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MARKET STRUCTURE, ENTRY, AND PERFORMANCE IN KOREA

Kap-Young Jeong and Robert T. Masson*

Abstract—This paper applies a recursive model of structure–entry–performance with structural feedbacks to 62 Korean manufacturing industries for 1976–81. The results strongly support the market power hypothesis. The results also indicate that, despite active government intervention, the invisible hand is working: structure is evolving as expected with high profits leading to entry and consequently lower profits. However, there is little support for limit pricing hypotheses in this explosively growing economy.

I. Introduction

WE test the structure → conduct → performance, with feedbacks, paradigm using Korean data. There has been little S → C → P → S research for the "Newly Industrialized" Countries (NICs). (Exceptions include Chou (1988) and Lee (1986).) NICs present different challenges and opportunities for testing. Korea's growth has been explosive. Its manufacturing sector grew at a real rate of 20% over 1966–77, a 900% increase. The government takes a strong hand, potentially speeding or subverting the invisible hand. Despite imports that make market boundaries hard to define uniquely, protection insulated Korea's domestic markets through the early 1980s. Domestic markets are unusually well-defined geographically, as it is only six hours by road to any market.

Prior to the 1980s Korea was protectionist, it subsidized firm growth,[1] encouraged mergers and interfirm agreements. Its industrial policy was notable for its active intervention, strong export orientation, and bias towards "bigness." Given imperfections in capital markets, one goal was to create domestic profits to fund investments and export expansion. Profits could better be attained by large firms in concentrated domestic markets. The legacy is high concentration[2] and predominance of large "Jaebul": independent businesses affiliated through financial ties (including stock ownership). Market power may have been an engine of growth, this we do not test. What we do test is whether market power was indeed an outcome of high concentration in Korea. And now that Korea has changed its focus post take-off to a procompetitive stance,[3] we can ask about the legacy of high concentration.

Our model examines simultaneity between market structure and performance as do Martin (1979), Masson and Shaanan (1982, 1984, 1987), Geroski, Masson and Shaanan (1987) and Jeong (1985). The next section presents the model. Prior to presenting the profit equation we review latent variable tests for limit pricing (Masson and Shaanan, 1982). The results in section III support the market power hypothesis and (despite government activism) an invisible hand hypothesis: Entry occurs where profits are high, and when entry occurs profits fall as expected in free markets. There is, however, little support for limit pricing.

II. The Model

Profits in $t-1$ attract entry in t, which determines concentration at the beginning of $t+1$. Profits through $t+1$ are generated by initial concentration and entry. Factors affecting entry are entry barriers and growth. Profits are affected by these and trade. Behavioral interpretations are: (1) If concentration follows minimum efficient scale, market forces are pushing towards economic efficiency; (2) If concentration determines profits, this suggests market power; (3) If measured barriers reduce entry, they are valid measures of barriers; (4) If barriers influence profits, there may be entry deterrence; (5) If (3) and (4) are related in a fashion to be discussed, this supports limit pricing; (6) If entry reduces profits this reflects the competitive nature of the entry process.

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[1] Exporters were granted subsidized loans and importing licenses.

[2] *The Economist* (Feb. 20, 1988) cites the unusually high concentration in markets and of ownership as Korea's unfavorable legacy of growth.

[3] In the 1980s Korea introduced antitrust, reduced its market power strategy and restricted intercorporate shareholdings and credit access.

TABLE 1.—THE MODEL

$$CR(t) = \alpha_0 + \underset{(+)}{\alpha_1 B} + \underset{(-)}{\alpha_2 GRO(t-1)} + \underset{(-)}{\alpha_3 ENT(t-1)} + \mu(t) \quad (1)$$

$$ENT(t) = \beta_0 + \underset{(?)}{\beta_1 CR(t)} + \underset{(-)}{\beta_2 B} + \underset{(+)}{\beta_3 \Pi(t-1)} + \underset{(+)}{\beta_4 GRO(t-1)} + \epsilon(t) \quad (2)$$

$$\Pi(t) = \gamma_0 + \underset{(?)}{\gamma_1 CR(t)} + \underset{(?)}{\gamma_2 B} + \underset{(-)}{\gamma_3 ENT(t)} + \underset{(?)}{\gamma_4 GRO(t)} + \underset{(?)}{\gamma_5 EXS(t)} + \underset{(?)}{\gamma_6 IMS(t)} + \eta(t) \quad (3)$$

Note: The variables are defined as:
$CR(t) \equiv$ industry 3 firm concentration in period t,
$B \equiv$ a vector of industry entry barriers in period t,
$ENT(\tau) \equiv$ entry of new firms in period τ,
$\Pi(\tau) \equiv$ industry profit rate in period τ,
$GRO(\tau) \equiv$ industry growth rate in period τ,
$EXS(t) \equiv$ industry export-sales ratio in period t,
$IMS(t) \equiv$ industry import-sales ratio in period t,
$\mu(t), \epsilon(t), \eta(t) \equiv$ stochastic disturbance terms.
Expected signs are in parentheses.

Assuming linearity (we test for this) we present our model in table 1. There are three obvious sources of simultaneity: between profits and concentration or entry, between advertising and profits, and between international trade and profits. We handle the first by treating the variables affecting concentration, $CR(t)$, as predetermined or exogenous, assuming the concentration-profits link is recursive through entry. A sufficient condition for recursive identification is that error covariances be zero. This was verified empirically.[4] Advertising and profits are not recursive, we rejected the need to instrument with a Hausman test. We treat trade *as if* exogenous.[5] Without an explicit trade model we cannot test for identification so we test robustness by using alternative specifications.

A. The Concentration Equation

Concentration is defined as the share of the three largest firms measured at the beginning of t. This is determined by barriers, past growth, and entry. Concentration equations are normally called estimates of long-run concentration. The assumption that errors are distributed around long-run levels seems unlikely for Korea. Our equation reflects concentration at this stage of evolution, its error structure is used to test for recursive identification.

Scale economies play a major role in explaining concentration in developed countries,[6] for NIC's scale economies and their effects may differ. Labor-intensive production may prevail due to low wages or newer (typically more capital intensive) technologies may prevail. Scale economies may be less important if an industry is in flux, growth is rapid (Stigler, 1939) or the government intervenes.

Minimum efficient scale (MES) is proxied by the Florence median: average plant size at the midpoint of industry output relative to the domestic market (dividing by VS (value of shipments), minus X (exports), plus M (imports)). To capture disadvantages of sub-optimal operation we use the Cost Disadvantage Ratio (Caves et al., 1975). CDR is the ratio of the value added per worker in smaller plants to that for the remaining plants. MES is only a barrier if the CDR is small, so we use $MES^c \equiv MES(1 - CDR)$.

To measure an Absolute Capital Cost barrier we use $ACC = MES * (\text{industry assets})$. Credit markets are less perfect in Korea so one might

[4] Example correlations are $\text{Corr}(\mu, \epsilon) = 0.016$, $\text{Corr}(\epsilon, \eta) = -0.031$, $\text{Corr}(\mu, \eta) = -0.054$.

[5] The Hausman test in principle permits treating a variable like advertising as exogenous when exogenous product characteristics that determine advertising lead to wide variations relative to endogenous variations (steel versus automobiles). If exogenous factors lead some products to be imports (oil) and others exports (computers) and the exogenous variation is large relative to the endogenous variation then the treatment *as if* exogenous will be robust.

[6] For example, Martin (1979), Hart and Clarke (1980), Lyons (1980), Geroski, Masson and Shaanan (1987).

expect ACC to be important. For product differentiation we use the advertising–sales ratio (ASR). We assume all advertising can be attributed to domestic sales and use $ASR \equiv A/(VS - X)$, where A is advertising.[7]

Lagged growth and entry are included. Growth might attract entry and lower concentration, past entry should capture entry realizations above or below expectations.

B. *The Entry Equation*

Entry is defined by the rate of change in the number of firms $((n_t - n_{t-1})/n_{t-1})$.[8] It is assumed to be a function of concentration, barriers, past profits and growth. Other entry studies presume the invisible hand determines entry (Orr, 1974; Masson and Shaanan, 1982, 1984, 1987; Baldwin and Gorecki, 1987; Shapiro and Khemani, 1987). In Korea this is less clear, our entry equation can be used to see if entry occurs *as if* it were a freer market.[9]

High concentration may lead to expectations of either cooperation or of retaliation post entry.[10] That barriers retard entry is tautological if they exist. Growth and profits, *if they raise expectations for entrant profits*, should attract entry.

C. *Latent Variable Testing for Limit Pricing*

The limit pricing test depends upon the "entry forestalling" condition, the zero entry profit level. The latent variable Π^f is defined by solving (2) for $ENT = 0 \Rightarrow \Pi^f = -(\beta_0/\beta_3) - (\beta_1/\beta_3) CR - (\beta_2/\beta_3)B - (\beta_4/\beta_3)GRO$.

The static model with an exogenous lag predicts that a monopolist with low barriers would maximize short-run profit, Π^m because the present value of Π^f forever is less than that for Π^m followed by entry and lower profits. As barriers increase, at some point Bain's "ineffectively impeded entry" case switches to limit pricing or "effectively impeded entry." Optimal profits fall to $\Pi^f(CR, B, GRO)$, with $\partial\Pi^f/\partial B > 0$. Very high barriers mean entry is "blockaded," $\Pi^f(\cdot) = \Pi^m$. A monopolist's profits would be Π^m for very high or low barriers, but lower for intermediate levels.

The 1970s had dynamic models of Kamien and Schwartz (1971), Baron (1973) and Gaskins (1971). In these (expected) entry rates increase as price rises above Π^f, so "optimal profits," Π^o, is generally between Π^f and Π^m unless entry is blockaded (or the monopoly is "eliminating" fringe firms). For reasons similar to Bain's, at low barriers one *may* have $\partial\Pi^o/\partial B < 0$, but eventually Π^o must rise to Π^m.

The 1980s seminal paper of Milgrom and Roberts (1982), established limit pricing as an equilibrium in an incomplete information game. Extensions by Matthews and Mirman (1983) and Saloner (1982) reveal that the actions of a limit pricing firm are similar to those in the 1970s models, $\Pi^m \geq \Pi^o \geq \Pi^f$.

Our test for limit pricing *starts* with the comparative statics result: $\Pi^m \geq \Pi^o \geq \Pi^f$, and $\partial\Pi^o/\partial B \gtreqless 0$, and for large B, $\Pi^o = \Pi^m$. The power of the test comes from Π^o being a function of multiple barriers, $B_1, B_2, \dots$, as the ratios of their slopes between Π^o and Π^f must be identical for each. That is, if $B \equiv \alpha_0 + \Sigma\alpha_i B_i$, and $\partial\Pi^o/\partial B = k(\partial\Pi^f/\partial B)$, this implies $\partial\Pi^o/\partial B_i = k(\partial\Pi^f/\partial B_i)$ for all i. The inter-equation ratios of slopes are all equal to k.

We define the latent variable, Π^o, by assuming that if concentration is 100 an industry can achieve Π^o, but for lower concentration $\Pi^a < \Pi^o$, where Π^a is "actual profits." In linear form we identify Π^o by $\Pi^a \equiv \Pi^o + \gamma(CR - 100)$.

D. *The Profit Equation*

Profits are measured as profits on assets (accounting profits plus interest on debt as a percentage of assets). Π^a through the period is assumed to be a function of initial CR, barriers, entry, growth, export intensity and import intensity. It is illustrated as linear because linearity was not rejected empirically.

Concentration, barriers, and entry reflect domestic competition. Concentration reflects market power, whether or not it stems from coop-

[7] Most Korean exports were advertised by importers.

[8] More recent work shows that this measure of entry is not dominated by "turnover," as in more mature economies, and that it captures the effects of changes in competition (Jeong and Masson, 1990).

[9] There were few limit observations, so Tobit modelling was not called for.

[10] High concentration and price may also signal high entrant profits if collusion is easy, or low profits if collusion is fragile and entry is destabilizing. Empirically there are opposite signed results for Canada and the United States. Other hypotheses and results are discussed in Masson and Shaanan (1987).

eration.[11] Entry may reduce profits by reducing concentration, reducing incumbents' residual demand or destabilizing industry "agreement." Growth can raise or lower Π^a and/or Π^o (Masson and Shaanan, 1982). High growth may lead to "demand pull" profits or raise Π^o if it makes the opportunity cost of deterring entry too great. Alternatively, if significant entry deterrence remains optimal and growth attracts entry, then Π^o may fall. Expected growth also may lead to lower current profits in learning models. There is no a priori sign expectation, although many empirical studies support a positive relationship.

Next we have import and export intensity, defined as $IMS = M/(VS - X + M)$ and $EXS = X/(VS - X + M)$. These too have ambiguous expected signs. High prices may attract imports, or high imports may lead to low prices. Domestic market power may correlate with greater exports if marginal costs are rising (cf. White (1974)). International price discrimination may lead to a negative sign because Π^a weights both domestic and foreign sales. If high profits are earned on domestic sales and export markets are more competitive, total profit enhancing exports may lower measured profit *rates*. Khalilzadeh-Shirazi (1974) and Pugel (1978) find positive relationships between exports and profits in the United States and United Kingdom, but Pugel (1980) and Jacquemin, de Ghellinck, and Huveneers (1980) find little support for this.

A Hausman test for endogeneity would require modeling the trade sector. This is beyond our scope. We instead tested robustness of the other coefficients to alternative trade specifications. These included exclusion of the trade variables, adding instead a measure of effective tariffs and/or using trade-adjusted concentration and *MES* variables.[12] The results were robust (available upon request).

III. Empirical Results

The sample contains 62 Korean Standard Industrial Classification industries, selected subjectively as "well-defined" industries by examination of their product lines (see appendix).

TABLE 2.—ESTIMATION OF CONCENTRATION RATIOS

Independent Variables	(1) All Industries	(2) Consumer Goods	(3) Producer Goods
Constant	40.974[a]	37.495[a]	43.135[a]
	(10.366)	(6.998)	(6.913)
MES^c	1.429[a]	1.634[a]	1.274[a]
	(5.086)	(4.677)	(2.448)
ACC	0.298[a]	0.633[b]	0.277[a]
	(2.788)	(1.534)	(1.761)
ASR	3.449[a]	2.055	10.039[a]
	(2.087)	(1.031)	(1.756)
$GRO(t-1)$	0.168[a]	0.212[a]	0.116
	(2.306)	(2.238)	(0.872)
$ENT(t-1)$	−0.128[a]	−0.115[a]	−0.162[b]
	(−2.165)	(−1.587)	(−1.450)
$\bar{R}^2$	0.603	0.663	0.511
F	19.496	13.233	7.051
N	62	32	30

Notes: *t*-ratios are given in parentheses.
[a] Significant at the 5% level (one-tailed test).
[b] Significant at the 10% level (one-tailed test).

A. *Concentration*

In table 2, equation 1 is aggregated, equations 2 and 3 are for consumer and producer goods, respectively (a Chow test, $F = 3.283$, rejects aggregation). Barriers are positive and significant, excepting significance of *ASR* in consumer goods.[13] Entry is negative and significant, but only marginally for producer goods.

Growth is positively related to concentration, and significant excepting producer goods. For developed countries growth has been negatively associated with concentration. The finding for Korea may reflect: (1) Learning-by-doing may lead firms to expand shares in growing markets; (2) Successful firms may trigger "take-off" leading to high firm shares and high growth (Demsetz, 1973); (3) New markets may have fewer firms, and greater growth *rates*; (4) The government may consolidate firms in key growth markets.

The results generally appear like those in free market economies. MES^c is important in determining *CR*, as it should be if the invisible hand were at work. If each firm had one minimum efficient scale [*MES*] *plant*, concentration would

[11] Given the above, if $\Pi^0 \equiv \beta_0 + \beta_1 B + \beta_2 CR$, $\Pi^a = (\beta_0 - 100\gamma) + \beta_1 B + (\beta_2 + \gamma)CR$. Decomposing the coefficient on *CR* in Π^a, the β_2 reflects the influence of power through entry deterring (or attracting) effects and the γ the ability to exercise power.

[12] Trade adjustments decrease *CR* by an average of 6.8 percentage points for the total sample, 9.6 points for producer goods and 4.1 points for consumer goods.

[13] Using *CR* adjusted for trade we find *ASR* significant for consumer goods.

TABLE 3.—ESTIMATION OF PROFIT AND ENTRY RATES

	Entry	Profit Rates[c]		
Independent Variables	(1)	(2) Aggregated	(3) Expansion	(4) Contraction
Const.	−18.807	5.418[a]	5.964[a]	4.167[a]
	(−0.912)	(6.221)	(7.355)	(3.481)
CR	0.592[a]	0.044[a]	0.034[a]	0.049[a]
	(2.120)	(3.497)	(2.248)	(2.429)
MES^c	−1.086[b]	0.070[b]	0.093[a]	−0.051
	(−1.611)	(1.490)	(1.722)	(−0.679)
ACC	−1.101	−0.036[a]	−0.031[a]	−0.008[b]
	(−0.460)	(−3.941)	(−3.319)	(−1.218)
ASR	−6.516[a]	0.654[a]	0.532[a]	0.834[a]
	(−1.802)	(3.487)	(2.415)	(3.286)
GRO	0.086	0.055[a]	0.039[a]	0.061[a]
	(0.332)	(3.361)	(3.244)	(3.470)
ENT	n.a.	−0.014[a]	−0.009[b]	−0.009
		(−2.536)	(−1.418)	(−1.113)
EXS	n.a.	−0.021[a]	−0.022[b]	−0.006
		(−1.953)	(−1.530)	(−0.378)
IMS	n.a.	−0.034[a]	−0.022[a]	−0.013
		(−2.527)	(−1.674)	(−0.906)
Π^a	1.759[b]	n.a.	n.a.	n.a.
	(1.352)			
$\bar{R}^2$	0.165	0.677	0.563	0.453
F	2.806	16.908	12.242	8.672
N	62	62	62	62

Notes: n.a. = not applicable. *t*-ratios are given in parentheses.
[a] Significant at the 5% level (one-tailed test).
[b] Significant at the 10% level (one-tailed test).
[c] Weighted least squares, weighing by the root of the value of shipments.

be $CR = 3 * MES$, the top three Korean firms appear to be somewhat over double minimal optimal size predicted by the *MES* proxy.[14]

B. *Entry*

The entry equation is equation 1 in table 3. Pooling of producer and consumer-goods was not rejected (Chow test $F = 0.184$) and multicollinearity was not a problem[15]

A precondition for limit pricing is that entry respond to profits. Lagged profit, Π^a, is significant at the 10% level. The next question is whether the barriers proxies are valid. All three proxies have the expected sign, although *ACC* is insignificant. They are *not* rejected as measures of barriers.[16]

CR is positive and significant. In Canadian studies *CR* is negative and significant whereas in the United States it is positive and marginally significant.[17] Masson and Shaanan (1987) discuss these findings and the theories associated with either sign (signals of expected "cartel instability" or "retaliation" for negative, signals of expected "cartel stability" or "accommodation" for positive). In Korea this may additionally reflect policy. In take-off the government encouraged entry to new, and hence concentrated markets. Testing whether this is a result of policy is beyond our scope.

C. *Profits*

The results for profit rates on assets[18] are in table 3. Profits may be non-linear in barriers, but linearity was not rejected. Equation 2 reports Π^a over one business cycle, 1976 to 1981. Pooling the

[14] We employed a Belsley-Kuh-Welsh (1980) test for multicollinearity. The largest condition index was 8.504, where "problems" usually start for values above 20 or 30.

[15] Despite corr(MES^c, CR) = 0.66, the highest condition index was 11.998.

[16] In Masson and Shaanan (1987) *ACC* is dropped in a study using Canadian data because of a perverse sign *in the entry equation*.

[17] The Canadian and Korean studies both use the net number of entrants as the dependent variable (the U.S. study uses shares).

[18] Similar results were obtained for *PCM* and similar but weaker results for profits on equity (Jeong, 1985).

cycle can be rejected (Chow test $F = 3.772$): we disaggregated expansion in equation 3, contraction in 4. We do not report disaggregate producer and consumer goods estimates (the highest Chow test $F = 1.462$).

The coefficient on *CR* is significant in every model:[19] market power plays a significant role in profitability.[20] Entry, which was positively correlated with lagged profits, now is shown to depress current profits, the effect is significant only for the full cycle and expansion results.[21] These results suggest that structure creates power, but that this eventually leads to entry, a structural feedback that reduces power in the long run.

The results on the barrier measures are mixed. *ASR* is consistently positive and significant, but *ACC* is *negative* and generally significant.[22] The sign of MES^c is positive and significant during expansion and negative in the contraction.[23] The trade variables are both negative, and insignificant for the contraction.

The negative sign on *ACC* led to specification tests. There was no multicollinearity problem[24] and *ACC* remains negative and significant after excluding *CR* and *MES*. There was evidence of tail dependence: five Heavy Industry and Chemical (HIC) sector industries had large *ACC*s and low Π^as.[25] Deleting these, *ACC* remains negative, albeit insignificant.[26]

With no limit pricing it is possible that high capital costs could reduce profits on assets.[27] Clearly, little support is found for limit pricing. Comparative statics of limit pricing permit either sign in Π^o, but the ratio of each barrier's slope in Π^o to that in Π^f must be constant. By construction, this means a constant ratio with those in *ENT*, and *a consistent sign in* Π^o and hence in Π^a. The mixed sign results observed here are not consistent with limit pricing.

Limit pricing is not always optimal. It may not work in some environments and it may be too costly in others. As a check, we calculated our two latent variables at industry means. We found $\Pi^o = 15.6\%$ and $\Pi^f = 4.9\%$ and mean $\Pi^a = 9.8$. Given our measure of profit rates, zero economic profits are reached when $\Pi^a = \rho$, where $\rho \equiv$ (opportunity cost of capital).[28] This suggests that entry forestalling in the mean industry would require negative economic profits: *Limit pricing appears to be too costly to pursue.*[29]

IV. Conclusions

Due to imperfect capital markets, Korean policy in the 1970s was in part designed to create domestic profits to fund investment. They encouraged large scale operations, generating concentration and market power. The resulting profits could be used for investment. We do not test if power aided growth, but do demonstrate that high concentration did lead to high profits. In our model of structural feedback we find that market concentration evolved as if facing the invisible

[19] One-tailed tests are footnoted, but *CR* is significant in two-tailed tests as well. In specifications with trade adjustments this result was robust, the significance on *CR* dropping to the 10% level in only one expansion specification.

[20] These results differ from Lee (1986). He found concentration and economies of scale insignificant in explaining 1970 profitability (on total capital) for 51 Korean industries. The time period was in early "take-off" for Korea, and his scale variable was measured using Japanese data as a proxy.

[21] Recent data have been made available that show that the entrants in the expansion had shares averaging 4% at the end of the upswing and 16% by the end of the downswing. The effects of entry on profits probably have some lag that is not modeled here.

[22] Note the tables footnote one-tailed levels. As *ACC* has the "wrong" sign, a two-tailed test is appropriate, leaving contraction significance at 20%.

[23] Low barriers may influence profits through the entry variable: given any initial concentration and profit rate. The entry equation suggests more rapid entry with lower barriers and the profit equation suggests that entry depresses profits. The limit pricing test predicts a consistent effect of barriers, *ceteris paribus*.

[24] The highest condition index was 12.345.

[25] The average *ACC* for these five industries is 94.74 billion Won, while the mean for the entire sample is 14.44 billion Won. The average profit rate for these five industries is 6.84%, while the mean is 9.80%.

[26] *PCM* and return on equity results were similar. Coefficients on other variables were not sensitive to excluding *ACC*, although significance of *MES* rose.

[27] An alternative is that incentives to expand HIC's may have led to over expansion. To test this we modeled policy intervention using a measure of subsidized loans. This was insignificant and did not switch the sign on *ACC* (even making it significant for the contraction—available upon request).

[28] Accounting profits are $\Pi = R - M - W - rD$, where R $\equiv$ revenues, $M \equiv$ materials costs, $W \equiv$ wage bill, $D \equiv$ debt and r is interest rate. Economic profits are $\Pi^e = R - M - W - rD - \rho^e E$, where $E \equiv$ equity and $\rho^e \equiv$ opportunity cost of equity. Since assets are equal to $D + E$, if $\rho^e = r = \rho$, we can write zero economic profit as $((R - M - W)/(D + E)) = \rho$, where the left side of this expression is accounting profits plus interest on debt.

[29] Despite subsidized credit, most firms in Korea were generally resorting to non-subsidized credit at the margin. The real interest rates in Korea tended to be relatively high, so current earnings would have a large present value weighting.

hand. Entry responded to high profits, profits were eroded in the entry process. Higher concentration emerged where economies of scale, capital requirements and product differentiation were greater. There is no support for "limit pricing" in these Korean data. The opportunity cost of deterring entry appears to be prohibitive in Korea, so limit pricing appears to be non-economic.

In 1981 Korea started to reverse its pro-market power policy, passing its first antitrust law. The previous policy *may* have aided take-off, but power seems less desirable as the economy has matured. Our evidence supports the popular interpretation—the legacy of the earlier policy is continuing high domestic market power.

DATA APPENDIX

The data are for 62 Korean manufacturing industries of which 32 are consumer goods. Sample selection was determined by the principle that KSIC industry classifications reflect microeconomic markets. We subjectively excluded too broadly, narrowly, or vaguely defined industries. Our sample includes 48 four-digit and 14 five-digit SIC industries. Although five-digit SIC industries are on average more narrowly defined, they tend to be closer to our view of markets. Where data were available we used five-digit data. We excluded many over-inclusive four digit industries. The mean concentration of our five-digit industries was 52%, and the overall sample mean was 58%.

Concentration data were provided by the Korea Development Institute and the Economic Planning Board, *Report on Mining and Manufacturing Survey*. For a few four-digit industries, concentration ratios were approximated by use of shipments-weighted averages of five-digit components. If the components were far different in concentration, the observation was dropped. *CR* for each industry is reported in Jeong (1985).

Exports and imports come from the Korean Department of Customs Administration, *Statistical Yearbook of Foreign Trade*, 1978. We reclassified the trade data according to KSIC industry definitions.

MES is derived from the KSIC manufacturing census for each year and then averaged for 1976–80. *ENT* is also from the manufacturing census, $ENT(t-1)$ is the net change in the number of firms for 1975–1977, while $ENT(t)$ is for 1977–1981.

All other variables use the above, augmented by data from the Bank of Korea, *Financial Statement Analysis* and the Korea Development Bank, *Financial Analysis*. $\Pi^a(t)$ is defined for the study period and $\Pi^a(t-1)$ is for 1974–1976.

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