges

1997/1998

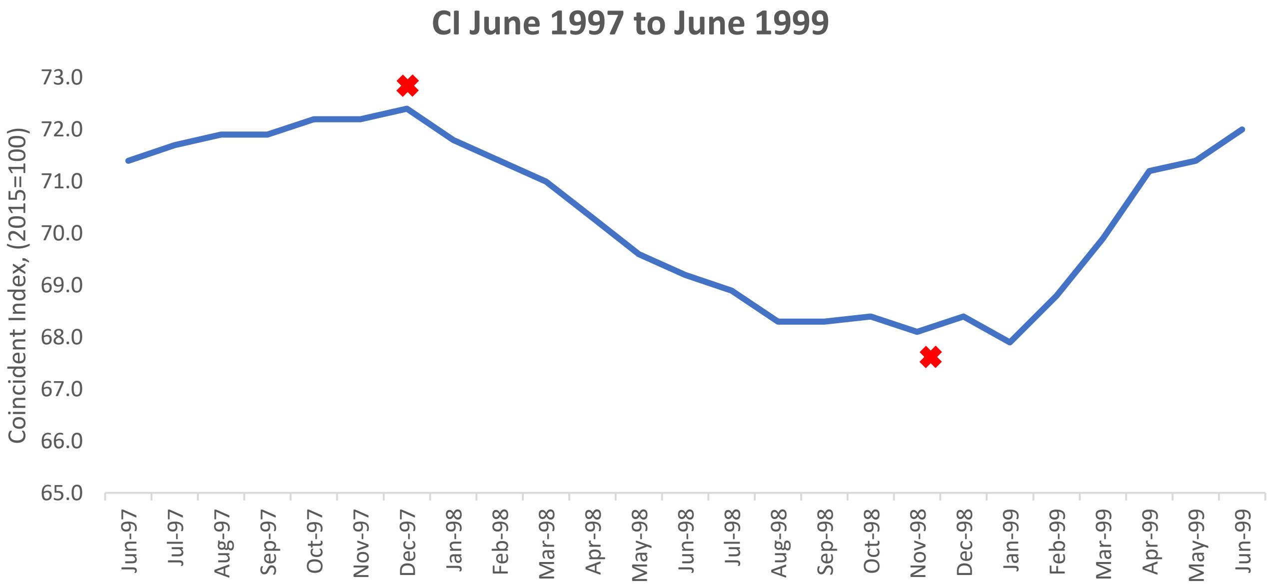
- The Malaysian economy suffered a great deal in 1997–1998 as a result of the Asian financial crisis.
- The Gross Domestic Product (GDP) of Malaysia, which measures the country's economic performance, decreased from 6.1 per cent in the fourth quarter of 1997 to a negative 11.2 per cent in the fourth quarter of 1998.
- The LI gave a warning by foreseeing negative growth beginning in August 1997.
- The LI's downward growth trend persisted in 1998.



DISCUSSION & CONCUSION

1997/1998

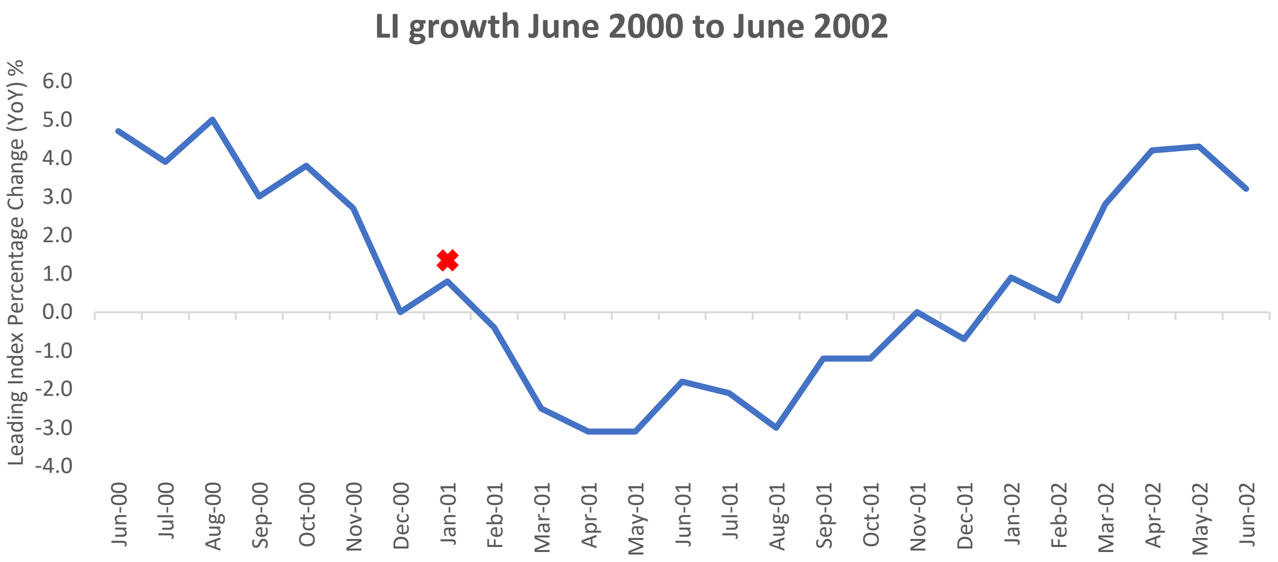
- The peak of the CI at 72.4 points in December 1997 signaled the start of the Malaysian economic slump, which lasted for a full year and ended with a trough of the CI at 68.1 points in November 1998.
- Malaysia responded by establishing the National Economic Action Council (MTEN) on 7 June 1998 to re-stimulate the economy.
- MTEN then prepared a paper titled the National Economic Recovery Plan, which aims to stabilise the Ringgit, restore market confidence, maintain financial market stability, strengthen the economic base, continue the equity agenda, and revitalise sectors that have been severely impacted by the economic crisis.
- The formation of “Syarikat Pengurusan Dana harta Nasional Bhd” (Danaharta), “Syarikat Pengurusan Aset Negara”, “Danamodal Nasional Bhd” (Danamodal), and “Jawatankuasa Penstruktruran Hutang Korporat” (CDRC) are among the actions Ibrahim, M. A. (2019).

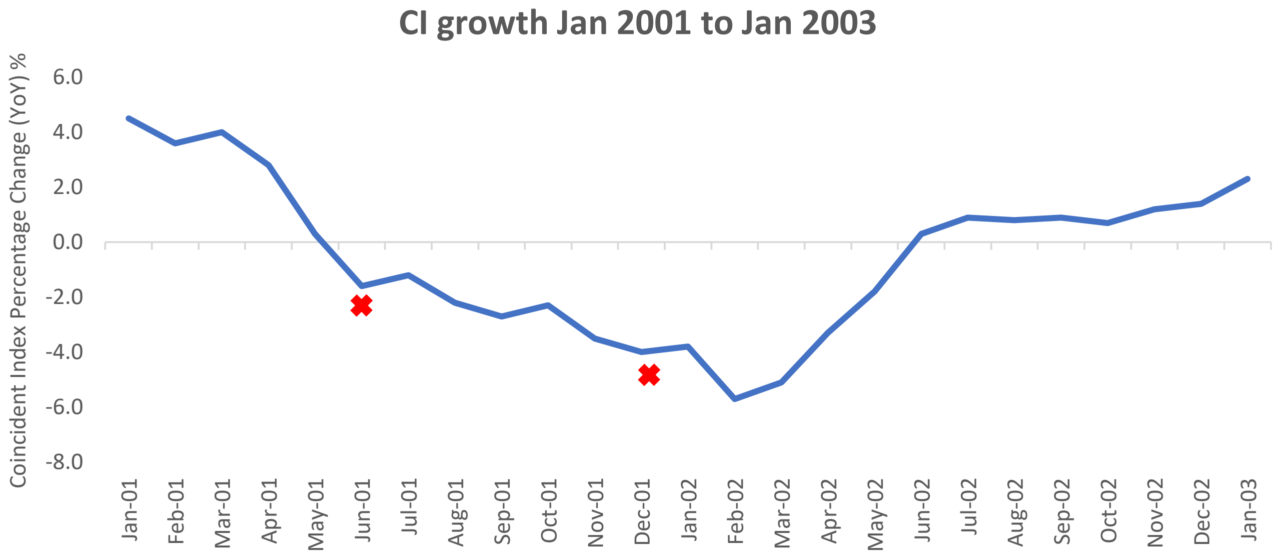


DISCUSSION & CONCUSION

2000/2001

- The 2000–2001 Malaysia economic downturn began in November 2000 and lasted until December 2001 attributed by the world economic growth slowdown and the decline of the global electronics industry.
- The LI had warned by projecting negative growth from the beginning of 2001.
- CI recorded negative growth starting in June 2001, and the trends continued for that year, suggesting that a recession has occurred, but due to concerted measures since the financial crisis that focused growth from domestic sources and stimulation to internal demand helped Malaysia record an annual GDP growth for 2001 of 0.5 per cent.

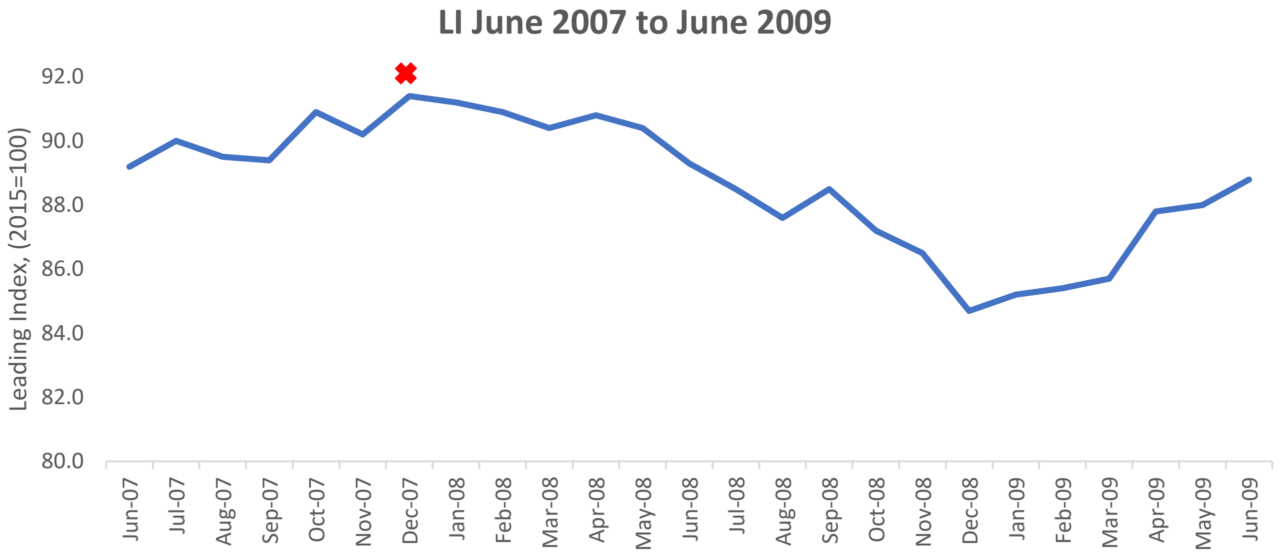


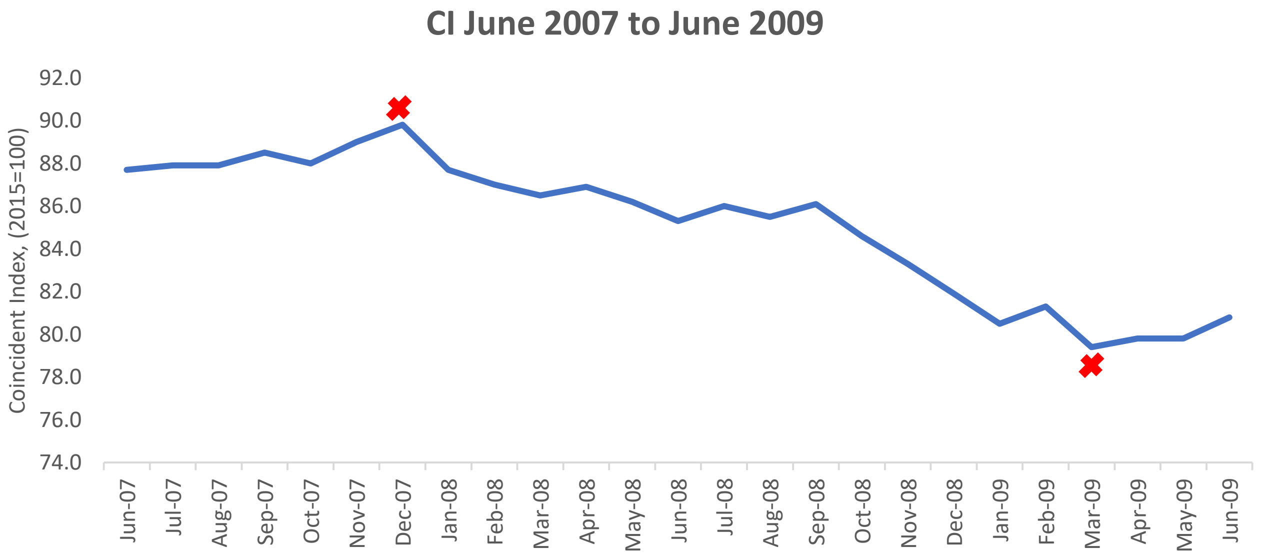


DISCUSSION & CONCUSION

2008/2009

- Another scenario was Malaysia's economic decline, which was precipitated by the infamous housing price bubble in the United States, which had an impact on Malaysia.
- Malaysia's GDP fell to minus 5.8 per cent in the first quarter of 2009, down from 7.6 per cent in the first quarter of 2008.
- In line with the crisis, the LI provided an one month earlier signal with its peak in December 2007 with 91.4 points.
- The crisis began in January 2008, as indicated by a CI of 87.7 points, and lasted more than a year, ending in March 2009 with a CI of 79.4 points.
- In general, the LI forecasts the direction of Malaysia's economic movement four to six months in advance.
- The global financial crisis began when one of the world's largest investment banks went bankrupt in September 2008.
- The government took proactive actions and stabilisation measures by introducing an economic stimulus package to reduce the effects of the global economic slowdown such as fiscal measures, monetary policy easing and comprehensive measures.

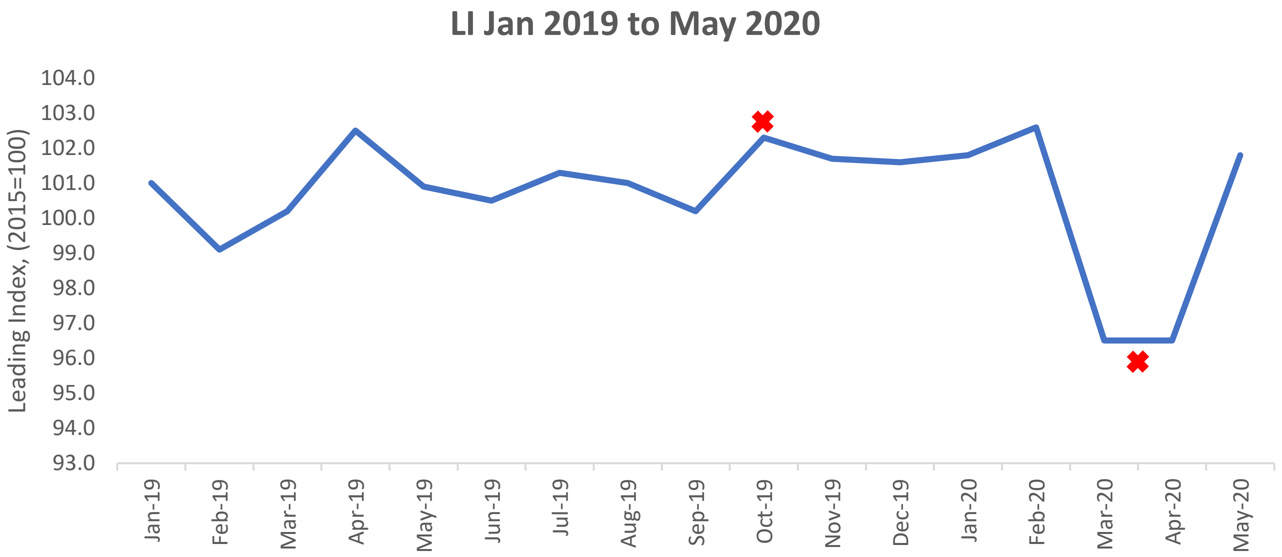




DISCUSSION & CONCUSION

2020/2021

- Without a question, the pandemic's mobility limitations harm both Malaysia's economy and the economies of the rest of the world.
- As illustrated in Chart 1, the LI for October 2019 revealed an early indicator of peak by hitting 102.3 points, the highest level since 2018.
- As the consequences of the COVID-19 epidemic on the Malaysian economy deepen, the LI for March 2020 reached an all-time low, reaching 96.5 points.
- Given the declining performance of LI from November 2019 to April 2020, the economy is expected to decrease in an average of four to six months from the reference months.
- The second quarter of 2020 saw Malaysia's GDP contracted to 16.9 per cent, the lowest growth rate since the nation was affected by the Asian Financial Crisis in 1998.
- Important industries have been impacted, including the travel and tourism, retail, and other services industries.



DISCUSSION & CONCUSION

2020/2021

- Additionally, supply chains and company operations were affected, and consumer confidence has fallen.
- The likelihood of an economic rebound from a worldwide trade conflict in 2019 has been dampened by the COVID-19 outbreak.
- The CI recorded a negative growth of -16.5 per cent after the Movement Control Order was implemented in Malaysia.
- Nevertheless, in the first quarter of 2021, the government's recovery stimulus with the opening of more than 90 per cent of the economic sector and social activities, as well as a high vaccination rate has spurred economic growth and the CI recorded a growth of 20.5 per cent.

DISCUSSION & CONCUSION

1. The potential of LI to forecast the direction of future economic movement is demonstrated in the Malaysian situation, where it can provide an advance warning in four to six months on average.

2. In addressing economic challenges, both short-term and long-term recovery measures are necessary to get the economy back on track.

3. Localised short-term policies, combined with global long-term policies, will improve production, domestic consumption and people's confidence.

THANK YOU

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