

IS THERE REALLY UPWARD MOBILITY IN THE CONTEMPORARY INTERNATIONAL SYSTEM?

Evidence from the South Korean Trade Structure

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Export-led industrialization strategies have become the new orthodoxy for development economics, replacing the old mainstream philosophy of import-substitution industrialization. The experience of rapid economic growth in East Asian NICS (Newly Industrialized Countries), including Korea, is no doubt one important reason for this shift.

It has, however, been questioned whether all developing countries can simultaneously pursue export-led industrialization (Cline 1982). Since all developing countries are not at the same state of industrialization, the "fallacy of composition" applies only to similarly advanced countries (Ranis 1985). Developing countries are likely to grow in a pattern we can metaphorically call "wild geese flying" within a global export-led industrialization.

In other words, export-led industrialization is a probable mechanism of individual more than collective mobility in the international economy. In this respect,

mainstream economist views coincide with that of the so-called world system approach (see Wallerstein 1979; Evans 1979; Cumings 1987). This characterization may provide the world system approach with theoretical underpinning, which is something it seems to need badly.

An important question in this context is whether upward mobility can really be achieved by export-led industrialization, because it is based on the so-called new international division of labour, where developed countries specialize on technology-intensive industries and developing countries concentrate on labour-intensive products. Can this asymmetric relationship be overcome with time? The question is especially important to South Korea, which is now a nationalist-ridden state. Indeed, there has been a persistent tendency amongst South Korean economists to insist that no upward mobility is possible under export-led industrialization, regardless of rapid economic growth and expansion in trade volumes. The fact that South Korean exports have moved to more technology-intensive products over time does not provide an answer to the question; as exports have risen in technological content, so have imports. Production and exports of technology-intensive goods depend heavily on imports for complex components. This feature is most salient in offshore production of export goods. Then, a developed country's importer provides the developing country's producer with sophisticated components, and ships back finished goods after simple local manufacturing. The apparent technical sophistication of a developing country's exports may belie the reality (Lee 1986). So, if South Korea's overall position of comparative advantage is built with offshore production, the trend is not so clear-cut as it might seem.

Notwithstanding the importance of this problem, there have been few formal studies of it. Here I aim to test whether South Korea has actually experienced any upward mobility in the international economy by analysing its trade structure changes over time. I employ a simple econometric model.

Scheme of analysis

I have done a regression analysis, using a cross-section of data from 137 manufacturing industries for the years 1970, 1975, 1980 and 1985, to investigate determinants of trade patterns. Information about trade patterns is used as a dependent variable and information about skill and capital intensity for independent variables. Technological intensity would fit my purpose more than skill intensity, but the two are difficult to distinguish empirically. Skill intensity is used because available data is better in this area. Capital intensity is used since it has traditionally been regarded as an important determinant of trade patterns. The determinants are then cross-checked for structural changes. Specifically, I have tested the coefficients of regression in subsequent years. The four years chosen for my analysis reflect simply the greater amount of data available for these years.

The dependent variable is simply net exports divided by the total volume of trade (for the merit of this, see Ballance *et al* 1987). Thus:

$$NRX_i = (\text{exports} - \text{imports}) / (\text{exports} + \text{imports});$$

$i = 1970, 1975, 1980, 1985.$

The independent variables, measured in Japanese industries, are:

- 1) SKLi = per capita wages and salaries;
- 2) KLi = per capita value of tangible fixed assets;
i = 1970, 1975, 1980, 1985.

SKLi and KLi respectively represent skill intensity and capital intensity.

I have chosen Japanese industries rather than Korean-owned companies for the following merits: First, this can control the existence of non-competitive imports, making the two independent variables better able to represent skill and capital intensity; Second, this helps control the effects of factor market distortions, which are prevalent in developing countries such as South Korea. I have run an ordinary least square model, then used the Chow Test to check coefficient consistency. I expect a negative coefficient for SKLi in all years. If South Korea's skill position improves, however, this coefficient will increase (decrease in absolute value) over time.

Statistical results

Results for estimations in each year considered are given in Table I. R² results are not high, especially for 1985. Considering, however, that I use cross-section data and only two independent variables, the results are not seriously low. The capital intensity variable is statistically significant only in 1970 in the second equation. So, capital intensity has not generally been a significant determinant in South Korea's trade patterns. On the contrary, the coefficient of skill intensity is consistently negative with strong statistical significance.

TABLE I
DETERMINANTS OF SOUTH KOREA'S TRADE PATTERN

Independent Variables	Dates:			
	1970	1975	1980	1985
Constant	0.921** (4.478)	1.439** (7.654)	1.185** (6.190)	0.727** (3.691)
SKL	-0.550** (-6.323)	-0.567** (-7.130)	-0.462** (-5.705)	-0.268** (-3.223)
KL	0.0218* (2.644)	0.00445 (0.591)	0.00484 (0.631)	-0.00202 (-0.256)
R ²	0.238	0.346	0.247	0.116
R-2	0.226	0.336	0.236	0.102
F value	20.893**	35.445**	22.005**	8.762**

Notes: Figures in parentheses are t-values; ** and * denote statistical significance at 1% and 5% respectively (2-sided tests for t-values).

As for trends over time, the coefficient of skill intensity falls or stays relatively stable initially, then rises from 1975 to 1980. The rise accelerates from 1980 to 1985. Table II presents the results of the Chow test to determine whether we can reject the hypothesis that the coefficients of skill and capital intensity are relatively constant. The test statistic here is F (1,536). The skill intensity coefficient is only significant between 1970 and 1985 or 1975 and 1985, not in any single five year period.

The negative coefficients achieved for skill intensity confirms my expectation that South Korea has consistently specialized in unskilled labour-intensive manufacturing in

its export-led industrialization. In the 1980s, though, the situation improved.

TABLE II

TESTS ON CHANGES OF COEFFICIENTS: F VALUES

Restrictions:	SKL	KL
1970 = 1975	0.026	2.444
1975 = 1980	0.806	0.0
1980 = 1985	2.730	0.364
1970 = 1980	0.546	2.340
1970 = 1985	5.772*	4.602*
1975 = 1985	6.500*	0.338

Note: * denotes statistical significance at 5%

Concluding remarks

Using regression analysis, I have investigated determinants of the Korean trade patterns in manufacturing industries. The result identifies the fact that South Korea has concentrated on unskilled labour-intensive manufacturing. South Korea was sluggish in its initial attempts to weaken this characteristic of export-led industrialization, but has since succeeded in moving away from it. This shows that there is indeed an upward mobility in the contemporary international system, if it is exploited in the manner of South Korea. The ability of other countries to achieve similar results remains a matter for further enquiry.

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