



PENUNJUK EKONOMI MALAYSIA

INDEKS PELOPOR, SERENTAK & SUSULAN

MALAYSIA ECONOMIC INDICATORS

LEADING, COINCIDENT & LAGGING INDICES



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2008

SEPTEMBER

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JABATAN PERANGKAAN MALAYSIA
DEPARTMENT OF STATISTICS, MALAYSIA

INDEKS PELOPOR, SERENTAK DAN SUSULAN

LEADING, COINCIDENT AND LAGGING INDICES

SEPTEMBER 2008
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Indeks Serentak (IS), mengukur aktiviti ekonomi semasa, menurun sebanyak 0.1% dalam bulan September 2008 dengan catatan pada 123.6 mata. Perubahan negatif dicatatkan oleh Indeks Pengeluaran Perindustrian (-0.3%), gaji & upah benar (-0.2%) dan nilai jualan benar dalam sektor pembuatan (-0.1%). Kadar pertumbuhan enam bulan terlicin IS kekal positif pada 0.2% pada bulan semasa.

Indeks Pelopor (IP) meningkat 0.8% untuk mencapai 158.8 mata dalam bulan September 2008 berbanding 157.5 mata pada bulan sebelumnya. Dua daripada lapan komponen indeks yang sedia ada mencatatkan peningkatan, iaitu, penawaran wang benar, M1 (0.8%) dan bilangan unit kediaman yang diluluskan (0.8%). Kadar pertumbuhan enam bulan terlicin IP merekodkan pertumbuhan sebanyak 1.2% dalam bulan semasa.

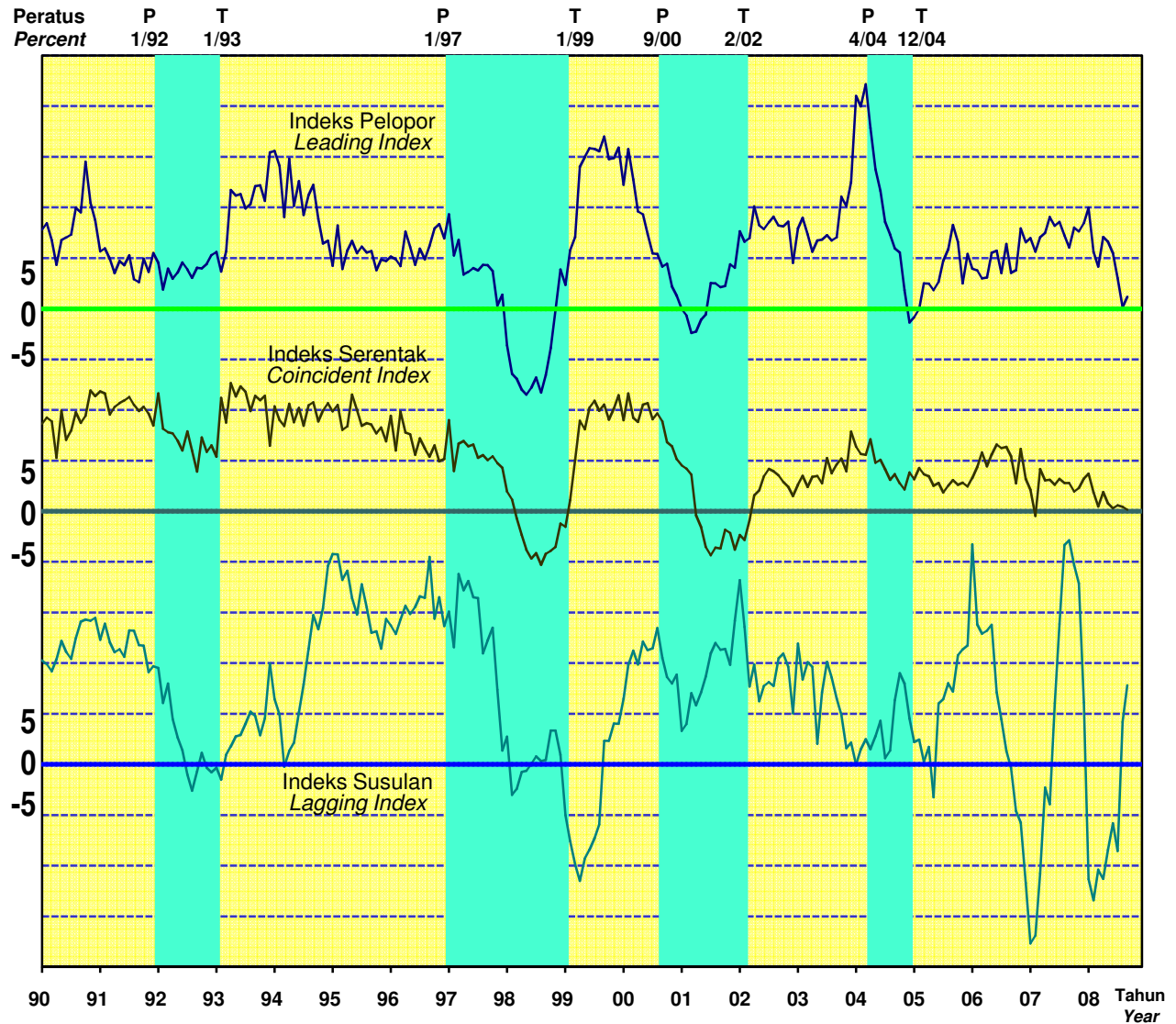
The Coincident Index (CI), a measure of current economic activity, decreased by 0.1% in September 2008 registering at 123.6 points. Negative change was recorded by Index of Industrial Production (-0.3%), real salaries & wages (-0.2%) and real sales in manufacturing sector (-0.1). The six-month smoothed growth rate of CI remain positive at 0.2% in the current month.

The Leading Index (LI) moved up 0.8% to reach 158.8 points in September 2008 as compared to 157.5 points in the previous month. Two out of the eight existing components posted an increase, namely, real money supply, M1 (0.8%) and number of housing permits approved (0.8%). The six-month smoothed growth rate of LI recorded an increase of 1.2% in the current month.

Arah aliran terkini kadar pertumbuhan enam bulan terlicin IP menunjukkan ekonomi Malaysia dijangka mengekalkan pertumbuhan perlahan untuk bulan-bulan seterusnya.

The recent trend of the LI six-month smoothed growth rate indicates that the Malaysian economy is expected to sustain its slow growth in the month ahead.

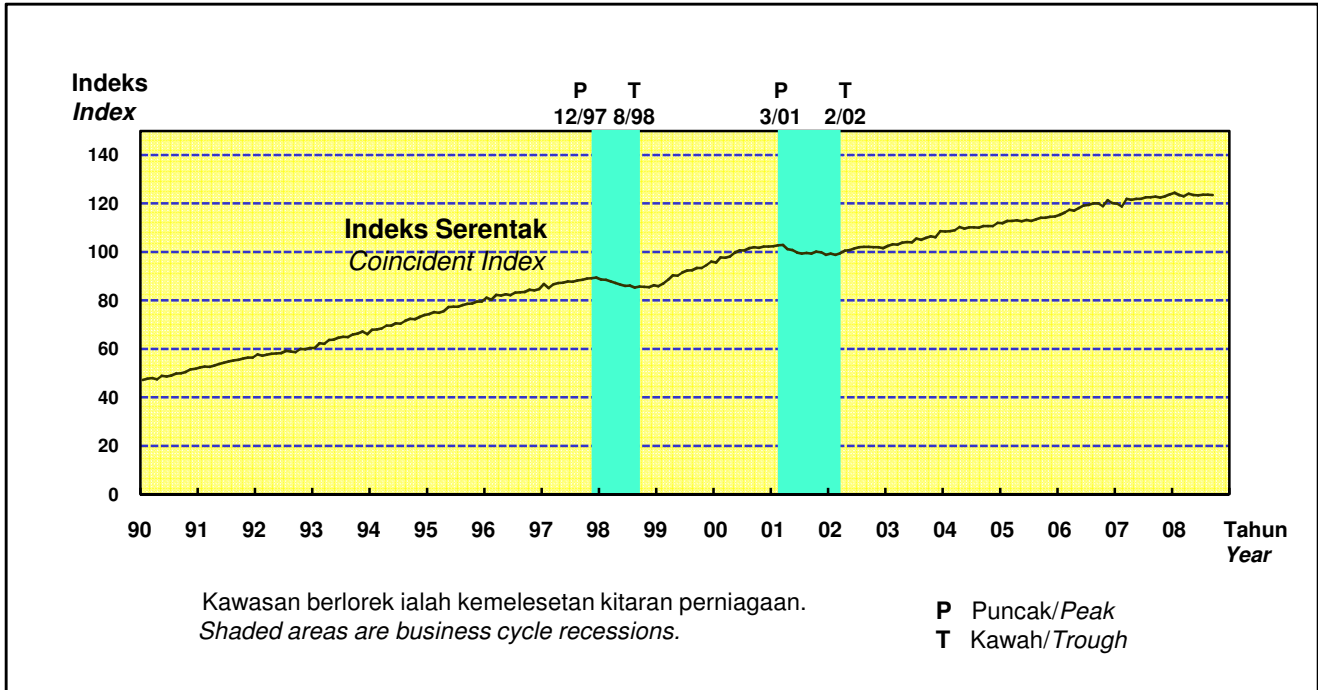
Carta 1 : Kadar Pertumbuhan Enam-Bulan Terlicin bagi Indeks Pelopor, Serentak dan Susulan, 1990-2008
Chart 1 : Six-Month Smoothed Growth Rates of the Leading, Coincident and Lagging Indices, 1990-2008



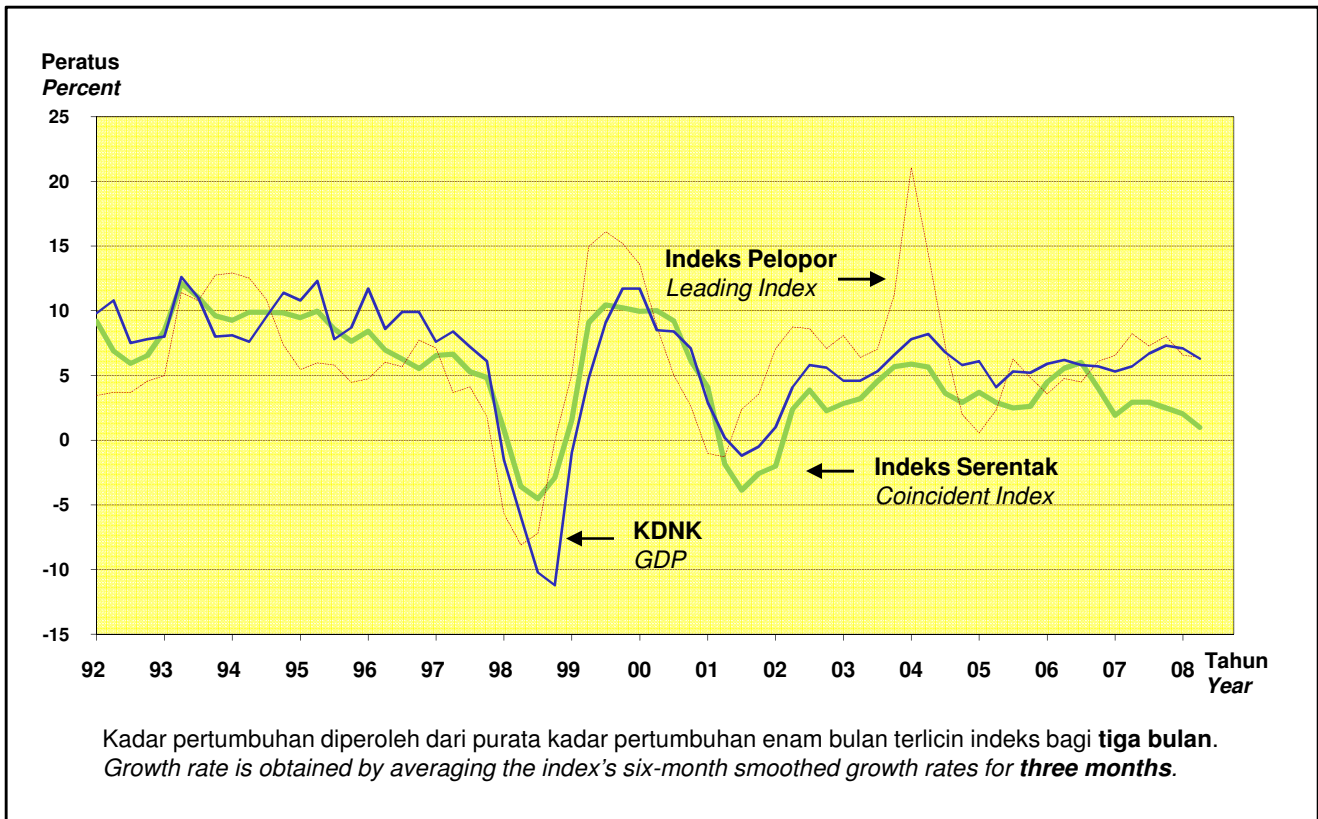
Kawasan berlorek ialah kemelesetan kitaran pertumbuhan. Kadar pertumbuhan dinyatakan sebagai kadar tahunan terkompoun berasaskan nisbah indeks bulan semasa kepada purata dua belas bulan terdahulu.

Shaded areas are growth cycle recessions. The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding twelve months.

Carta 2 : Indeks Serentak dan Kitaran Perniagaan Malaysia, 1990-2008
Chart 2 : The Coincident Index and Malaysia Business Cycle Turns, 1990-2008



Carta 3 : Kadar Pertumbuhan Indeks Serentak, Indeks Pelopor dan Keluaran Dalam Negeri Kasar, 1992-2008
Chart 3 : Growth Rates of Coincident Index, Leading Index and Gross Domestic Product, 1992-2008



Jadual 1 : Sumbangan Setiap Komponen terhadap Peratus Perubahan Indeks daripada Bulan Sebelumnya
Table 1 : The Contribution of Each Component to the Percent Change in the Index from the Previous Month

| Komponen Indeks Serentak <u>Coincident Index Components</u> | Julai 2008 <u>July 2008</u> | Ogos 2008 <u>August 2008</u> | September 2008 <u>September 2008</u> |
|--|--|---|---|
| 1. Indeks Pengeluaran Perindustrian <i>Index of Industrial Production</i> | -0.1 | -0.2 | -0.3 |
| 2. Import Kasar Benar <i>Real Gross Imports</i> | 0.5 | -0.4 | 0.0 |
| 3. Gaji & Upah Benar, Pembuatan <i>Real Salaries & Wages, Manufacturing</i> | -0.1 | -0.1 | -0.2 |
| 4. Jumlah Guna tenaga, Pembuatan <i>Total Employment, Manufacturing</i> | -0.1 | 0.2 | 0.3 |
| 5. Nilai Jualan Benar, Pembuatan <i>Real Sales, Manufacturing</i> | 0.1 | 0.2 | -0.1 |
| 6. Nilai Caruman Benar, KWSP ^r <i>Real Contributions, EPF</i> | -0.1 | 0.2 | 0.1 |
| Faktor Penyelarasan Arah Aliran <i>Trend Adjustment Factor</i> | 0.1 | 0.1 | 0.1 |
| Peratus Perubahan <u>Percentage Change</u> | 0.3 | 0.0 | -0.1 |
| Komponen Indeks Pelopor <u>Leading Index Components</u> | Julai 2008 <u>July 2008</u> | Ogos 2008 <u>August 2008</u> | September 2008 <u>September 2008</u> |
| 1. Penawaran Wang Benar, M1 <i>Real Money Supply, M1</i> | -0.2 | -0.3 | 0.8 |
| 2. Indeks Perusahaan Bursa Malaysia <i>Bursa Malaysia Industrial Index</i> | -0.3 | -0.1 | -0.1 |
| 3. Jumlah Dagangan Benar : Lapan Negara Utama <i>Real Total Trade : Eight Major Trading Partners</i> | 0.5 | -0.2 | 0.0 |
| 4. IHP Perkhidmatan, Kadar Pertumbuhan (Songsang) <i>CPI for Services, Growth Rate (Inverted)</i> | -0.2 | -0.1 | -0.1 |
| 5. Indeks Harga Bahan Perindustrian, Kadar Pertumbuhan <i>Industrial Material Price Index, Growth Rate</i> | -0.1 | -0.2 | -0.1 |
| 6. Nisbah Harga terhadap Kos Seunit Buruh, Pembuatan <i>Ratio of Price to Unit Labour Cost, Manufacturing</i> | -0.3 | -0.2 | -0.2 |
| 7. Bilangan Unit Kediaman Diluluskan <i>Number of Housing Permits Approved</i> | -0.6 | -0.1 | 0.8 |
| 8. Bilangan Syarikat Baru Didaftar <i>Number of New Companies Registered</i> | 0.3 | -0.1 | -0.4 |
| Faktor Penyelarasan Arah Aliran <i>Trend Adjustment Factor</i> | 0.1 | 0.1 | 0.1 |
| Peratus Perubahan <u>Percentage Change</u> | -0.8 | -1.2 | 0.8 |
| Komponen Indeks Susulan <u>Lagging Index Components</u> | Julai 2008 <u>July 2008</u> | Ogos 2008 <u>August 2008</u> | September 2008 <u>September 2008</u> |
| 1. Kadar Faedah Wang Panggilan 7-hari <i>7-day Call Money, Rate</i> | 0.0 | 0.0 | 0.0 |
| 2. Lebihan Pinjaman Benar Sektor Swasta <i>Real Excess Lending to Private Sector</i> | -2.8 | 5.2 | -0.7 |
| 3. Bilangan Projek Pelaburan Baru Diluluskan <i>Number of Investment Projects Approved</i> | -0.1 | -0.2 | 0.2 |
| 4. Bilangan Majikan Gagal Mencarum KWSP (Songsang) ^r <i>Number of Defaulters, EPF (Inverted)</i> | 0.5 | 1.8 | 1.3 |
| 5. Bilangan Kenderaan Baru Didaftar <i>Number of New Vehicles Registered</i> | 0.5 | -0.2 | 0.5 |
| Faktor Penyelarasan Arah Aliran <i>Trend Adjustment Factor</i> | 0.1 | 0.1 | 0.1 |
| Peratus Perubahan <u>Percentage Change</u> | -1.8 | 6.7 | 1.4 |

Nota/Notes :

^r Data bagi Nilai Caruman Benar dan Bilangan Majikan Gagal Mencarum, KWSP bagi bulan Julai dan Ogos 2008 dipinda berdasarkan data terkini yang diperoleh daripada Kumpulan Wang Simpanan Pekerja.
Data for Real Contributions and Number of Defaulters, EPF for July and August 2008 has been revised due to latest data from Employees Provident Fund.

Jadual 2 : Indeks Serentak, Pelopor dan Susulan, dan Kadar Pertumbuhan, 1999 - 2008 (samb.)
Table 2 : The Coincident, Leading and Lagging Indices, and Growth Rates, 1999 - 2008 (cont'd)

| Tempoh <i>Period</i> | Indeks Serentak <i>Coincident Index</i> | | Indeks Pelopor <i>Leading Index</i> | | Indeks Susulan <i>Lagging Index</i> | | |
|-------------------------|--|---|--|---|--|---|-------|
| | 2000=100 | Kadar Pertumbuhan <i>Growth Rates</i> | 2000=100 | Kadar Pertumbuhan <i>Growth Rates</i> | 2000=100 | Kadar Pertumbuhan <i>Growth Rates</i> | |
| 1999 | Jan. | 85.9 | -1.5 | 84.0 | 2.3 | 93.4 | -5.0 |
| | Feb. | 86.9 | 1.1 | 85.4 | 5.8 | 91.8 | -7.6 |
| | Mac | 88.6 | 5.1 | 86.1 | 7.1 | 90.4 | -9.9 |
| | April | 90.4 | 8.9 | 89.3 | 14.0 | 89.2 | -11.5 |
| | Mei | 90.3 | 8.1 | 90.3 | 15.0 | 89.9 | -9.3 |
| | Jun | 91.6 | 10.2 | 91.4 | 15.8 | 89.9 | -8.4 |
| | Julai | 92.4 | 10.9 | 92.2 | 15.8 | 90.0 | -7.3 |
| | Ogos | 92.5 | 9.9 | 93.0 | 15.6 | 90.2 | -5.9 |
| | Sept. | 93.4 | 10.5 | 94.7 | 17.0 | 93.9 | 2.3 |
| | Okt. | 93.4 | 9.1 | 94.9 | 14.8 | 93.7 | 2.3 |
| | Nov. | 94.6 | 10.2 | 96.1 | 14.9 | 94.2 | 4.0 |
| | Dis. | 96.0 | 11.5 | 97.7 | 15.9 | 93.9 | 4.0 |
| 2000 | Jan. | 95.7 | 9.0 | 97.2 | 12.3 | 94.9 | 6.5 |
| | Feb. | 97.8 | 11.6 | 100.0 | 15.8 | 96.6 | 9.8 |
| | Mac | 97.6 | 9.2 | 99.9 | 12.8 | 97.7 | 11.2 |
| | April | 98.2 | 8.8 | 99.5 | 9.6 | 97.7 | 9.9 |
| | Mei | 99.7 | 10.5 | 100.3 | 9.3 | 99.5 | 12.1 |
| | Jun | 100.6 | 10.7 | 100.2 | 7.4 | 100.0 | 11.3 |
| | Julai | 100.6 | 9.1 | 100.0 | 5.5 | 101.0 | 11.5 |
| | Ogos | 101.6 | 9.7 | 100.6 | 5.4 | 102.9 | 13.5 |
| | Sept. | 102.0 | 8.9 | 100.6 | 4.2 | 102.6 | 10.5 |
| | Okt. | 101.7 | 6.8 | 101.3 | 4.4 | 102.4 | 8.6 |
| | Nov. | 102.2 | 6.4 | 100.6 | 2.2 | 102.8 | 8.0 |
| | Dis. | 102.2 | 5.1 | 100.5 | 1.3 | 104.0 | 8.9 |
| 2001 | Jan. | 102.4 | 4.5 | 100.0 | 0.0 | 102.0 | 3.3 |
| | Feb. | 102.9 | 4.2 | 99.9 | -0.7 | 102.9 | 4.0 |
| | Mac | 103.0 | 3.6 | 99.0 | -2.4 | 105.1 | 7.0 |
| | April | 101.2 | -0.4 | 99.0 | -2.2 | 105.1 | 5.8 |
| | Mei | 100.8 | -1.6 | 99.6 | -1.1 | 106.4 | 7.1 |
| | Jun | 99.8 | -3.5 | 99.8 | -0.6 | 107.8 | 8.7 |
| | Julai | 99.3 | -4.3 | 101.4 | 2.5 | 109.8 | 11.0 |
| | Ogos | 99.6 | -3.6 | 101.6 | 2.5 | 111.1 | 12.0 |
| | Sep. | 99.4 | -3.7 | 101.4 | 2.1 | 111.4 | 11.3 |
| | Okt. | 100.2 | -1.8 | 101.6 | 2.2 | 112.3 | 11.4 |
| | Nov. | 99.9 | -2.1 | 102.7 | 4.4 | 112.3 | 9.8 |
| | Dis. | 98.8 | -3.8 | 102.7 | 4.0 | 115.5 | 14.2 |

Jadual 2 : Indeks Serentak, Pelopor dan Susulan, dan Kadar Pertumbuhan, 1999 - 2008 (samb.)
Table 2 : The Coincident, Leading and Lagging Indices, and Growth Rates, 1999 - 2008 (cont'd)

| Tempoh <i>Period</i> | Indeks Serentak <i>Coincident Index</i> | | Indeks Pelopor <i>Leading Index</i> | | Indeks Susulan <i>Lagging Index</i> | |
|--|--|---|--|---|--|---|
| | 2000=100 | Kadar Pertumbuhan <i>Growth Rates</i> | 2000=100 | Kadar Pertumbuhan <i>Growth Rates</i> | 2000=100 | Kadar Pertumbuhan <i>Growth Rates</i> |
| 2002 Jan. Feb. Mac April Mei Jun Julai Ogos Sept. Okt. Nov. Dis. | 99.3 | -2.3 | 104.8 | 7.6 | 118.7 | 18.2 |
| | 98.8 | -2.8 | 104.7 | 6.6 | 117.7 | 13.6 |
| | 99.5 | -0.9 | 105.3 | 7.0 | 115.7 | 7.7 |
| | 100.6 | 1.6 | 107.5 | 10.1 | 117.8 | 9.9 |
| | 100.8 | 2.1 | 107.3 | 8.3 | 116.8 | 6.2 |
| | 101.5 | 3.5 | 107.8 | 7.9 | 118.6 | 7.7 |
| | 102.1 | 4.2 | 108.8 | 8.6 | 119.8 | 8.1 |
| | 102.2 | 3.9 | 109.7 | 9.1 | 120.4 | 7.8 |
| | 102.2 | 3.5 | 110.0 | 8.2 | 122.9 | 10.5 |
| | 102.1 | 2.9 | 110.7 | 8.1 | 124.2 | 10.9 |
| | 102.0 | 2.4 | 111.7 | 8.6 | 124.4 | 9.6 |
| | 101.6 | 1.5 | 110.2 | 4.5 | 122.6 | 5.1 |
| 2003 Jan. Feb. Mac April Mei Jun Julai Ogos Sept. Okt. Nov. Dis. | 102.5 | 2.6 | 112.8 | 7.9 | 127.5 | 11.9 |
| | 103.2 | 3.5 | 114.1 | 9.0 | 126.1 | 8.4 |
| | 103.0 | 2.4 | 113.9 | 7.3 | 127.9 | 10.1 |
| | 103.8 | 3.4 | 113.7 | 5.6 | 128.7 | 9.6 |
| | 104.2 | 3.5 | 114.9 | 6.7 | 124.7 | 2.0 |
| | 104.1 | 2.8 | 115.6 | 6.8 | 128.7 | 7.1 |
| | 105.6 | 5.3 | 116.5 | 7.3 | 131.5 | 10.1 |
| | 105.1 | 3.7 | 116.9 | 6.7 | 131.5 | 8.6 |
| | 105.8 | 4.6 | 117.7 | 7.1 | 131.1 | 6.5 |
| | 106.5 | 5.2 | 120.7 | 11.1 | 130.7 | 4.9 |
| | 106.2 | 3.9 | 121.1 | 10.2 | 129.1 | 1.6 |
| | 108.7 | 7.9 | 123.3 | 12.5 | 129.8 | 2.2 |
| 2004 Jan. Feb. Mac April Mei Jun Julai Ogos Sept. Okt. Nov. Dis. | 108.5 | 6.4 | 129.5 | 21.0 | 128.9 | 0.0 |
| | 108.6 | 5.7 | 130.4 | 20.0 | 130.1 | 1.5 |
| | 109.0 | 5.6 | 133.2 | 22.2 | 131.1 | 2.5 |
| | 110.4 | 7.1 | 132.4 | 17.9 | 130.7 | 1.5 |
| | 109.6 | 4.8 | 131.6 | 13.8 | 131.8 | 2.8 |
| | 110.2 | 5.1 | 131.7 | 11.6 | 133.4 | 4.3 |
| | 110.2 | 4.1 | 131.1 | 8.6 | 131.3 | 0.6 |
| | 110.0 | 3.1 | 131.6 | 7.3 | 131.8 | 1.4 |
| | 110.8 | 3.7 | 131.9 | 6.0 | 135.3 | 6.3 |
| | 110.7 | 2.8 | 132.9 | 5.5 | 137.4 | 9.0 |
| | 110.7 | 2.1 | 131.3 | 1.8 | 137.3 | 8.0 |
| | 112.0 | 3.8 | 129.9 | -1.4 | 135.6 | 4.5 |

Jadual 2 : Indeks Serentak, Pelopor dan Susulan, dan Kadar Pertumbuhan, 1999 - 2008 (samb.)
Table 2 : The Coincident, Leading and Lagging Indices, and Growth Rates, 1999 - 2008 (cont'd)

| Tempoh <i>Period</i> | Indeks Serentak <i>Coincident Index</i> | | Indeks Pelopor <i>Leading Index</i> | | Indeks Susulan <i>Lagging Index</i> | |
|--|--|---|--|---|--|---|
| | 2000=100 | Kadar Pertumbuhan <i>Growth Rates</i> | 2000=100 | Kadar Pertumbuhan <i>Growth Rates</i> | 2000=100 | Kadar Pertumbuhan <i>Growth Rates</i> |
| 2005 Jan. Feb. Mac April Mei Jun Julai Ogos Sept. Okt. Nov. Dis. | 111.9 | 3.2 | 130.9 | -0.8 | 134.5 | 2.2 |
| | 112.9 | 4.3 | 131.6 | 0.0 | 135.1 | 2.5 |
| | 112.9 | 3.7 | 133.4 | 2.5 | 134.0 | 0.3 |
| | 113.1 | 3.5 | 133.4 | 2.5 | 135.3 | 1.7 |
| | 112.8 | 2.5 | 133.1 | 1.8 | 132.0 | -3.2 |
| | 113.2 | 2.8 | 133.8 | 2.7 | 138.7 | 6.0 |
| | 112.9 | 1.8 | 135.4 | 4.7 | 139.5 | 6.5 |
| | 113.5 | 2.5 | 136.6 | 5.9 | 141.3 | 8.0 |
| | 114.1 | 3.1 | 138.7 | 8.3 | 141.6 | 7.2 |
| | 114.1 | 2.6 | 138.1 | 6.6 | 144.7 | 10.8 |
| | 114.5 | 2.8 | 135.7 | 2.5 | 145.7 | 11.3 |
| | 114.7 | 2.5 | 138.1 | 5.4 | 146.7 | 11.7 |
| 2006 Jan. Feb. Mac April Mei Jun Julai Ogos Sept. Okt. Nov. Dis. | 115.4 | 3.3 | 137.8 | 3.9 | 154.7 | 21.7 |
| | 116.3 | 4.4 | 138.2 | 3.8 | 151.0 | 13.8 |
| | 117.5 | 5.8 | 138.2 | 3.0 | 151.8 | 12.9 |
| | 117.1 | 4.4 | 138.7 | 3.1 | 153.6 | 13.2 |
| | 118.1 | 5.6 | 140.9 | 5.5 | 155.6 | 13.8 |
| | 119.2 | 6.6 | 141.7 | 5.7 | 152.7 | 7.1 |
| | 119.5 | 6.3 | 140.8 | 3.5 | 151.8 | 4.4 |
| | 120.1 | 6.4 | 143.4 | 6.4 | 150.3 | 1.3 |
| | 120.1 | 5.4 | 141.8 | 3.6 | 149.7 | -0.4 |
| | 119.0 | 2.8 | 142.3 | 3.8 | 146.9 | -4.6 |
| | 121.5 | 6.1 | 145.7 | 7.9 | 146.1 | -5.8 |
| | 120.2 | 3.2 | 145.6 | 6.6 | 141.1 | -11.7 |
| 2007 Jan. Feb. Mac April Mei Jun Julai Ogos Sept. Okt. Nov. Dis. | 120.0 | 2.1 | 146.5 | 7.0 | 135.4 | -17.7 |
| | 118.7 | -0.5 | 146.3 | 5.6 | 134.6 | -16.9 |
| | 121.9 | 4.1 | 148.0 | 7.1 | 138.6 | -10.8 |
| | 121.6 | 3.1 | 149.2 | 7.5 | 144.5 | -2.3 |
| | 122.0 | 3.1 | 151.3 | 9.1 | 142.5 | -3.9 |
| | 122.0 | 2.6 | 151.5 | 8.2 | 149.2 | 6.1 |
| | 122.6 | 3.2 | 152.7 | 8.6 | 154.7 | 13.9 |
| | 122.6 | 2.8 | 152.7 | 7.2 | 160.7 | 21.7 |
| | 122.8 | 2.8 | 152.6 | 6.1 | 161.9 | 22.1 |
| | 122.5 | 2.0 | 155.0 | 8.0 | 161.3 | 19.7 |
| | 123.0 | 2.3 | 155.9 | 7.6 | 161.3 | 17.9 |
| | 123.8 | 3.2 | 157.4 | 8.4 | 153.7 | 6.1 |

Jadual 2 : Indeks Serentak, Pelopor dan Susulan, dan Kadar Pertumbuhan, 1999 - 2008 (samb.)
Table 2 : The Coincident, Leading and Lagging Indices, and Growth Rates, 1999 - 2008 (cont'd)

| Tempoh <i>Period</i> | Indeks Serentak <i>Coincident Index</i> | | Indeks Pelopor <i>Leading Index</i> | | Indeks Susulan <i>Lagging Index</i> | |
|-------------------------|--|---|--|---|--|---|
| | 2000=100 | Kadar Pertumbuhan <i>Growth Rates</i> | 2000=100 | Kadar Pertumbuhan <i>Growth Rates</i> | 2000=100 | Kadar Pertumbuhan <i>Growth Rates</i> |
| 2008 Jan. | 124.4 | 3.7 | 159.6 | 10.0 | 140.4 | -11.3 |
| Feb. | 123.6 | 1.9 | 157.3 | 5.6 | 139.0 | -13.4 |
| Mac | 123.0 | 0.5 | 157.0 | 4.2 | 142.0 | -10.4 |
| April | 124.1 | 1.9 | 160.2 | 7.1 | 141.4 | -11.3 |
| Mei | 123.6 | 0.8 | 160.8 | 6.6 | 143.6 | -8.4 |
| Jun | 123.4 | 0.3 | 160.6 | 5.5 | 146.0 | -5.8 |
| Julai | 123.7 | 0.6 | 159.4 | 3.0 | 143.4 | -8.6 |
| Ogos | 123.7 | 0.4 | 157.5 | 0.1 | 152.9 | 4.2 |
| Sept. | 123.6 | 0.2 | 158.8 | 1.2 | 155.1 | 7.8 |

- Nota : (a) Semakan terhadap indeks biasanya adalah hasil daripada semakan terhadap punca data.
Note : Revisions to the indices are normally the results of revision to source data.
- (b) Semua perubahan merujuk kepada data nyah musim kecuali jika dinyatakan.
All references refer to seasonally adjusted data unless otherwise stated.
- (c) Kadar pertumbuhan dinyatakan sebagai kadar tahunan terkompoun berasaskan kepada nisbah indeks bulan semasa terhadap purata indeks 12 bulan terdahulu.
Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

Konsep dan Ukuran Asas

Pengenalan

Ekonomi perindustrian adalah sensitif kepada kitaran; apabila sesuatu ekonomi perindustrian berkembang, pekerjaan, jualan, harga dan keuntungan meningkat. Sebaliknya apabila berlaku penguncupan ekonomi, kejatuhan yang ketara ditunjukkan dalam komponen-komponen tersebut. Fenomena ini juga dialami oleh Malaysia yang mempunyai sektor perindustrian yang besar dan berkembang. Maklumat berhubung dengan sesuatu perubahan adalah penting untuk memantau dan meramal prestasi kitaran ekonomi Malaysia.

Dalam hal ini, Jabatan Perangkaan Malaysia dengan kerjasama *Center for International Business Cycle Research (CIBCR), Columbia University, New York, U.S.A.*, telah membangunkan indeks pelopor, serentak dan susulan yang boleh digunakan sebagai penunjuk kepada

Basic Concepts and Measures

Introduction

Industrial economies are cyclically sensitive; when an industrial economy expands, employment, sales, prices, and profits rise and when the economy contracts, downturns in economic performance are often significant. This phenomenon is also experienced by Malaysia which has a large and growing industrial sector. Information pertaining to such movements is thus essential to track and forecast the cyclical performance of the Malaysian economy.

In this connection, the Department of Statistics Malaysia in cooperation with the Center for International Business Cycle Research (CIBCR) at Columbia University, New York, U.S.A., has developed the leading, coincident and lagging indices which will serve as

sesuatu perubahan. Seksyen yang berikutnya menjelaskan secara ringkas konsep teknikal asas bagi indeks-indeks tersebut.

Kitaran Perniagaan

Definisi yang diterima umum mengenai kitaran perniagaan telah diasaskan oleh Arthur F. Burns dan Wesley C. Mitchell kira-kira 60 tahun yang lalu.

Mereka menulis¹: "*Kitaran Perniagaan ialah satu bentuk turun naik yang terdapat dalam aktiviti ekonomi agregat bagi negara yang merancang ekonomi mereka terutamanya dalam enterprise perniagaan: satu kitaran mengandungi pengembangan yang berlaku serentak dalam kebanyakan aktiviti ekonomi, diikuti dengan kemelesetan, penguncupan dan pemulihan secara umum di mana ia membentuk fasa pengembangan pada kitaran yang berikutnya; jujukan perubahan ini*

indicators to such movements. The following sections briefly sketch the basic technical concepts of these indices.

Business Cycles

The most widely accepted definition of the business cycle was constructed by Arthur F. Burns and Wesley C. Mitchell about 60 years ago.

They wrote¹: "Business Cycles are a type of fluctuation found in the aggregate economic activity of nations that organize their work mainly in business enterprises: a cycle consists 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; in duration, business cycles vary from

berulang tetapi tidak berkala; tempoh sesuatu kitaran perniagaan berbeza daripada lebih setahun kepada sehingga sepuluh atau dua puluh tahun ...".

Kitaran perniagaan dipengaruhi oleh kitaran turun naik bagi kebanyakan aktiviti ekonomi atau proses, dan aktiviti ekonomi atau proses ini boleh mempunyai tempoh perhubungan yang amat berbeza terhadap kitaran perniagaan.

Sebilangan besar aktiviti ekonomi ini dapat diukur oleh siri masa ekonomi. Bagi sesetengah siri, tarikh titik pusing kitaran mungkin berbeza sedikit sahaja daripada titik pusing aktiviti perniagaan keseluruhan; bagi aktiviti yang lain, pusingan kitaran mungkin berlaku secara sistematik lebih awal atau terkemudian terhadap aktiviti perniagaan secara umum; manakala ada juga yang mungkin tidak mempunyai hubungan yang tetap.

more than one year up to ten to twenty years ...".

The business cycle is influenced by cyclical fluctuations in many economic activities or processes, and these economic activities or processes can have widely differing temporal relationships to the business cycle.

A large number of these economic activities can be measured by economic time series. For some of these series, the dates of their cyclical turning points may differ only slightly from turning points in general business activities; for others, the cyclical turns may systematically lead or lag general business activities; for still others, there may be no regular relationship at all.

Kitaran Pertumbuhan

Kitaran pertumbuhan ialah gelagat turun naik yang berulang dalam siri penyimpangan daripada arah aliran kitaran perniagaan: ia tiba ke puncak apabila gelagat aktiviti perniagaan secara umum lebih tinggi daripada paras arah alirannya dan mencecah kawah apabila jauh di bawah paras arah aliran.

Pendekatan penunjuk kitaran ialah teknik yang diterima umum digunakan untuk menganalisa situasi ekonomi semasa dan keadaan prospek ekonomi. Pendekatan ini mengenalpasti penunjuk ekonomi secara khusus yang mana kitaran perubahannya atau pergerakannya bersifat mendahului (*lead*), serentak (*coincide*) atau menyusul (*lag*) dalam aktiviti perniagaan.

Setiap penunjuk yang terpilih untuk dimasukkan ke dalam sistem penunjuk pelopor seharusnya mempunyai rasional

Growth Cycles

Growth cycles are recurrent fluctuations in series of deviations from trend of business cycle: they reach peaks when general business activity is farthest above its trend level and troughs when it is farthest below its trend level.

The cyclical indicators approach is a widely accepted technique used to analyze current and prospective economic conditions. This approach identifies specific economic indicators that typically systematic lead, coincide or lag the cyclical movements in business activity.

Each of the indicators selected for inclusion in a system of leading indicators must have a theoretical

dari sudut teori bagi kecenderungannya untuk mendahului aktiviti ekonomi secara sistematik. Prinsip yang sama digunakan bagi penunjuk yang terpilih sebagai sebahagian daripada siri penunjuk susulan, iaitu perlu mempunyai rasional dari segi teori bagi sifatnya sebagai penyusul. Tambahan pula, penunjuk yang dipilih adalah untuk menyatakan dan digunakan dalam hubungan sistematik komponen antara tempoh masa yang panjang dan perubahan keadaan ekonomi yang berlaku dalam tempoh tersebut.

Penunjuk Pelopor, Serentak dan Susulan

Penunjuk ekonomi Malaysia terdiri daripada indeks komposit bagi penunjuk pelopor, serentak dan susulan.² Indeks-indeks ini adalah ringkasan ukuran yang dibentuk untuk menghasilkan isyarat perubahan tentang haluan aktiviti ekonomi Malaysia. Setiap indeks

rationale for its systematic tendency to lead economic activity. The same holds true for those selected as part of a series of lagging indicators, i.e. there must be a theoretical rationale for their behaviour as ladders. In addition, the indicators are selected to display and put to use systematic relationships which were obtained over long periods of time and changes in economic situation.

Leading, Coincident and Lagging Indicators

The Malaysian economic indicators consist of composite indices of leading, coincident and lagging indicators.² These indices are summary measures designed to signal changes in the direction of the Malaysian economic activity. Each index measures the

mengukur gelagat agregat bagi kumpulan aktiviti ekonomi yang menunjukkan tempoh yang selari dengan pusingan kitaran perniagaan tetapi mewakili aktiviti yang berbeza. Penunjuk serentak merupakan ukuran komprehensif untuk prestasi ekonomi keseluruhan. Ia memberitahu kedudukan ekonomi semasa. Penunjuk pelopor ialah sejenis ukuran jangkaan atau komitmen baru terhadap aktiviti yang akan memberi kesan kepada ekonomi keseluruhan untuk masa hadapan. Ia memberitahu ke mana arah tuju ekonomi. Antara tanda awal bahawa pengembangan mungkin mula menurun ialah penurunan yang berterusan oleh kadar pertumbuhan indeks pelopor. Penunjuk susulan memberitahu apa yang sebenarnya telah berlaku. Ia mengukur prestasi pergerakan kitaran bagi penunjuk pelopor dan penunjuk serentak.

aggregate behaviour of a group of economic activities that show similar timing at business cycle turns but represent different activities. The coincident indicators are comprehensive measures of the overall economic performance of the economy. They tell us where we are. The leading indicators are typically measures of anticipations or new commitments to economic activity which will affect the overall economy in the months ahead. They tell us where we are going. Among the earlier signs that an ongoing expansion may start to decelerate is a sustained decline in the leading index growth rate. Lagging indicators tell us what had happened to the economy. It measures the performance of cyclical movements of the leading and coincident indicators.

Oleh kerana jarang terdapat penunjuk yang boleh dipercayai sepenuhnya dalam menjangka pusingan kitaran jika digunakan secara individu, penunjuk-penunjuk tersebut harus disatukan kepada komposit indeks. Oleh itu, penunjuk pelopor disatukan kepada komposit indeks pelopor, penunjuk-penunjuk serentak disatukan kepada komposit indeks serentak dan juga penunjuk susulan disatukan kepada komposit indeks susulan. Pada umumnya komposit lebih berupaya menghasilkan isyarat titik pusing berbanding penunjuk secara individu.

Kadar Pertumbuhan

Kadar pertumbuhan pelopor, serentak dan susulan Malaysia adalah perubahan terlicin enam bulan pada kadar tahunan. Kadar tahunan 6-bulan terlicin adalah berasaskan kepada nisbah indeks bulanan semasa terhadap purata indeks ke atas dua belas bulan sebelumnya.³

Since few indicators are completely reliable in anticipating cyclical turns when used alone, it is desirable to combine them into a composite index. Therefore, leading indicators are combined into a composite leading index, coincident indicators into a composite coincident index and also combined the lagging indicators into a composite lagging index. The composites are generally more reliable in warning of turning points than individual indicators.

Growth Rates

The Malaysian leading, coincident and lagging growth rates are 6-month smoothed changes at annual rates. The 6-month smoothed annual rate is based on the ratio of the current month index to the average index over the preceding 12 months.³

¹ Arthur F. Burns and Wesley C. Mitchell, *Measuring Business Cycles*, National Bureau of Economic Research, N.Y., 1945, page 3.

² Indeks komposit dikira berasaskan kaedah Moore-Shiskin di mana mengandungi kadar pertumbuhan komponen indeks bulan ke bulan dipuratakan selepas penyelarasan komponen tersebut kepada unit yang sama, dan kemudiannya mengumpulkan kadar pertumbuhan purata ini kepada indeks. Indeks ini diselaras supaya (1) peratus perubahan purata mutlak sebagai komponen kitaran bagi indeks pengeluaran perindustrian; dan (2) kadar pertumbuhan purata yang sama dengan arah aliran sebagai KDNK benar.

The composite indices are calculated using the Moore-Shiskin method which consists of averaging the month-to-month growth rates of the index components, after standardizing them to the same units, and then cumulating this average growth rate into an index. This index is then adjusted to have (1) the same average absolute percent changes as the cyclical component of industrial production; and (2) the same average trend rate of growth as real GDP.

³ Disebabkan sela antara titik tengah bulan semasa dan bulan-bulan terdahulu ialah 6.5 bulan, nisbah tersebut diselaras kepada kuasa 12/6.5 bagi mencapai maksud kadar tahunan terkompoun.

Because the interval between the mid-points of the current month and the preceding months is 6.5 months, the ratio is raised to the 12/6.5 power to derive a compound annual rate.