MARKET STRUCTURE AND PRICE-COST MARGINS IN MALAYSIAN MANUFACTURING INDUSTRIES

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INTRODUCTION

SINCE THE publication of Bain's seminal paper in 1951 [2], a number of statistical investigations have been made on the relationship between market structure and dimensions of economic performance in the advanced industrialized economy.[1] To our knowledge, only two studies [15] [36] evaluate the impact of market structure on allocative performance in the less developed countries (LDCs). This paper attempts to fill the gap in by testing a more complete structure-performance model which includes conventional dimensions of market structure, foreign trade, and direct foreign investment (DFI).

I. ANALYTICAL FRAMEWORK

Economic theory and industrial experience suggest that structural features of an industry strongly influence the competitive conduct of its constituent firms, the outcome of which has important consequences on resources allocation. Scarce resources are allocated most efficiently when the output of each industry is such that long-run selling price is equal to long-run marginal cost of production.

A large number of industrial organization studies have tried to isolate those features of market structure which enable firms to raise selling price above marginal cost of production, thereby earning monopolistic profits. Traditionally, this type of analysis has related industry profitability to such dimensions of the market structure as degree of seller concentration, conditions of entry, and growth of demand. In a closed economy, these variables would be theoretically sufficient to describe the major determinants of inter-industry variations in profitability. In an open economy like Malaysia, a more complete specification of the structure-performance model would have to allow for the influence of international trade on domestic profitability. In view of the importance of foreign equity participation in the Malaysian manufacturing sector, we have also taken into consideration the role of DFI in this analysis.[2]

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[1] For a survey of existing studies in the United States, see [34].

[2] In 1969, 62 per cent of the equity capital of limited companies in the manufacturing sector was under foreign ownership [23, p. 151].

II. HYPOTHESES AND VARIABLES

A. *Price-Cost Margin*

The dependent variable in the present study is the price-cost margin, defined as the percentage gross return (before taxes, interest, and depreciation) on sales for the industry [10]. Since price-cost margins are not net of capital costs, variation in the ratio will in part reflect differences in inter-industry variation in capital intensity.[3] To avoid this problem, a capital-output ratio is included in the regressions to control for the different degree of capital intensity among industries. Under the assumption of constant long-run average variable cost,[4] the price-cost margin approximates the classic Lerner index of monopoly power which is commonly employed as a summary indicator of the impact of monopoly on price and therefore upon resource allocation.[5]

From the *Survey of Manufacturing Industries, Peninsular Malaysia* (*Survey,* in short, see Appendix), the margin is computed as: Price-cost margin = [value added − payroll (inclusive of supplemental employee costs) − rentals − advertising and other purchased services] ÷ total value of sales.[6] The margin is taken as an average for the period 1968–71.

B. *Seller Concentration*

Oligopoly theory suggests that the strength of mutual interdependence in price and output behavior among rival sellers depends on the number and size distribution of firms in a particular market. The larger the share of industry sales produced by a few firms, the greater the probability of successful collusion (either implicit or tacit) between these firms. A perfect collusion would enable co-operating sellers to reap monopoly profit. Hence price-cost margins are likely to be positively related to seller concentration.

Given the limitation of data, concentration ratio in this paper is measured by the share of industry output supplied by the eight largest establishments. Usually

[3] If concentrated industries are those that have high capital intensity, a spurious relationship between gross price-cost margins and seller concentration would result [6] [27].

[4] The evidence from most statistical studies indicate that long-run average cost is constant over a large range of outputs. See Johnston [19].

[5] It is obvious that the price-cost margin also varies (inversely) with the price elasticity of demand among monopolistic industries. A serious deficiency of this paper, like that of other existing studies, is the omission of the price elasticity of demand in the set of explanatory variables. Data required to construct a reasonable measure of price elasticity of demand by industry are not available. However, if market power operates by reducing demand elasticity, then the Lerner's index prescribes an unambiguous relationship between market power and the price-cost margin.

[6] Supplemental employee costs include payments in kind, government provided funds, and social security contributions. Purchased services include accounting, secretarial and other office expenses, insurance, and licenses. The inclusion of advertising expenditure in total direct costs lessens the possibility of a spurious correlation between price-cost margin and concentration due to the observed close relationship between advertising and concentration. See Mann et al. [26].

the concentration ratio is computed from the share of the four or the eight largest firms in the industry. Our present measure will understate the true market position of the eight largest firms in industries where multi-plant operations are common.[7]

The eight-establishment concentration ratios are computed, following the method employed by Bain [4], from the frequency distribution of output-size class as reported in the *Survey, 1971*. The denominator of the concentration ratio is adjusted for volume of imports since import volume constitutes a substantial share of the domestic market for manufactures. Import data (available by six-digit SITC product categories) are matched against the four-digit survey industries with the aid of guidelines given in [25]. No adjustment has been made for regional markets as relevant data are not available.[8] The resultant downward bias in the concentration ratio is, however, likely to be insignificant in a small domestic market like Malaysia.

C. *Barriers to Entry*

In addition to seller concentration, another dimension of market structure involves "barriers to new competition," that is, impediments to entry of new firms responding to profit opportunities in the industry. With high entry barriers, established sellers can raise selling price above long-run average cost of production without fear of intrusion by new rivals.

Bain [3] has identified three main sources of barriers to entry: (1) economies of large scale, (2) product differentiation, and (3) absolute capital requirements. Economies of scale pose a significant source of entry barrier if (a) the minimum efficient scale of new entrants constitutes a substantial proportion of the industry sales and (b) the average cost of production increases substantially at sub-optimal scale. Entry at optimal scale would lead to excess capacity and price war whereas production at sub-optimal scale results in high cost. Hence, the larger the minimum efficient scale of the plant for an entrant relative to the industry output, the higher the entry forestalling price. Price-cost margins can be expected to be positively related to the level of scale economy.

In the LDCs, trade and fiscal policies commonly employed to promote rapid industrialization tend to substantially raise the scale barriers to entry. Distortions in factor prices caused by such policies tend to encourage adoption of large-scale, capital-intensive equipment and methods of production [22]. New entrants would have to produce for a large portion of the small domestic market in order to exhaust all scale economies. By encouraging the use of greater labor-intensive techniques, a more realistic factor price alignment would lower the height of entry barriers [34].

The Comanor and Wilson method [11] is used here to estimate the minimum

[7] A thorough study of industrial concentration by Rosenbluth [30] has shown that industries with relatively high (low) firm concentration generally also have relatively high (low) plant concentration. The rank correlation coefficient for the two ranking for ninety-six industries is 0.947.

[8] For a review of the kind of data required to make a meaningful adjustment, see [35].

optimum plant scale by computing average size of the largest plants, accounting for approximately 50 per cent of the industry output. The average plant size is then divided by total industry output to obtain a measure of scale economies. The Comanor and Wilson method tends to impart an upward bias in the estimation of the minimum efficient scale if we accept Bain's findings [3] that the largest plants in the sample industries are typically larger than the minimum optimal scale.

The product differentiation barriers to entry arise from the preference of buyers for the product of established firms over new ones. New entrants would find it difficult to secure a selling price as high (relative to the average cost) as that of the established firms. Alternatively, entrants would have to incur large sales-promotion costs to overcome the preference for established products. Bain has suggested that the height of the product differentiation barriers can be measured by the amount of sales promotion cost [3, p. 201]. The proxy commonly used to approximate intensity of promotional effort is the ratio of advertising expenditure to total sales.[9] Our measure of the advertising-sales ratio is averaged for the years 1970–71.

The absolute amount of capital requirements for entry indicates the amount of capital an entrant has to raise in order to build plants of minimum efficient scale and also to compensate for losses, until profits are realized. Since it can be expected that the ability to raise funds becomes progressively more difficult as the capital required for entry increases, we would expect the amount of capital requirements to be positively related to industry price-cost margins. In the LDCs capital markets are relatively imperfect, and the ability of new unknown firms to obtain adequate financing may be limited.[10]

The amount of capital required for entry at the scale of a single optimal plant is obtained by multiplying the estimated minimum efficient scale to the ratio of net book value of fixed assets to output for each industry. Generally, this proxy tends to understate the amount of capital requirements as the replacement cost of new assets tends to be higher than book value.

D. *Growth of Demand*

One can expect that, other things being equal, the growth of industry sales exerts a positive influence on profit [17]. First, firms in industries having a rapid increase in sales are less likely to feel competitive pressure than those in industries with stagnating demand who might be compelled to get temporary gains. Second, in capital-intensive oligopolistic industries where overhead costs are high relative to total costs, excess capacity resulting from slow growth or declining demand

[9] It is obvious that the advertising-sales ratio will tend to understate the intensity of promotional effort where relatively heavy reliance is placed on forms of sales promotion other than advertising.

[10] Drake has noted that the stock markets in Malaysia and Singapore tend to be highly selective [12]. Well-established, large industrial firms, especially those of foreign origin, have considerable advantage in raising equity and debt capital over local, less well known firms.

tends to cause a breakdown in established price discipline, leading to lower price-cost margins [31]. The rate of growth in demand is approximated by the growth rate of real value of sales between 1968 to 1971.[11]

E. *Import Competition*

In an open economy, barriers to entry at the production stage are not sufficient alone to sustain monopoly profits in the domestic market. With zero or low tariff rates, imports from efficient producers abroad would enter the domestic market when selling price substantially exceeds transportation costs.

Recently, L. Esposito and F. Esposito have generalized the theory of entry conditions to include the threat of potential entry by foreign producers [13]. They have demonstrated that, under reasonable assumptions, a foreign entrant faces lower overall entry barriers than a domestic entrant, despite the additional tariff barriers imposed on foreign producers.[12] As such, foreign producers may pose the most "immediate" threat of entry and exert the strongest influence on the pricing behavior of established domestic firms. Hence, to the extent that actual or potential import competition keeps domestic firms from reaping monopoly gains, price-cost margins will be lower in industries with a greater degree of competition from imports.

We employ the effective rate of protection (ERP) as a proxy to represent the height of barriers to entry faced by foreign competitors. Data on ERP is taken from Ariff [1].

F. *Export Opportunities*

As with "import discipline" on the conduct of domestic producers, the existence of a competitive export market tends to compel monopolists (oligopolists) to be more competitive in pricing [9]. A monopolist selling only in a protected domestic market will set his selling price above the international levels. When export opportunities exist and if he cannot discriminate between domestic and foreign markets, the monopolist becomes a price-taker in both domestic and world markets. Profit-maximizing behavior leads to expansion in domestic production, part of which will be exported, resulting in the reduction of domestic prices to international levels.[13]

A similar prediction can be made on the influence of export markets on oligo-

[11] In absence of the wholesale price index, the nominal value of sales is deflated by the consumer price index for Peninsular Malaysia published by the Department of Statistics.

[12] The argument holds only if import quotas are nonexistent or when quotas are not completely filled. In markets where quotas exist and are completely filled, entry by foreign sellers is effectively blockaded.

[13] The validity of the analysis rests on the assumption that the domestic monopolist is unable to discriminate in prices of foreign and local markets. Should the existence of trade barriers allow price discrimination, prices and profits are likely to increase with exports. From existing evidence, price discrimination by Malaysian manufacturers appears to be rare. An examination of relative prices of individual Malaysian manufactures (at six-digit SITC level) by Johns uncovered only one clear-cut example (hard soaps) of price discrimination [18].

polistic industrial performance. Caves and Jones argue that oligopolistic sellers tend to encounter greater difficulty in achieving tacit collusion with foreign sellers than with their local counterparts, largely because of differences in market environment and problems of communication [9, p. 212]. Consequently, they are forced to adopt competitive pricing strategies when selling in international markets. In addition, the presence of alternative export markets makes oligopolists less conscious of their mutual interdependence in the domestic market, lessening the incentive for collusive price behavior [29]. Export opportunities for each industry are approximated by the ratio of net exports to total industry sales, averaged for 1970–71, and are expected to be negatively related to the price-cost margin.

G. *Direct Foreign Investment*

Recent attempts to explore the determinants and consequences of DFI within the industrial organization framework suggest that horizontal direct investment is most likely to occur in industries marked by product differentiation and relatively small number of sellers, that is, a differentiated oligopoly [7] [8]. To the extent that DFI is considered the most effective vehicle for earning further rent on product differentiation assets, industries with larger flows of direct investment can be expected to have greater profitability. The magnitude of DFI in each industry is measured by the ratio of output attributed to foreign firms to total industry output, averaged over 1970–71.

H. *Administrative Controls*

Since 1968, the Malaysian government has instituted a series of measures to exercise control over private investment in the manufacturing sector. By the end of 1970, a total of thirty-one industries were closed to entry. Apart from the desire to reserve industries for indigenous equity participation, most industries were generally closed to further entry on the grounds that sufficient production capacity exists to meet domestic demand [16].

The system of controls creates an administrative barrier to entry and closed industries can be expected to have higher price-cost margins than industries not subject to administrative control. A dummy variable with the value of 1 for closed industries and 0 for the rest is included in the regressions to test for differences in the intercepts of the two industry groups.

The sample consists of forty-two four-digit manufacturing industries classified under the Malaysian Industrial Classification, which is based on the post-1968 UN International Standard Industrial Classification (ISIC).[14] The four-digit ISIC industry, if properly screened, corresponds nearest to the theoretical industry [5, p. 128]. The sample is chosen from a population of ninety-two four-digit industries in the *Survey, 1971*. The major criteria used in selecting industries for analysis is the availability of data on frequency distribution of output-size classes from which the establishment concentration ratios are computed. Data on frequency distribution are only given for fifty-two industries because the "disclosure

[14] The list of the industries is available from the writers on request.

risk" arising from the small number of establishments in the remaining industries prevents the census authority from revealing such information. Ten industries are also left out from the sample either because the establishments are grouped into relatively few broad size classes (six industries) or the composition of output is too heterogeneous to correspond in any meaningful way to the concept of theoretical industries (four industries).[15]

III. STATISTICAL RESULTS

Table I presents the multiple regression equations relating price-cost margins to various combinations of structural variables for the sample of forty-two industries. In equation (1a), the coefficient of the seller concentration ratio, although exhibiting the expected positive sign, is not statistically significant from zero.[16] A weak association between price-cost margins and seller concentration is not totally unexpected as the observed values of both variables are biased somewhat downward. The measures of price-cost margins is biased downward to the extent

TABLE I

REGRESSION EQUATIONS EXPLAINING PRICE-COST MARGINS
(Sample of 42 Industries)

Equation	Intercept	*CR8*	*MES*	*ACR*	*AS*	*XP*
(1a)	0.1093	0.8171	0.6491	0.0050	1.3692	−0.0059
		(0.5697)	(6.2893)**	(3.1087)**	(5.0647)**	(2.3078)*
(1b)	0.1709	0.0238	0.6086	0.0051	1.4485	−0.0050
		(0.7949)	(6.1279)**	(3.0791)**	(5.4469)**	(2.0142)*
(1c)	0.1033	0.0519	0.6016		1.4779	−0.0049
		(1.6269)†	(5.4039)**		(4.9603)**	(1.7635)*

ETP	*OWS*	*GR*	*ID*	*K/O*	R^2	Adjusted R^2
0.0003	0.0418	0.0232	0.0701	0.2411	0.8437**	0.7933**
(1.8507)*	(1.2881)	(2.1125)*	(2.5044)**	(8.8733)**		
0.0003		0.0278	0.0702	0.2445	0.8353**	0.7890**
(2.1503)*		(2.6416)**	(2.4826)**	(8.9533)**		
0.0004		0.0309	0.0900	0.2568	0.7866**	0.7284**
(2.5869)*		(2.6379)**	(2.9152)**	(8.4760)**		

Note: Figures in parentheses are *t*-values. The significance of the regression coefficients is tested using a one-tail test and the significance of the coefficients of multiple determination is tested with the *F* test. *CR8*=eight-establishment concentration ratio; *MES*=minimum efficient scale; *ACR*=absolute capital requirement; *AS*=advertising-sales ratio; *ETP*=effective tariff protection; *OWS*=ratio of output produced by foreign firm to total industry output; *GR*=growth of market demand; *ID*=dummy variable separating "closed" industries from the rest; *K/O*=capital-output ratio; and *XP*=export-output ratio.
**=Coefficient is significant at 1 percent level.
*=Coefficient is significant at 5 percent level.
†=Coefficient is significant at 10 percent level.

[15] The specialization ratio (ratio of value of principal products to industry output) for these industries is less than 80 per cent.

[16] The nonsignificance of the concentration ratio is also encountered in some of the major studies for the advanced economies. See for example [11] [13] [17].

that X-inefficiency and various forms of "expense preference" absorbed part of the actual profits into cost. The establishment concentration ratio tends to understate the actual degree of market power in industries where multi-plant operations are common. In addition, the nonsignificance of the concentration ratio in the context of multiple regression analysis can be attributed to multicollinearity among concentration ratio, economies of scale, capital requirements, and advertising-sales ratio variables. Theory suggests that high level of market concentration often results from and is maintained through barriers to entry [28]. The multiple regression equation with concentration ratio as the dependent variable is estimated as

$$CR8 = \underset{}{0.3971} + \underset{(0.0549)}{0.0219}\,MES + \underset{(1.6691)}{0.0140}\,ACR + \underset{(2.3406)}{3.1167}\,AS,$$

$$R^2 = 0.2505.$$

The F test shows the three variables to be jointly significant at the 5 per cent level, the coefficient of ACR being significant at the 10 per cent level, and the coefficient of the AS variable being significant at the 5 per cent level.

The proxies for the three types of entry barriers all have the theoretically expected signs and are statistically significant at the 1 per cent level. The economies of scale variable appears to be strongest and the advertising-sales ratio next. The significance of the latter can be questioned as industry sales appear in the denominator of the price-cost margins and the advertising-sales ratio, raising the possibility of a spurious ratio correlation. However, it has been maintained that a spurious correlation does not arise where the ratios themselves represent hypotheses to be tested [21, pp. 400–402].

The two trade-related variables come out with the expected signs and are both statistically significant at the 5 per cent level. The results suggest that exports have a negative influence on industry price-cost margins whereas tariffs enable producers to reap high domestic profits. Direct foreign investment does not have the expected effect on industry profitability.

The growth of the market has a significant positive impact on price-cost margins. The coefficient of the dummy variable is positive and significant at the 1 per cent level indicating that industries which are closed to entry exhibit, on the average, higher price-cost margins than industries where entry is not blocked by administrative controls.

Equation (1b) is estimated without the DFI variable. However, the size of the coefficients and the level of significance of the remaining explanatory variables are unaffected. The capital requirement variable is excluded from equation (1c) in addition to DFI. The coefficient of concentration ratio is now significant at the 10 per cent level.[17]

[17] The behavior of the coefficient of concentration ratio when the capital requirement variable is present is symptomatic of the common estimation problem when explanatory variables are highly collinear. Severe multicollinearity results in estimated regression coefficients which (1) are sensitive to changes in the specification of the model and (2) possess high standard errors. When a collinear variable like capital requirement is introduced, it is not surprising that the coefficient of the concentration variable decreases in significance.

TABLE II

REGRESSION EQUATIONS EXPLAINING PRICE-COST MARGINS

Equation	Intercept	*CR8*	*MES*	*ACR*	*AS*	*XP*
Sample of 24 consumer goods industries:						
(2a)	0.0652	0.0408 (0.8915)	0.6259 (2.6946)**	−0.0022 (0.3582)	0.9959 (2.9197)**	0.0335 (0.72112)
Sample of 18 producer goods industries:						
(2b)	0.1309	−0.0764 (1.3545)	0.5071 (1.9498)*	0.0099 (0.6884)	0.5509 (1.0372)	−0.0037 (1.1662)

ETP	*OWS*	*GR*	*ID*	*K/O*	R^2	Adjusted R^2
0.0003 (1.3204)	0.1240 (2.2535)*	0.0109 (0.7039)	0.0444 (1.0677)	0.2696 (7.5525)**	0.8758**	0.7802**
0.0003 (0.6125)	0.0431 (0.5927)	−0.0014 (0.0452)	0.0424 (0.8124)	0.1741 (2.5101)**	0.9299**	0.8179**

Note: Figures in parentheses are *t*-values; asterisks refer to levels of significance as indicated in Table I; all abbreviations are the same as in Table I.

On the whole, the multiple regressions "explain" over 70 per cent of the variance in the price-cost margins across industries in the sample.

In a cross-section model of this nature the error term is likely to vary for different observations. Previous studies have shown that the profit rates vary either with size of the industry or degree of seller concentration [11] [13]. We employ the method suggested by Goldfield and Quandt to test for the presence of heteroscedasticity in the residuals of equation (1a) [14].[18] The value of the F statistic is 1.4392 which is less than F 0.05 (9, 9) = 3.18. Hence, the null hypotheses of homoscedasticity is accepted—the variance of the residuals does not vary with the level of seller concentration.

To evaluate the importance of buyer characteristics and other influences on the demand side of the market as sources of differences in price-cost margins, an analysis is made for two separate subsets of consumer goods industries and producer goods industries.[19] Table II presents the regression results for the two industry subsets. The coefficients of the concentration ratio in both the consumer

[18] The industry observations are ranked according to value of concentration ratio. Two central observations are omitted, leaving for the two subsamples a total of twenty observations each.

[19] Separation of industries into consumer goods and producer goods industries follows the Kaysen and Turner classification [20, pp. 324–28]. Consumer goods categories include consumer durables and nondurables. Producer goods categories include material input and investment goods industries. There are seven industries in our sample that do not fall into any of the Kaysen and Turner classifications. Categorization of these industries is made with the help of the *Peninsular Malaysia Input-Output Tables for 1970*. If 80 per cent or more of an industry's output goes to final consumption, it is classified as consumer and if 50 per cent or more goes to investment plus material inputs it is classified as producer goods. When no category has 50 per cent or more, the industry is classified according to the largest output category.

goods and producer goods industries are not statistically significant from zero. The economies of scale variable is significant at the 1 per cent level in the consumer goods subsample but is significant at the 5 per cent level in the producer goods subset. The advertising-sales ratio appears as the most significant determinant of price-cost margins in the consumer goods industries but turns out to be insignificant in the producer goods industries. This suggests the importance of product differentiation in creating market power in consumer goods industries. Producer goods markets are characterized more by quality specifications and other "objective" purchasing criteria, with lesser emphasis on product differentiation by image and brand. The DFI variable is significant at the 5 per cent level in the consumer goods industries. The result indicates that product differentiation constitutes a major source of earnings from direct investment. The relatively few significant variables in the consumer goods and producer goods equations is not totally unexpected in view of the small degrees of freedom in each industry subsample.[20]

A Chow test is performed to check whether any significant differences exist in the estimated parameters of the two subsets of industries. The computed F value is 1.013 which is less than F 0.05 (11, 20) = 2.23. The null hypothesis that sets of coefficients belong to the same structure cannot be rejected.

IV. SUMMARY AND CONCLUSION

The foregoing analysis offers support to the structure-performance hypothesis. In particular, it has demonstrated the relevance of the industrial organization model as a tool for analyzing problems of allocative efficiency in the manufacturing sector of LDCs.

As predicted by conventional theory, barriers to entry exert a significant positive influence on inter-industry differences in price-cost margins. The impact of seller concentration on industry profitability, however, appears to be weak, although statistical results are somewhat obscured by the presence of multicollinearity which makes interpretation of the estimated coefficient difficult. International trade has considerable impact on domestic profitability; industries protected by tariff barriers have higher price-cost margins whereas industries which are export-oriented display more competitive pricing behavior. Direct administrative control on entry into certain industries has resulted in high price-cost margins. Direct foreign investment has significant influence on profit only in consumer goods industries.

Our analysis has some implications on policy aimed at creating a competitive industrial environment and maximizing consumer welfare. The study has identified key structural variables to achieve these objectives which are within the control of policymakers. Judicious dismantling of the existing tariff structure would seem to be the most effective policy measure to promote more competitive market

[20] The size of the standard error of a regression coefficient varies inversely with the number of observations in the sample [33, p. 65].

conduct. Import discipline is crucial in small domestic markets where concentration seems inevitable if excess capacity is to be avoided. Technical economy of scale barriers to entry, to some extent, can be overcome by the choice of appropriate technologies induced through corrective relative factor-price policies. Greater emphasis on export promotion would accelerate growth and also improve allocation performance in the industrial sector. Consumer welfare can be further enhanced by minimizing the wasteful use of resources through strict control over corporate advertising and other related product differentiation activities.

The Malaysian government has set up large number of public enterprises to spearhead the participation of the indigenous community in the manufacturing activities [24, pp. 316–17]. These corporations could also be structured and managed in a way that will effectively counteract the market power of private firms in concentrated industries [32, pp. 283–86].

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APPENDIX

SOURCES OF DATA

All industry data are taken from the *Census of Manufacturing Industries, West Malaysia, 1968,* and *Survey of Manufacturing Industries, Peninsular Malaysia, 1969, 1970* (2 Vols.), and *1971* (2 Vols.), published by the Department of Statistics.

Price-Cost Margins: *Census 1968,* Tables 2, 62, and 67; *Survey, 1969,* Tables 1, 72, and 77; *Survey, 1970,* Vol. 1, Table 1, and Vol. 2, Tables 313 and 317; *Survey, 1971,* Vol. 1, Tables 2 and 39, and Vol. 2, Table 346.

Concentration Ratio: The maximum and minimum output share of the largest eight establishments are computed from the following formulae:

$$C_m = \frac{A-(N-8F)}{TO}, \qquad C_n = \frac{8(A/N)}{TO},$$

where C_m = maximum possible share of total output for the largest eight establishments; C_n = minimum possible share of total output for the largest eight establishments; A = total output in the largest class size; N = the number of establishments in the largest class size (for $N<8$ the top two class sizes were combined); TO = total output of the industry; and F = the lower limit of the largest class size.

The frequency distribution of output size classes for industries are reported in *Survey, 1971,* Vol. 2, pp. 2–277.

Capital-Output Ratio: Net fixed asset data obtained from *Survey, 1971,* Vol. 1, Table 26.

Minimum Efficient Scale: Computed from frequency distribution of output size class as reported in *Survey, 1971,* Vol. 2, pp. 2–277.

Advertising-Sales Ratio: Advertising expenditure from *Survey, 1970,* Vol. 2, Table 314, and *Survey, 1971,* Vol. 1, Table 39.

Direct Foreign Investment: Data on total output produced by foreign establishments are obtained from tables under the heading of "Principal Statistics by Ownership" in *Survey, 1970,* Vol. 1 and *Survey, 1971,* Vol. 2.

Exports and Imports: *West Malaysia Annual Statistics of External Trade, 1970* (2 Vols.), and *1971* (2 Vols.).