The Composite Index of Leading Indicators for South Korea

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A detailed benchmark review of the eight components of the existing Korean leading index revealed unsatisfactory results for two of them and suggested their tentative removal. In replacement, one new component was found, resulting in the construction of a new Leading Composite Index (LEI).

The series of Monthly Working Hours (Chart 1) is excessively volatile. In a period of only 29 years, which experienced two recessions, the indicator had no less than seven cyclical declines (five are marked as “extra” by x’s in the Chart). The Bry-Boschan program did not take the declines to a pronounced low in 1998, probably because it was so brief, but we consider that the declines, while irregularly interrupted, started long before, near the end of 1995. ¹ But, regardless how the episode is treated, it seems undeniable that this series does not qualify as a leader good enough to be included in the nation’s leading index.

Our second recommendation is to remove Authorized Building Permits, Floor Space (Chart 2). This series, too, is excessively volatile and its cyclical behavior does not conform well to the Korean business recessions and recoveries. It shows at least eight extra declines marked again with x’s. It fell less before and during the 1979-80 recession than shortly before and after it (in 1976 and 1980-81). It dropped rapidly in the 1997-98 recession, but with short lags at both its peak and it trough.

¹ Not to acknowledge that decline would imply wrongly that the indicator missed altogether this very serious crisis, which South Korea shared with several other Asian economies. True, the hours rose rather steeply and misleadingly in mid-1997 before dropping sharply soon thereafter, but it is clear that they did not fail to match this recession. The visually chosen turning points are marked by asterisks (*).
A better performing indicator that can be used to replace Building Permits is Real Construction New Orders from Private Sector. This series measures the monthly value of new construction work orders received from the private sector. The source is Korea National Statistical Office, which conducts a survey that covers 546 top ranked construction enterprises. After seasonal adjustment and also slight smoothing (a three-month moving average), Chart 3 shows that this indicator (deflated with the Producer Price Index) has leads of eight and ten months at the 1979-80 cycle peak and trough respectively, a lead of four months at the 1997 recession and a coincident timing (0) at the 1998 recovery. Its three extra declines occurred in 1980, 1985, and 1991, all during the long expansion of 1980-97, but each of them was relatively brief and small.

The contrast between the two indicators under consideration is such that a decision to drop the authorized building permits from the Korean new LEI and include real private construction new orders instead should cause little doubt.

Chart 4 and 5 show the new and old leading indexes respectively, for South Korea, 1971-2004. The elimination of the monthly working hours and the replacement of authorized building permits with private construction new orders have the joint result of improving substantially the leading index for South Korea. Comparing the two indexes in Chart 6 demonstrates that the new index is superior. In addition to having a more steady and consistent upward trend, the new index has better articulated timing points than the old one and a short lead rather than a coincidence at the 1980 revival. (Note that all series in the chart are drawn to a common vertical logarithmic scale, where equal distances represent equal percent changes.)

We conclude that the new Leading Index for the Republic of Korea is preferable to the old one, given its encouraging performance. The new timely LEI composed of seven monthly leading indicators should monitor the Korea economic conditions more accurately.
Chart 1 Monthly Working Hours

(Numbers)

Notes: Seasonally adjusted un-centered three-month average. The leads (-) and lags (+) refer to the business cycle peaks and troughs as dated above, marking the shaded recession areas. The Bry-Boschan turning point program was used for this purpose, but it does not take the decline in the 1997/98 recession, which was chosen judgmentally (*), probably because of its shortness.

Data Source: Korea National Statistics Office, Thomson Financial

Chart 2 Authorized Building Permits, Floor Space (SA, 3M avg.)

(Thous. Sq. Meters)

Data Source: Korea National Statistics Office, Thomson Financial
Char 3 Real Construction New Orders from Private Sector (deflated by PPI, SA, 3M avg.)

Data Source: Korea National Statistics Office, Thomson Financial

Chart 4 New Leading Index, South Korea, 1971-2005

Components: Stock Price Index, Value of Machinery Orders, Letter of Credit Arrivals, Index of Inventories to Shipments, Real Exports, Yield of Gov. Bonds(5Y), Private Construction Orders

Data Source: The Conference Board
Chart 5 Old Leading Index, South Korea, 1971-2005

Components: Stock Price Index, Value of Machinery Orders, Letter of Credit Arrivals, Index of Inventories to Shipments, Real Exports, Yield of Gov. Bonds (5Y), Monthly Hours Worked, Authorized Building Permits

Data Source: The Conference Board

Chart 6 Old and New Leading Indexes, South Korea, Compared

Data Source: The Conference Board