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Business Surveys and the Composite Index in Malaysia

Hisashi Yokoyama

Introduction

The results of business surveys (BSs) and the CI have been used widely, especially in developed countries, for judging short-run economic conditions or for developing the business expectations of private companies. This chapter will focus on Malaysia, where relatively more BSs have been conducted and CIs have been compiled compared to other developing countries. In the first section, a review of BSs and CIs will be given. In the second section, how much of the variations in the CI can be explained by BSs will be considered. Future research will be proposed in the final section based on the conclusions reached.

A Review of Business Surveys and Composite Indices in Malaysia

Business Surveys

In Malaysia, three BSs have been conducted biannually or quarterly by government agencies:

1. Department of Statistics (DOS),
   Business Expectations Survey of Limited Companies, biannually
2. Malaysian Industrial Development Authority (MIDA),

Much of the information on the business surveys in this chapter was obtained through Jessica P. K. Luan of the Public Bank Berhad and Yeong Y. Ching of the Malaysian Institute of Economic Research. Their cooperation was greatly appreciated, and any errors in the study are the author's.

Industrial Trends Survey, biannually

3. Bank Negara Malaysia (BNM),
   Survey of Industrial Trends, annually or quarterly

Recently three different surveys were introduced by nongovernment institutions:

4. Malaysian Institute of Economic Research (MIER),
   Business Conditions Survey Report, quarterly
   Consumer Sentiments Survey Report, quarterly
5. Economic Services Division, Public Bank Berhad (PBB),
   Survey on Key Sectors/Industries of the Economy, quarterly

The author was able to obtain very few of the results of the surveys by BNM. Only some of the bank's results are released in its annual and quarterly report. On the other hand, DOS and MIDA regularly release the results of their BSs—in particular, DOS, which has been conducting quarterly surveys since 1976 and has published its results in a biannual publication since 1980 (every March and September). The BS by MIDA (formerly the Federal Industrial Development Authority) started in 1969 with the cooperation of the Federation of Malaysian Manufacturers (FMM), and they also have been releasing their survey results on a biannual basis since 1980 (every April and September).

The main difference between the BSs by DOS and MIDA is the industries surveyed (see Table 6–1). DOS surveys almost all the industries, including primary industries. MIDA, on the other hand, covers exclusively the manufacturing industries. The coverage by DOS is listed in Table 6–2, and the figures show that the industries surveyed have changed over the years but the total sample has been quite constant at 220. In the second issue for 1988,[1] it was stated that the selection of the respondents was based primarily on revenue size using the figures recorded in the 1985 Financial Survey of Limited Companies. The companies selected accounted for 35.6 per cent of gross revenue and the response was 100 per cent.

The sample size and the response rate for MIDA's BS have differed from one survey to another. In the first issue of 1985,[2] the sample size was 153, and the response rate was 83 per cent. The survey covers the manufacturing industries which are classified into twelve sectors, such as Food, Beverage & Tobacco, and Electronic Products. MIDA surveys each sector regarding performances, expectations, and limiting factors.

MIER started its *Business Conditions Survey Report* in the second quarter of 1987. It surveyed 160 concerns from eleven sectors of the manufacturing industries. However, the response rate during the second quarter of 1988 was only around 40 per cent.[3] In MIER's second publication,[4] *Consumer Sentiments Survey Report*, a total of 1,150 housewives were interviewed. An

Table 6–1
Manufacturing Sectors Surveyed

	(1) DOS	(2) MIDA	(3) MIER	(4) PBB
Total number of firms surveyed	93	153	160	—
Total number of sectors	18	12	11	15
Sectors surveyed	Food	Food, beverage, & tobacco	Food, beverage, & tobacco	Food
	Beverage			Beverage
	Tobacco			
	Textiles	Textiles & clothing	Textiles	Textile
	Wearing apparel & footwear			Wearing apparel
	Wood & cork products	Wood & wood products	Wood products	Wood-based industry
	Paper & printing	Paper, printing, & publishing	Paper products	
	Industrial chemicals	Chemicals & petrolum	Chemicals	Industrial chemicals
	Other chemical products			Other chemical products
	Petroleum refining			Petroleum refining
	Plastic products & glass Products	Plastic products	Plastics	
	Rubber products	Rubber products	Rubber products	Rubber products
	Nonmetallic mineral products	Nonmetallic products	Nonmetallic products	Nonmetallic mineral products
	Iron & steel basic industries	Metal products	Metal products	Iron & steel
	Nonferrous metal			Nonferrous metal
	Fabricated metal products			Fabricated metal
	Electrical machinery	Electrical products	Electronics & electrical products	Electrical products
		Electronic products		
	Machinery except electrical	Machinery & transport equipment	Machinery & transport equipment	Transport equipment
	Transport equipment			Manufacturing & assemblies

Sources:
1. Department of Statistics, *Business Expectations Survey of Limited Companies*, Second Half, Kuala Lumpur, 1987.
2. Malaysian Industrial Development Authority, *Industrial Trends Survey*, No. 42, Jan./June, Kuala Lumpur, 1985.
3. Malaysian Institute of Economic Research, *Business Conditions Survey*, Executive Summary, Third Quarter, Kuala Lumpur, 1987.
4. Economic Service Division, Public Bank Berhad, *Economic Review*, Sep./Oct. Kuala Lumpur, 1988.

Table 6–2
Survey Samples by the Department of Statistics

	1980		1981		1982	
	I	II	I	II	I	II
Total	220	220	220	220	220	219
Rubber	35	35	20	20	20	20
Oil palm	10	10	24	24	24	24
Mining	22	22	10	10	10	9
Manufacturing	75	75	89	89	89	89
Construction	12	12	4	4	4	4
Wholesale	30	30	29	29	29	29
Retail	20	20	11	11	11	11
Banks & other financial institution	16	16	12	12	12	12
Insurance, real estate & business services	—	—	7	7	7	7
Transport	—	—	14	14	14	14
Logging	—	—	—	—	—	—
Hotel	—	—	—	—	—	—

Source: Department of Statistics, *Business Expectations Survey of Limited Companies*, issues for each year, Kuala Lumpur.

index of consumer sentiments was constructed based on such factors as financial position, employment outlook, and plans for purchasing major durable goods.

PBB bases its evaluations on survey data from fifteen manufacturing sectors and four tertiary industries and publishes its results in its bimonthly *Economic Review*. The details of its BSs can be obtained from its quarterly publication, *Current Performances in Outlook of Manufacturing Industry*.[5]

The Malaysian economy still depends heavily on the performance of primary commodities, making the BS by DOS more suitable for the purpose of quantitative analysis. It should be noted, however, that the importance of the traditional sectors is declining in Malaysia. DOS is also able to provide much longer time-series data compared to the data series published by MIER and PBB. The BS results of BNM and MIDA are not suitable because of the lack of details.

The Composite Index

The first coincident CI was constructed by BNM in 1986. It was constructed using five data series: exports, imports, and production indices for agriculture, manufacturing, and mining. Using the indicator, it described the Malaysian economy in terms of seven cycles starting from 1968. It was

1983		1984		1985		1986		1987	
I	II	I	II	I	II	I	II*	I	II
220	220	220	220	220	220	220	—	220	220
16	16	12	12	12	12	8	—	8	8
24	24	16	16	16	16	16	—	16	16
6	6	6	9	6	6	6	—	6	6
91	91	92	92	92	92	93	—	93	93
3	3	10	10	10	10	13	—	13	13
29	29	23	23	23	23	23	—	20	20
8	8	8	8	8	8	8	—	8	8
16	16	15	15	15	15	15	—	15	15
8	8	10	10	10	10	10	—	10	10
19	19	19	19	19	19	19	—	19	19
—	—	9	9	9	9	9	—	9	9
—	—	—	—	—	—	—	—	3	3

* Not available.

predicted that the trough of the last cycle would come at the end of 1986.

In 1987 the Faculty of Economics and Administration (FEA), University of Malaya, created the first comprehensive DI for Malaysia in a joint project with the Institute of Developing Economies (Tamin et al., 1987). Currently only twenty-four data series out of the initial 185 series collected are used (see Table 6–3). The data series were chosen taking into consideration that: (1) the Malaysian economy is a small and open one; (2) exports, especially the prices of primary export commodities, have great impact on the domestic economy; and (3) manufactured exports are gaining in importance. FEA assembled its CIs in 1987 and details of the results were published in a twice yearly publication, the *FEA Monitor*.[6] The weights allocated to each of the individual indicators are based on their shares in value added and exports (Tamin et al., 1988). However, the reference dates registered differed from those recorded by BNM (see Figure 6–1). This is not surprising since BNM compiled its CI in 1986, and it may have been too short a time frame to identify the cycles correctly.

The Relationship between BSs and CIs

One of the advantages of BSs is that their results can be used for the predic-

Table 6–3
Composite Index Data Series

Leading Index
(1) Rubber Production Value
(2) Palm Oil Price
(3) Sawn Timber Export Unit Value
(4) Purchasing Power of Exports
(5) Production Index of Electrical Machinery, Electronic Components, etc.
(6) Share Price Index (KLSE Industrial Index)
(7) Ratio of Demand Deposit to Currency
(8) Interbank Rates on Seven-day Call Money (Monthly Average)
(9) Change in Real Net Lending of Banking to Public Sector
Coincident Index
(1) Tin Production Value
(2) Palm Oil Production Value
(3) Export Value of Sawlogs and Sawn Timber
(4) Export Value of Crude Petroleum
(5) Manufacturing Production Index
(6) Number of Paid Employees in Manufacturing Establishments
(7) Cement Production
(8) Import Quantum
Lagging Index
(1) Total Salaries and Wages Paid in Manufacturing Establishments
(2) Ratio of Registrants Placed to Active Registrants at the Employment Service
(3) Issue of New Television Licenses
(4) Production Index of Transport Machinery
(5) Loans and Advances of the Banking Sector to Nonfinancial Private Sectors
(6) Money Supply
(7) Checks Received through Local Clearing

tion of the economy, since the results obtained are for the future expectations of the respondents based on their present situation. Since the accuracy of BS results is one of empirical concern, a number of methods have been proposed to test how much the results of BSs explain the variation in performance of the economy.

Here, a procedure similar to that proposed by Klein and Moore (1985) will be used. Suppose Y_t is a variable representing the performance of the economy, that is, the CI by FEA which will be averaged over six months since the BS is carried out on a biannual basis. $X^A_{i,t}$ and $X^P_{j,t}$ are the actual and predicted results respectively of BSs. The equation to be estimated is the following:

$$Y_t = \alpha + \sum \beta_i X^A_{i,t-1} + \sum \gamma_j X^P_{j,t} + \varepsilon_t .$$

The following variables are selected out of the items in the BS for $X^A_{i,t}$

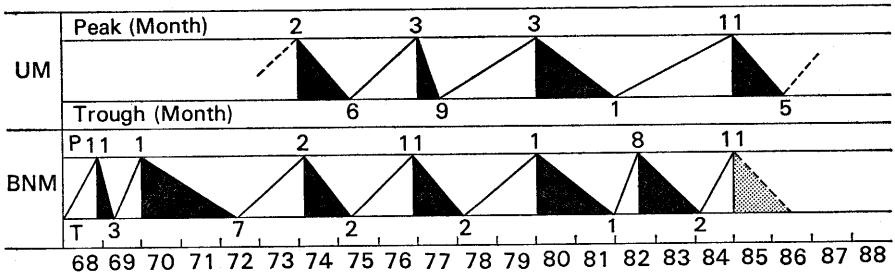

Fig. 6–1
Peaks and Troughs in the Composite Index

Sources: UM: Mokhtar Tamin et al., "Composite Index of Malaysia," in Chap. 7 of Statistical Research Dept., Institute of Developing Economies, ed., *Business Cycles in Five ASEAN Countries, India, and Korea* (Tokyo: Institute of Developing Economies, 1988).
BNM: "Growth Cycle Chronology of the Malaysian Economy," in Bank Negara Malaysia, *Annual Report* (Kuala Lumpur: 1985 and 1986).

and $X^{P}_{j,t}$:

(1) Gross Revenue
(2) Capital Expenditure
(3) Employment
(4) Level of Output/Operation Anticipated
(5) Constraints Anticipated
(6) Anticipated Stock Level.

Among the specifications, two register relatively strong performances[7]:

(1) $\log (CI)_t = 4.15 + 0.16 \log (SAME)^P_t - 0.29 (CAP)^A_{t-1}$
$\quad\quad (18.9) \quad (2.4) \quad\quad\quad\quad (-4.5)$
$\quad + 0.33 \log (CAP)^P_t$
$\quad\quad (5.3)$
$R^2 = 0.76 \quad S = 0.04 \quad DW = 1.27$

(2) $\log (CI)_t = 4.40 + 0.21 \log (CONSTR)^P_t - 0.29 (CAP)^A_{t-1}$
$\quad\quad (18.4) \quad (2.8) \quad\quad\quad\quad (-5.0)$
$\quad + 0.24 \log (CAP)^P_t$
$\quad\quad (3.8)$
$R^2 = 0.74 \quad S = 0.04 \quad DW = 2.2,$

where CI is the composite index; $SAME^P_t$ is the percentage of companies anticipating the level of output/operation to be at past levels; CAP^A_{t-1} is actual lagged capital expenditure; CAP^P_t is anticipated capital expenditure; and $CONSTR^P_t$ is percentage of companies anticipating no constraints.

The predicted and actual values for specifications (1) and (2) are plotted in Figures 6–2 and 6–3. The results show that only three out of the fourteen

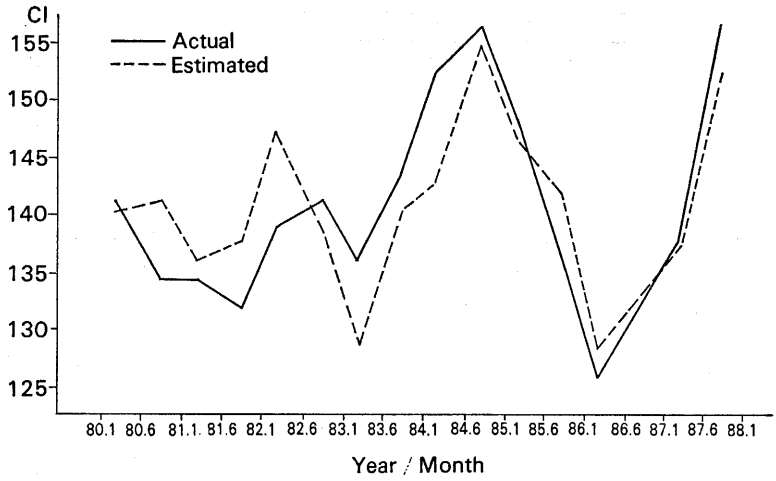

Fig. 6–2
Actual and Estimated Values of the CI (Specification 1)

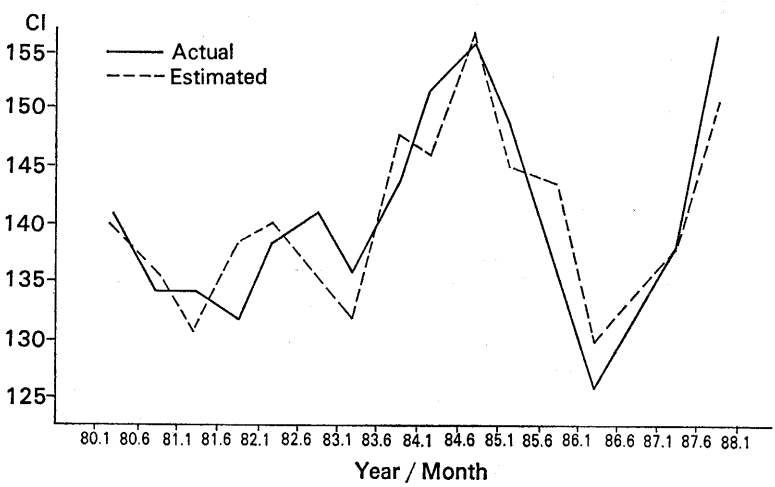

Fig. 6–3
Actual and Estimated Values of the CI (Specification 2)

samples of the direction of movements in the *CI* are incorrectly predicted. And it is in the early 1980s that the greatest variation from actual values is observed.

These results suggest that the major movements of the Malaysian economy appear to be fairly well-reflected in the forecast with three-fourths of

the fluctuations in the CI being captured by the movements in the results of the BSs.

Two points should be made in consideration of the other specifications of equations tried but which proved to be insignificant. First, Nerlove (1983) found that "the no change category" in BSs (in our specification, *SAME* and *CONSTR*) plays an important role in forecasting because firms have a tendency to understate the proportions of anticipations in the increase categories. Therefore positive and significant parameters are obtained for both *SAME* and *CONSTR*, while insignificant results are recorded for the decrease or increase categories. This necessitates further investigation into the application of categorized information in BSs.

Second, actual and anticipated capital expenditures are found to be significant in the estimations, but gross revenues and employment are not. This may correspond to the general understanding that decisions on capital expenditures are highly sensitive to the current economic trend and that capital expenditures for any industries diffuse into the economic activities of other industries. Thus, negative and significant parameters to the lagged actual performances may suggest adjustment behavior of investing industries.

Concluding Remarks

This chapter first reviews the BSs, then the CIs in Malaysia to ascertain their differences in terms of coverage, accessibility, and periodicity. The CIs by FEA and BNM are quite similar to each other except for one short cycle dated from 1982 to 1983. The relationship between the FEA CI and DOS BSs were analyzed to see if the "no change category" and capital expenditures can explain significantly the fluctuations of the CI.

Further research is needed in the areas of the reference dates of the CIs, how BSs can be utilized for prediction purposes, and information concerning the "no change category."

Notes

1 Issue for the second half of 1988, Nov. 1988, p. iv.
2 No. 42, Jan./June 1985 issue. However, issues No. 43 through No. 48 have already been released. MIDA is scheduled to prepare issues jointly with BNM beginning with No. 49 (Jan. / June 1989), according to Hundon Aziz of MIDA.
3 *MIERNEWS*, Vol. 1, No. 2/3, July / Oct. 1987, p. 2.
4 MIER, *Quarterly Report on Consumer Sentiments*, third quarter 1988.

5 Detailed findings are available in PBB's *Current Performances in Outlook of Manufacturing Industry*, published on a quarterly basis.

6 This is a semiannual publication that first appeared in December 1987. It analyzes three recent figures for CIs developed by FEA and reviews the Malaysian economy.

7 After adding missing samples for the second half of 1986 and the first half of 1988, significant results were also obtained.

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