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STRATEGIC INTERVENTIONS AND THE POLITICAL
ECONOMY OF INDUSTRIAL POLICY IN
DEVELOPING COUNTRIES

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EXECUTIVE SUMMARY

This paper draws some general lessons for industrial strategy from the experiences of three Asian countries: Taiwan, Korea, and the Philippines. It indicates that the successful efforts of East Asian governments to promote industrialization went well beyond a commitment to relatively efficient pricing policies. However, it suggests that the strategic interventions initiated by the governments of Korea and Taiwan, although quite different in character, were successful in a "hard" political environment. In "softer" political environs, such as the Philippines, strategic interventions might not promote additional growth benefits as they did in East Asia. Rather, these government strategic interventions might degenerate into rent-seeking and socially inefficient industrial growth. The paper concludes with some suggestions for what kinds of strategic interventions might be helpful in "soft" states.

Most fundamentally, the governments of Korea and Taiwan strategically intervened to address three basic development problems: transactionally costly (or inefficient) markets, limited organizational capabilities, and uncaptured positive externalities. In their broader conception of industrial development, these East Asian governments conceived of the industrialization process as a transition from a low-level equilibrium, characterized by transactionally costly markets,

limited organizational capabilities, and pervasive, uncaptured positive externalities, to a dynamic disequilibrium in which markets operate with increasing efficiency over time; participants in industry reciprocally take advantage of, and in turn create positive externalities, and organizations progressively improve their capabilities. Accordingly, Korea and Taiwan both strategically intervened in the development process, beyond simply trying to alleviate market failures, to address these issues and thereby to set in motion an accelerated industrial growth dynamic. In Korea, the government pursued a strategy we call "government-directed learning". In Taiwan, the government chose to follow a strategy of "unbalanced growth" very much in line with what Hirschman outlined in his Strategy of Economic Development in 1958. In terms of trade policy, both countries, as has been widely reported, were outward-oriented. However, their trade regimes were dualistic (protecting domestic production, while promoting exports) rather than neutral.

The examples of Korea and Taiwan are used in this paper to spell out the ways in which interventionist industrial strategies can accelerate the requisite industrial transitions in "hard" states (states whose governments are capable of devising, implementing and sustaining socially beneficial industrial policies). These East Asian NIC's are also used to delineate some relations between initial development conditions (cultural patterns, levels of human capital, market development, etc.), the character of strategic interventions in "hard" states and the nature of the subsequent industrial transitions.

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Having explained the character and success of industrial strategy in "hard" states, we then turn to the subject of the consequences of adopting similar industrial strategies in "soft" states (those more vulnerable to socially costly rent-seeking behavior on the part of powerful private interests or government officials), such as the Philippines.

The first lesson for "soft" states is that interventionist industrial strategies, such as government-directed learning as practiced in Korea, can potentially make things worse off, rather than better off, as compared to laissez faire outcomes. The combination of highly selective instruments of intervention and concentrated economic power associated with government-directed learning affords enormous opportunities for socially unproductive rent-seeking behavior on the part of business elites and government officials, opportunities that are likely to prove irresistible in "soft" states. Thus, in Korea, rents accruing to firms from government industrial policies were reinvested in making firms more competitive on world markets, while in the Philippines, similar rents accruing to selected industrial enterprises went to Swiss bank accounts.

Second, across a wide range of levels of market development, the net benefit, relative to laissez faire, of promoting endogenous expansion via the initial stimulus of lumpy, publicly-supported investments, a la Taiwan, is shown to be positive, although the magnitude of the benefits is less than in "hard" states. Even in a relatively weak state, the interventions associated with unbalanced growth could help promote sequential

externalities, while being less likely to undermine spontaneous, laissez faire industrialization than could interventions associated with purported learning strategies.

Third, as with the analysis of "hard" states, the case for interventionist industrial strategy weakens in countries with substantial initial capabilities (market and organizational). But, whereas in "hard" states the case weakens because net benefits relative to laissez faire decline but remain positive, in "soft" states the net benefits of strategies of government-directed learning in particular turn sharply negative with increases in initial levels of market development, reflecting increases in the potential for spontaneous, laissez faire industrialization with higher initial capabilities, and thus a rising opportunity cost of blocking the spontaneous process.

In short, the paper illustrates that there is no single industrial strategy appropriate for all less developed nations at all times. What matters is the closeness of fit between, on the one hand, the chosen strategy of industrialization and, on the other, a nation's economic and social environment and the kind of policies that a nation's government has the capability of administering effectively over the long haul, given the character of the political mechanisms of decision-making.

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Strategic Interventions and the Political Economy
of Industrial Policy in Developing Countries

by

Tyler Biggs and Brian Levy

Questions concerning industrial strategy are returning to the forefront of development economics after a long period in eclipse. The egregious misallocations of resources that resulted from most import-substituting strategies of industrialization led economists in the 1970s and early 1980s to analyze industrialization as a subset of the more general question of efficient resource allocation. The resultant policy recommendations, important correctives to earlier excesses, stressed the importance of 'getting prices right', of ensuring that factor and output prices reflect opportunity cost, of undistorted (meaning outward-oriented) trade policies, and of a laissez-faire attitude towards markets in general.

This paper attempts to draw some general lessons for industrial strategy from the authors' field research and related work in Korea, Taiwan and the Philippines. Field experience has strengthened our conviction that dynamically efficient industrialization is not possible in the long-run in the face of egregious misallocations of resources. But it has persuaded us also that, as earlier theorists recognized, the promotion of industrialization involves additional considerations to those of pricing policy. For one thing, as has increasingly been recognized, the successful efforts of East Asian governments to promote industrialization went beyond a commitment to relatively efficient pricing policies. More fundamentally, policy prescriptions that focus exclusively on prices implicitly assume that markets are frictionless, that

economic agents are omniscient, and that externalities are limited in magnitude, with the costs and benefits of actions largely internalized in the calculations of private decisionmakers. Contrary to the first assumption, transactions cost economists have explored the determinants of the costs of market transactions, and the character of mechanisms to conserve on these costs.¹ Contrary to the second assumption, economists who study organizations have taken as their starting point the proposition of bounded rationality, and have explored mechanisms of organizational learning.² And, contrary to the third assumption, students of industrialization and industrial policy highlight increasingly the centrality of externalities in the industrialization process.³

Taken together organizational learning, externalities and transactions costs point to a conception of industrialization that extends beyond a narrow focus on efficient allocation. In this broader conception, industrialization involves a transition from a low-level equilibrium characterized by transactionally costly markets, limited organizational capabilities, and pervasive, uncaptured positive externalities, to a dynamic disequilibrium in which markets operate with increasing efficiency over time, participants in industry reciprocally take advantage of, and in turn create, positive externalities, and organizations progressively improve their capabilities. We will argue that

¹. For important contributions, see Coase (1937), Williamson (1985), and Cheung (1983).

² For key contributions, see Simon (1957), Nelson and Winter (1982), Rosenberg and Birdzell (1986) and, again, Williamson (1985). For applications of a learning perspective to development economics, see Bruton (1985) ; also Amsden (1988).

³ See for example Pack and Westphal (1986); also -- in the context of debates over industrial policy in developed countries, Krugman (1987). Externalities were, of course, central to the earlier analyses of Hirschman (1958) and Scitovsky (1954).

interventionist industrial strategies can set in motion and accelerate the achievement of dynamically efficient industrialization, but that no single strategy is appropriate for all less developed nations at all times. Countries differ in the economic conditions that prevail at the outset of industrialization. And governments differ in their commitments to socially beneficial economies and in their capacities to sustain and administer such policies over the long haul. What is key for success is the goodness of fit between, on the one hand, the chosen strategy of industrialization and, on the other, a nation's economic and political environment.

The paper is divided into two sections. The first focuses on industrial strategy in 'hard' states, those with governments capable of devising, implementing and sustaining socially beneficial industrial policies; the examples of Korea and Taiwan delineate the ways in which interventionist industrial strategies can accelerate the requisite transitions in 'hard' states, and delineate also some relations between initial conditions, the character of the interventions, and the nature of the subsequent transitions. The second section explores what might be the consequences of adopting industrial strategies suited for 'hard' states in 'soft' states, those more vulnerable to socially costly rent-seeking behavior on the part of powerful private interests or government officials, and lays out some alternative policies that might be better suited for these 'soft' states.

INDUSTRIAL POLICIES IN 'HARD' STATES

A Typology of Industrial Strategies

As a prelude to delineating the industrial strategies of Korea and Taiwan, it is helpful heuristically to distinguish among some analytically divergent

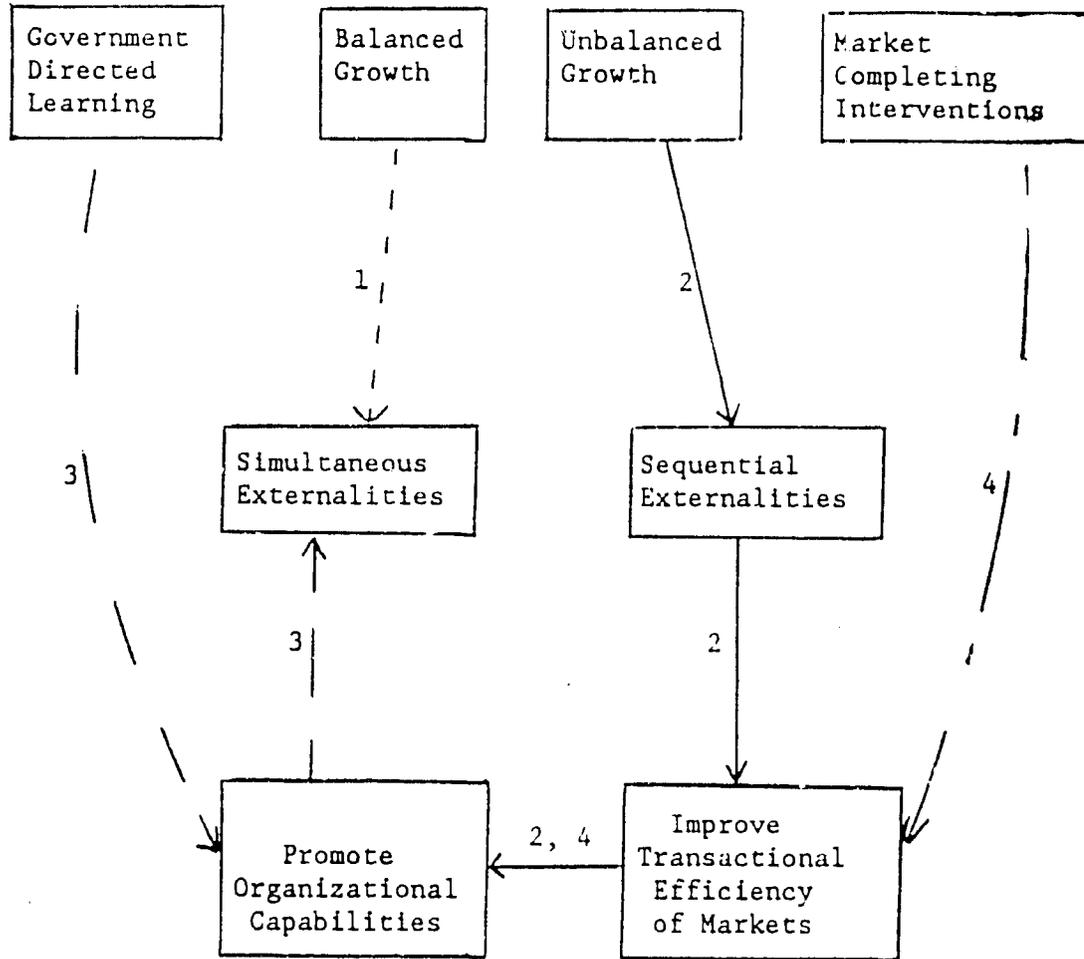
classes of industrial strategy. Our conception of industrialization focuses attention on the ways in which industrial strategies help promote the performance of the institutions responsible for production and allocation. Given this institutional orientation, the fundamental distinction is between market-oriented and hierarchy-oriented strategies. We discuss the class of strategies that works to promote the capabilities of hierarchical organizations under the rubric of government-directed learning, and the class of strategies that work to improve the transactional efficiency of markets under the rubrics of strategies of unbalanced growth and of market-completing interventions. A fourth class -- strategies of balanced growth -- cuts across our market-hierarchy distinction; it is considered briefly for reasons of completeness.

Figure 1 summarizes the channels through which each strategy is hypothesized to promote industrialization. The first strategy (championed in the 1950s by advocates of 'balanced growth') gives central importance to simultaneous, reciprocal externalities. Pack and Westphal (1986), following Scitovsky (1954), analyze two industries that create positive pecuniary externalities for one another "...neither [of which] would be established in the other's absence.... [They] conclude that both industries should be established together. [They] also conclude that neither would be established without some form of explicit co-ordination between investment decisions."⁴ The task of government is thus to select and co-ordinate simultaneous investments in industries that create positive externalities for one another. As Figure 1 implies, the strategy has at best limited impact on organizational capabilities or market efficiency. For one thing, there is no reason why the initial capture of simultaneous externalities should generate any subsequent dynamic consequences. More

⁴ Pack and Westphal (1986) pp. 112-114.

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Figure 1: A Typology of Development Strategies



fundamentally, as Hirschman (1958) noted in his trenchant criticism, a balanced growth strategy presupposes precisely what is most likely to be lacking in societies at the outset of industrialization: the organizational capability on the part of both governments and private firms to undertake simultaneously and efficiently a series of interrelated investments. Notwithstanding Pack and Westphal's suggestion that investment co-ordination to capture simultaneous externalities was an important feature of government intervention in Korea, in our judgement (and that of Amsden (1983) co-ordination per se was not central to the successful pursuit of industrial strategy in Korea (or Taiwan).

As with strategies of balanced growth, positive externalities are taken to be central to industrialization in the second strategy (championed in the 1950s by Albert Hirschman and other advocates of 'unbalanced growth'); but now the externalities are sequential, rather than simultaneous, and the strategy is self-sustaining rather than dependent on continuing government co-ordination. New firms enter to take advantage of externalities created by earlier entrants; by the act of entry they, in turn, create externalities that induce yet more firms to enter. Industrialization via this strategy thus involves an ongoing proliferation of small and medium enterprises.⁵ As Figure 1 summarizes, the sequential externalities set in motion via this strategy induce ongoing entry, expanded competition and transactional efficiency in markets and, as a result of the press of competition, progressive gains in organizational capabilities.

Hirschman summarizes succinctly the role of government in an unbalanced growth strategy:

⁵ See Levy (1988a) for a formal model of interactions among traders and small manufacturers that highlights how an initial endogenous stimulus can set in motion dynamic expansion driven by ongoing gains in the efficiency of market transactions.

...the two principal roles of government economic policies in the course of the development process are... to initiate growth through forward thrusts that are meant to create incentives and pressures for further action; and then to stand ready to react to, and to alleviate, these pressures in a variety of areas.⁶

In short, Hirschman proposes an inducing and an induced role for government. Government's inducing role revolves around strategic interventions to promote a continuing outcropping of profitable opportunities. The task of government, in Hirschman's words, is to set in motion a "compulsive sequence" sustained by sequential externalities and associated with ongoing entry of firms. Such a role requires a certain amount of active leadership in industrialization. An associated inducing role for government results in active involvement in promoting what Hirschman calls "purely permissive sequences." The task here is to lay down the "prerequisites" for further growth and development by such things as construction of physical infrastructure and maintenance of law and order. As prerequisites, "they permit and invite, rather than compel, other activities to follow suit."⁷ We would add to Hirschman's list the development of institutional infrastructure (our market-completing interventions) in the areas of marketing, finance, technical information, subcontracting, and quality control.⁸ The magnitude of the endogenous response to any exogenous government intervention (or policy reform) will vary depending on such infrastructure.

Government's induced role, according to Hirschman, emanates from the

6. Albert O. Hirschman (1958) The Strategy of Economic Development, Yale University Press, p. 202.

7. Ibid., A.O. Hirschman, p. 203.

8. For a discussion of the importance of institutional infrastructure in conditioning the response to policy reform, see H. Myint "Comparative Analysis of Taiwan's Economic Development with Other Countries" in K.T. Li and T.S. Yu Experiences and Lessons of Economic Development in Taiwan, Taipei, 1982.

endogenous growth process touched off by government's exogenous strategic interventions to get things going. As the endogenous expansion makes rapid strides through market forces, shortages and bottlenecks will be revealed in education, health, public utilities and pollution. Government's function is to remedy these revealed deficiencies.

As will be evident below, endogenous expansion sustained by sequential externalities and associated ongoing entry of small and medium enterprises subsequent to initial, externality-creating investments promoted (and sometimes undertaken directly) by government appears to have been unusually important in Taiwan's successful industrialization.

The third strategy involves an effort, not to capture externalities, but to improve the capabilities of individual firms. Firms, following the logic of this strategy, enjoy dynamic internal economies; they learn-by-doing, moving down their learning curves, increasing productivity and reducing unit costs with cumulative increases in production.⁹ Governments have two central tasks in industrial strategies of 'government-directed learning'. The first task is to 'pick winners', to select individual firms and industries where the potential magnitude of dynamic internal economies is substantial. The second task is to refine instruments of 'partial mutuality',¹⁰ instruments that simultaneously induce firms to enter and oblige them continually to expand and secure improvements in productivity. As Figure 1 summarizes, a strategy of government-directed learning, where successful, enables individual firms progressively to

⁹ Corden (1974) pp. 250-255 highlights dynamic economies as a plausible rationale for infant industry protection. Learning by doing has been analyzed by Arrow (1962), and Nelson and Winter (1982). For applications to Korea and Taiwan, see Westphal (1982), Kim (1980) and Amsden (1988).

¹⁰ The phrase is from Jones and Sakong (1980).

expand and enhance productivity and technical proficiency. Moreover, insofar as a learning strategy tends to promote an industrial structure characterized by a small number of giant enterprises, it promotes the capture of simultaneous externalities, in part by enabling large individual enterprises by virtue of their size and associated diversification to internalize externalities, in part by facilitating co-ordination among a small number of large enterprises, co-ordination that would be exceedingly difficult to achieve in a more diffuse industrial structure.¹¹ But, insofar as the strategic focus is on enhancing administrative co-ordination and enterprise capability, a learning strategy may do little, even in the long-run, to promote the transactional efficiency of markets. As will be evident below, 'government-directed learning' promoted by the vigorous use of instruments of partial mutuality appears to have been unusually important in Korea.

The final strategy, the one that conforms most closely to laissez faire prescriptions, amounts to a set of programs — interventions in financial markets, in product markets, and in input markets — to improve transactional efficiency. Programmatic 'market-completing' strategies are ubiquitous; however, our field research suggests that they played at best a marginal role in securing dynamically efficient industrialization in either Korea or Taiwan (or in any other country of which we are aware). The virtue of this fourth strategy is that it points to tasks for government that are at one and the same time activist and unlikely to be seriously distortionary, even if poorly implemented. We shall have more to say on the potential role of this strategy in our discussion of industrial policies that might be suitable in soft states.

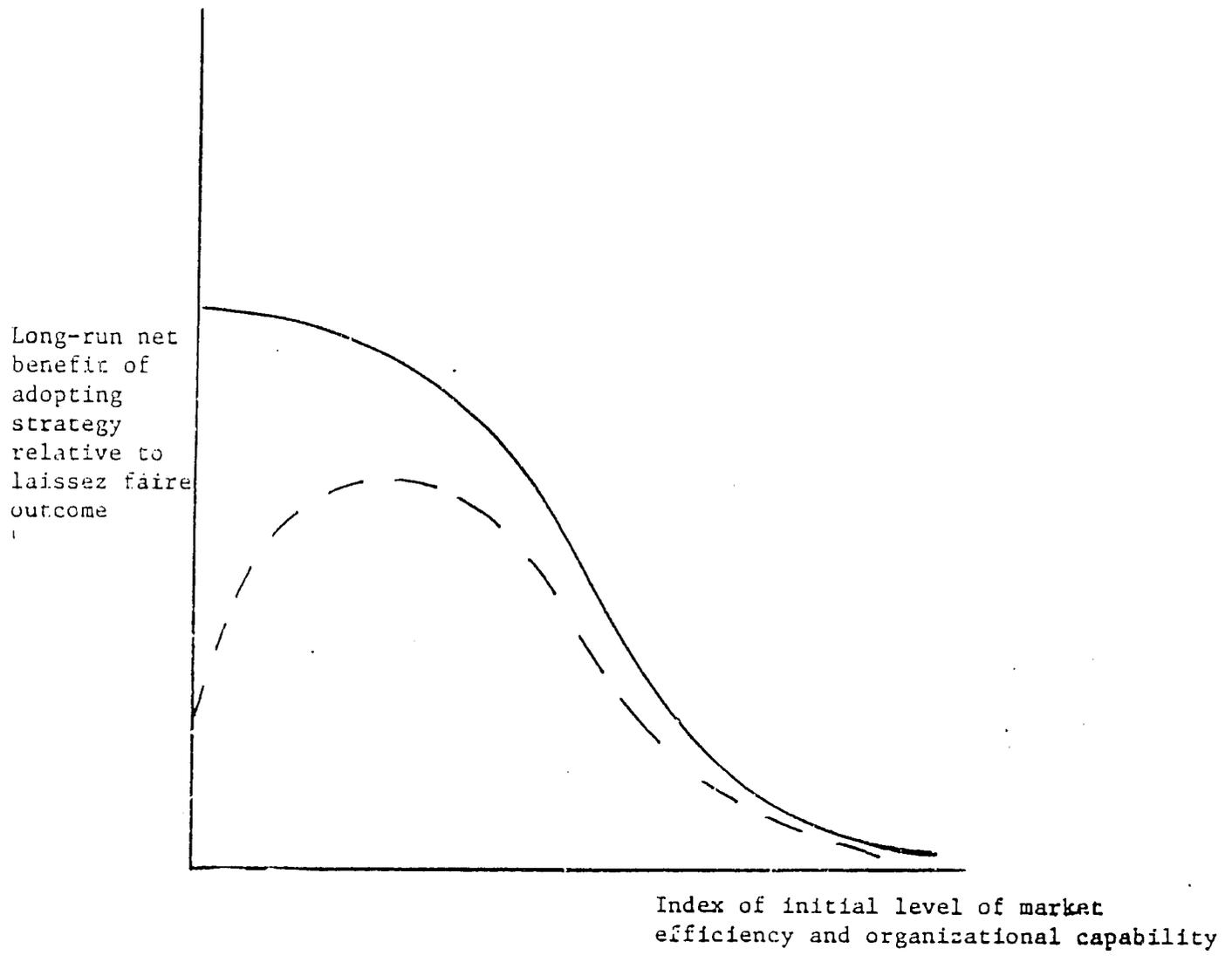
¹¹ See Olson (1982) for an analysis of the relationship between numbers of participants and the prospects for collective action.

Figure 2 summarizes some hypotheses as to how, in the context of a hard state, the incremental benefits relative to laissez faire of adopting either a government-directed learning or an unbalanced growth strategy (the two strategies that we will argue below were important in the industrial successes of Korea and Taiwan respectively) might vary with the level of a nation's organizational capability or market efficiency. At very low levels, a strategy of unbalanced growth is hypothesized to have little impact insofar as markets will be too incomplete to signal new opportunities, and agents will be too lacking in skill and experience to interpret and respond to any signals of opportunity they indeed receive. By contrast, insofar as a strategy of government-directed learning bypasses markets and takes as its starting point pre-existing limitations in organizational capability, it is hypothesized to be capable of yielding substantial cumulative gains, even in the face of severe initial institutional shortfalls. As the initial level of capabilities rises, the unbalanced growth strategy becomes better able to generate sustained positive dynamic externalities and thereby to promote cumulative advances in market efficiency, organizational capability and the capture of sequential externalities. At the same time, however, as Figure 2 illustrates, the higher is the level of initial capabilities the smaller are the nett gains over laissez faire from either strategy. At high enough levels of market efficiency and organizational capability, explicit industrial strategy is hypothesized to add little to a nation's ability to pursue dynamically efficient industrialization.¹²

¹² But, as Krugman (1984), Brander and Spencer (1985) and Yamamura (1986) illustrate, even industrialized nations can reap benefits from strategic trade policies where world markets are oligopolistic, and high-profit firms from different countries engage in complex games of strategy with one another.

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Figure 2 : The Benefits of Industrial Strategy in a 'hard' State



————— Government-directed learning

- - - - - Unbalanced growth

Industrial Strategies in Korea and Taiwan

Industrial policy in any given country is shaped at least in part by incremental, ad hoc responses to specific, complex circumstances, not simply by a consistent application of some coherent strategic view. Even so, as we shall attempt to demonstrate in this section, the heuristic strategies of government-directed learning and unbalanced growth highlight some important differences between Korea and Taiwan in their paths of industrial expansion. In turn, the disparate experiences of the two nations highlight the relations between industry strategy and industry structure: the ways in which initial conditions shape the choice of industrial strategy, and the ways in which the choice of strategy shapes, in turn, the subsequent evolution of industry structure.

Since the early 1960s both Korea and Taiwan have enjoyed unusually rapid, and unusually equitable, economic growth.¹³ Between 1965 and 1983 GNP per capita grew at an average annual rate of 6.5 percent in Taiwan, and 6.7 percent in Korea, as compared with an average rate of 3.8 percent for a larger sample of upper-middle income less developed nations. Gini coefficients for after-tax household income amounted to .285 (in 1978) and .389 (in 1980) for Korea and Taiwan respectively, placing both nations in the low-inequality group of countries. Interestingly (and consistent with our analysis of differences between the two countries), between the late 1960s and late 1970s inequality widened in Korea but narrowed in Taiwan.

For all that our primary interest is in differences, we note briefly some important similarities in historical legacies, political conditions and subsequent economic policies lie behind these economic successes. To begin with

¹³ The summary data presented here are from Kuznets (1988) pp. S14-17.

similarities in historical legacy and political conditions,¹⁴ a first similarity is the common experience of colonization by the Japanese in the first half of the twentieth century.¹⁵ A second similarity is the absence at the outset of the period of rapid industrial expansion of politically influential rural elites: in both nations, rural elites were first weakened by the Japanese, and then destroyed by land reform subsequent to decolonization. A third similarity is the absence of competitive politics at the height of industrial expansion in the 1960s and 1970s: authoritarian rule was imposed on Taiwan by the Kuomintang after their withdrawal from Mainland China in 1949, and was imposed on Korea by the military in the early 1960s, after a decade of political turmoil. A fourth similarity was in the common suppression by governments in the two countries of activist labor movements, and associated commitments to competitive labor markets and market-determined wages.¹⁶

As for economic policies, governments in both countries took on the productive economic tasks assigned to the public domain by conventional economic analysis: both countries invested heavily in infrastructure and education; and both countries pursued coherent macroeconomic policies that avoided imbalances of a kind which could choke off economic expansion, although Korea's policies were rather more inflationary than those of Taiwan.¹⁷

¹⁴ For further analysis of the points raised in the text, and more broadly of the political roots of industrial policy in Korea and Taiwan, see Cheng (1987).

¹⁵ See the articles in Myers and Peattie eds. (1984) for analysis of Japanese colonial rule in Korea and Taiwan.

¹⁶ For further discussion of the implications of these labor market policies, see Kuznets (1988) pp. S27-29.

¹⁷ For overviews of macroeconomic policies see Kim and Roemer (1979), and Galenson (1979).

Additionally, after a decade or so of import-substituting industrialization both countries shifted in the early 1960s to outward-oriented policies that, at the very least, did not on average discriminate against exports in favor of production for their domestic markets.¹⁸

Given these similarities as background, we turn now to analysis of the distinctive features of industrial expansion in each of the two countries.

The Korean pattern. What distinctive policies account for Korea's extraordinarily rapid expansion of manufactures exports and national income since the mid 1960s? While the standard neoclassical explanation highlights the shift from socially inefficient incentives for private firms associated with import substitution to socially efficient incentives associated with the subsequent shift to outward-oriented policies,¹⁹ following Amsden (1988) we emphasize here the role of government-directed learning.²⁰

Consistent with the emphasis of the neoclassicals, evidence suggests that the move from multiple to a uniform exchange rate, and the associated cessation of zero-sum opportunities for rent-seeking by importing at an overvalued exchange rate was important in sustaining the initial burst of export activity.²¹ Moreover, again consistent with the neoclassical explanation, since the mid 1960s Korea has offered a wide range of nondiscretionary incentives for

¹⁸ See Balassa and Associates (1982) for analyses of the trade policies followed by the two countries.

¹⁹ For important examples of the neoclassical explanation, see Frank, Kim and Westphal (1975), Kim and Roemer (1979), and Balassa and Associates (1982).

²⁰ Pack and Westphal (1986), Jones and Sakong (1980) and Westphal and Kim (1982) develop related explanations of Korea's industrial successes that endeavor to go beyond an exclusive focus on efficient pricing.

²¹ But note that the earlier multiple exchange rates included incentives for exporters; so, as Jones and Sakong (1980) pp. 86-97 demonstrate, the policy reforms did not increase the absolute returns to exports.

exports. As of 1968, gross export incentives amounted to 29.8 percent of the value of total merchandise exports; over 80 percent of this total was provided automatically to all firms that met the relevant performance criteria²² But along with nondiscretionary export incentives, the Korean policy arsenal included a series of instruments that, from a neoclassical perspective, have a more dubious impact.

First, long-term credit was 100 percent government-controlled and provided selectively to individual firms at interest rates well below market equilibrium, often according to criteria so general that they left virtually complete discretion as to who would benefit in the hands of the relevant government officials.²³ Second, direct tax breaks also were proffered on a discretionary basis. Some tax incentives were linked explicitly to exports in ways that limited the scope for discretion, but others involved such vague criteria that firms had little basis for predicting whether they might qualify in advance of negotiations with the bureaucracy.²⁴ Additionally, in the absence of pre-specified criteria, firms were continually vulnerable to tax audits at

²² As Westphal and Kim (1982) p. 217 note, these incentives included both compensation for domestic price distortions, and net incentives on top of returns in a free trade regime. The nondiscretionary incentives included rebates of indirect sales taxes and of import duties on inputs for items produced for export (both compensating rather than net incentives, together these accounted for 72 percent of the total value of the incentive package), subsidized short-term credit to cover shipment costs, carrying costs, and raw material procurement costs of exports, and wastage allowances that enabled exporters to resell some fraction of their inputs ostensibly procured for export production on the protected domestic market at inflated prices.

²³ For detailed analyses of the operation of controlled credit markets, see Cole and Park (1983) and Jones and Sakong (1980) pp. 101-110.

²⁴ For details of the various direct tax incentives on offer, see Hong (1979) pp. 79-95.

the more-or-less arbitrary discretion of government bureaucrats.²⁵ Third, dating back to 1962, the Korean Ministry of Commerce and Industry set and monitored export targets for individual firms, sometimes in collaboration with the firms, sometimes not.²⁶ Fourth, even after the shift to export-oriented policies the Korean government continued to use extensively tariffs and quantitative restrictions to limit imports. Viewed from the perspective of their impact on efficient allocation, discretionary tax and credit subsidies and import protection appear thoroughly undesirable, and export targets an unimportant curiosity. But viewed from the perspective of an industrial strategy of government-directed learning, export targets, import protection, and discretionary tax and credit subsidies emerge as a coherent package of non-neoclassical policy instruments to force the pace of organizational learning.

Table 1 reveals that, although barriers to import into Korea were low on average in 1968,²⁷ their magnitudes varied substantially across sectors. On average the magnitudes of protection and subsidy were low for export sectors (for sales to both domestic and export markets), but high for export-and-import-competing and import-competing sectors; most of the subsidy for the latter groups of sectors took the form of protection for domestic sales. The data imply that the Korean government did not use subsidies in the latter

²⁵ Jones and Sakong (1980) pp. 114-115 illustrate how government officials used the threat of audit as a way of securing compliance from firms.

²⁶ Thus Rhee et. al. (1984) p. 89 report that 50 of 97 firms that responded to a 1976 survey claimed to have a say in setting their export targets, with the remainder claiming to have no say.

²⁷ 1968 represents the most recent year for which disaggregated, analytically useful estimates of effective protection based on price comparison data are available. Data summarized in World Bank (1987) pp. 57-60 reveal that effective protection rose subsequent to 1968, and the nature of the protected sectors shifted as Korea embarked on its push (curtailed after 1979) to develop heavy and chemical industries.

Table 1: Effective Protection and Effective Subsidies in Korean Manufacturing (1968) by Trade-orientation of Products (percentage)

	<u>Effective Protection¹</u>			<u>Effective Subsidies</u>		
	<u>Export Sales</u>	<u>Domestic Sales</u>	<u>Average</u>	<u>Export Sales</u>	<u>Domestic Sales</u>	<u>Average</u>
Export ²	5	-18	-11	13	-26	-13
Export-and-Import-Competing ³	-2	73	45	9	55	38
Import-Competing ⁴	-9	93	92	35	91	91
Non-Import Competing ⁵	-1	-16	-16	6	-24	-24
All Manufacturing	3	- 1	- 1	12	- 9	- 7

Source: Westphal and Kim (1982) p. 231

- Notes :
1. Effective protection is measured using the Balassa method
 2. Export sectors are defined to be those sectors where exports exceed 10% of production and imports amount to under 10% of consumption
 3. Export-and-import-competing sectors are defined to be those sectors where exports exceed 10% of production, and imports exceed 10% of consumption
 4. Import-competing sectors are defined to be those sectors where exports amount to under 10 percent of production, and imports exceed 10% of consumption
 5. Non-import-competing sectors are defined to be those sectors where exports amount to under 10% of production, and imports amount to under 10% of consumption

sectors simply to enable manufacturers to earn rents from domestic sales: the substantial difference between levels of effective protection and effective subsidy for export sales points to very high tax and credit subsidies for exports by firms in import-competing-sectors in particular. Indeed, almost 40 percent of Korea's major export sectors enjoyed above average levels of subsidy for domestic sales, largely in the form of protection.²⁸ Thus Kim and Westphal (1982) conclude that "the government has subsidized exports that were inefficiently produced.... through high nominal protection on the domestic market".²⁹ Pack and Westphal (1986) go further, suggesting that 'inefficiently produced' exports often were exports from infant industries. As they put it, "...the Korean government discriminated in its treatment between established, internationally competitive industries and new, infant industries that were deemed worthy of promotion.... Something closely approximating neutrality has characterized the government's policies affecting the established industries..... but there has been substantial bias in favor of the promoted infant industries".³⁰

A strategy of government directed learning involves more than protection for infant industries. The goal of the strategy is to promote dynamic internal economies within individual firms by inducing them to enter and obliging them continually to expand and secure improvements in productivity via ongoing

²⁸ Sectors whose exports accounted for more than one percent of total merchandise exports; Kim and Westphal (1982) p. 242-3.

²⁹ Westphal and Kim (1982) p. 243.

³⁰ Pack and Westphal (1986) p. 94.

increases in export volumes.³¹ Thus, along with import protection the government needs in addition instruments of partial mutuality, mechanisms to target individual firms and oblige them to progressively expand their export volumes rather than settle for the quiet life of inefficient, yet profitable production for the protected domestic markets. Export targets and selective credit and tax instruments can in principle provide the requisite tools. Targets can be used to challenge individual firms, and to evaluate the extent to which they meet these challenges. And credit and tax instruments can be used to reward success and punish failure, showering successful firms with selective subsidies and tax breaks, and threatening unsuccessful firms with tax audits, the loss of subsidies, and even the calling-in of outstanding loans; in the context of their high levels of indebtedness,³² the last would be tantamount to a threat to shut down unresponsive firms.

Survey results reported by Phee et. al. (1984) provide some evidence that the Korean government indeed employed its export targets and controls over taxation and credit as instruments of partial mutuality. 62 percent of 106 firms surveyed in 1976 felt that their export targets had led to increases in

³¹ The standard neoclassical objection to infant industry intervention to promote dynamic economies internal is that firms have private incentives to invest to capture internal economies, and that if capital market imperfections limit the opportunities to make the relevant investments then the appropriate policy response is to intervene to improve the efficiency of capital markets. But Corden (1974) p. 255, notwithstanding his impeccable neoclassical credentials, concludes that "one has to face the fact that capital markets are imperfect, especially in less-developed countries, and it is often easier or cheaper to impose tariffs than to create an effective capital market. There seems little doubt that, in spite of many qualifications, a valid, practically relevant infant argument for subsidization of new manufacturing industries resting on capital market imperfections can be made for many less-developed countries".

³² The average debt/equity ratio peaked at 390 percent in 1971, and remained in the 3-400 percent range throughout the 1970s; Jones (1980) pp. 105-112; also Jones and Sakong (1980) pp. 101-102.

exports, while only 14 percent claimed the targets had made no difference in the growth of production;³³ additionally, over 60 percent of the firms agreed that monthly export promotion meetings attended by both businessmen and government officials, and often chaired by the nation's president, significantly affected their export performance. Underlying these positive responses appears to be the implicit threat of government sanction. Almost three-fourths of the respondents viewed the most important advantage of good export performance to be its implied assurance of continued government support for the firm's efforts. 55 percent of firms felt that the rigor of tax collection depended on their export performance. And 36 percent felt that export performance influenced the facility and speed of their dealings with government.³⁴ Hong (1979) provides a particularly evocative depiction of the centrality of partial mutuality in Korean business-government relations. "After the sixties" he suggests, "Korean entrepreneurs soon learned that generous subsidies and other promotional schemes would be provided for production activities that the government wished to support, while various disincentives would be applied to non-favored activities..... As the emphasis of the government shifts.... the successful entrepreneur begins to adapt to this shift.... if this does not happen, the chances are good that he will soon no longer be a successful entrepreneur in the Korean economy".³⁵

Pursuit of a strategy of government-directed learning appears to have influenced both the rate and direction of Korea's industrial expansion, and the pattern of industrial organization within Korean manufacturing. The relation

³³ Rhee et. al. p. 91.

³⁴ Rhee et. al. p. 92.

³⁵ Hong (1979) p. 71.

between industry strategy and industry structure is explored later for both Korea and Taiwan. An aggregate empirical analysis of the relation between government-directed learning, industrial growth and economic welfare is beyond the scope of the present paper. What must suffice here are four illustrative, industry and firm-specific summary examples of Korean successes that highlight policy interventions of the sort associated with the strategy of government-directed learning.

* Shipbuilding.³⁶ Hyundai Shipbuilding and Heavy Industries was established in 1973. The project almost was abandoned in 1972 after Hyundai's chairman had come up empty-handed in efforts to raise international finance; Hyundai persevered only after a "thinly veiled threat" from the Korean president that " 'if you only want to do what's easy, you'll get no more help from us' ". In April 1972, Hyundai won orders to supply two 250,000 ton vessels (this from a country that had never produced a vessel larger than 10,000 tons). The dry-dock was built, workers trained, supplementary facilities completed, and the ships completed for delivery by November 1974. By 1976, almost 30,000 people were employed in the construction of steel cargo ships; a decade later annual production capacity had trebled.³⁷ But the industry remained dependent on government largesse. Thus, when a 1975 world shipbuilding slump led to the cancellation of orders for three virtually completed tankers, the Korean government arranged for Korean oil refineries to lease the vessels to transport crude from the Middle East to Korea. And both the 1976 Planned Shipbuilding

³⁶ This example is adapted slightly from Jones and Sakong (1980) pp. 119, 357-8.

³⁷ Data are from Economic Planning Board, Report on Mining and Manufacturing Survey, 1976, and Economic Planning Board, Major Statistics of Korean Economy, 1986 p. 110.

Program and the 1981 Shipping Promotion Fund subsidized the purchase of domestically built ships by Korean shipping companies.³⁸

* Automobiles.³⁹ Domestic assembly of automobiles got underway in 1962 when the Korean government enacted a ban on the imports of fully-assembled cars into Korea (the ban continued into the 1980s). Between 1962 and 1974 the Korean government made no effort to use the protected local market as a springboard for high volume exports; rather, the focus was on increasing domestic content which rose from 21 percent in 1966, to over 60 percent in 1972.

Government policy shifted in 1974 with the promotion of Korean designed and engineered vehicles with 100 percent domestic content. Then in 1979, after sharp declines in demand, the government intervened to restructure the industry, arranging the closure of two of Korea's four producers of passenger cars. That same year "exports came on the agenda (of Hyundai Motor Company, which since 1976 had produced more than half of Korea's passenger cars) partly in response to the government's machinery export promotion policy". By 1982, the share of exports in total automobile output had reached 15 percent, with Hyundai accounting for 99.9 percent of the export total.

* Diesel engines.⁴⁰ The foundations for diesel engine production in Korea were laid with the establishment in 1963 of the autonomous public enterprise Han'gi. Subsequent to operating difficulties, Han'gi was sold in 1968 to the private auto company, Shinjin. In 1972, after continuing difficulties, Shinjin was provided with extensive long-term credit subsidies, conditional upon its

³⁸ World Bank (1987) Volume II, pp. 138-9.

³⁹ This example is adapted slightly from Amsden and Kim (1985).

⁴⁰ This example summarizes material from Jones and Sakong (1980) pp. 128-131, and Amsden (1985) pp 11-12.

providing equity finance for a planned Han'gi plant to manufacture diesel engines under license from a German firm. Financial difficulties continued, and in 1975 the government consummated a deal in which Han'gi was sold off to the Daewoo group. Daewoo immediately requested a ban on the importation of diesel engines from foreign countries; the ban was granted, on the condition that the price of diesel engines would fall. With the subsequent expansion of automobile production in Korea (and after overcoming technical problems of design compatibility between the engines and Korean cars), Daewoo was able to realize economies of scale and transform diesel engine manufacture into a profitable operation.

* Television.⁴¹ In 1966 Goldstar began to assemble black and white TVs for sale in a domestic market from which imports were entirely barred (the ban on TV imports continued into the 1980s). Three years later the government began its effort to promote television exports, with the promulgation of the Electronics Industry Promotion Law of 1969; the law provided for a series of tax concessions and credit subsidies for TV exporters (as well as for exporters of other electronics products). By 1975, production of black and white TV (now by Samsung as well as Goldstar) exceeded 1 million sets; exports accounted for over 50 percent of shipments. By the late 1970s production capacity exceeded 5 million sets; Korea had become the largest monochrome television supplier in the world.⁴²

Initially the production of color television (underway since the mid 1970s)

⁴¹ This example summarizes material compiled from Kim (1980), World Bank (1987), Volume II, Chapter 8, Gold Star Co. Ltd (1985), and business periodicals cited below.

⁴² "Consumer electronics: seeking the right switch", Business Korea, October 1983, pp. 14-20.

was entirely for export. But in 1980 the government reversed its longstanding ban on color TV broadcasts. Color TV manufacture took off, spurred by high prices on the protected domestic market. Local sales went from zero in 1979 to over \$399 million in 1982 and \$465 million in 1983. Export sales rose almost as rapidly -- from about \$50 million in 1979, to \$185 million in 1982, and \$353 million in 1983. Cost and pricing data for color TVs that emerged in the course of a US anti-dumping suit provide indirect evidence of cross-subsidization of export sales with domestic rents. According to one calculation, in 1983 the average cost of production of a color TV was \$222, average fob export price was \$159, and average sales price on the Korean market \$307; some fraction of the gap between production cost and retail sales price was, however, captured by the Korean government in the form of indirect taxes.⁴³ Along with protecting the domestic market from import competition, the Korean government also sought to limit competition (and associated declines in rents earned domestically) among local manufacturers. Thus, Hyundai appears to have been dissuaded in 1983 from including manufacture of color TV in its new venture into the electronics industry;⁴⁴ and in 1984 the threat of administrative litigation for 'disturbing orderly marketing' restrained domestic price cutting by one of Korea's three color TV makers.⁴⁵

⁴³ Data in the text are from "High domestic TV prices buoying export effort", Business Korea, September 1984, pp. 80-82. According to data provided by an anonymous spokesman of one of Korea's TV manufacturers, as of early 1984 indirect taxes accounted for two-thirds of the gap between factory gate price and domestic retail sales price. see "Korea considers dumping charge dubious", Business Korea, April 1984, p. 63.

⁴⁴ See "An electronics war? Hyundai plans to storm the market", Business Korea, September 1983, pp. 16-20.

⁴⁵ "Samsung-Goldstar rivalry: the two companies that put Korean electronics on the map", Business Korea, September 1984, pp. 85-86; also "High domestic TV prices buoying export effort" p. 81.

The Taiwanese Pattern. Pricing policies in Taiwan have largely been similar to those of Korea; however, the non-price mechanisms of governmental intervention — and the associated mechanism of industrial expansion — were quite different.

To begin with the pricing regime, barriers to import into Taiwan were low on average, but their magnitudes varied substantially across sectors. The low average manufacturing effective rate of protection in Taiwan at the end of the 1960s has generally been interpreted as low government intervention in trade. Similarly, the relatively low manufacturing difference in effective subsidy for export sale versus domestic sale is interpreted as a low "trade bias". but if one looks at the disaggregated data the picture changes somewhat. Taiwan has an inter-sectoral dispersion of effective subsidy rates to seven manufacturing sectors around the manufacturing average of 23 (Table 2). This is lower than the other countries shown but not far from Argentina and Israel. A standard deviation of 23 percent still leaves plenty of room for big inter-sectoral differences in effective subsidy rates. Indeed, in two important sectors—consumer durables and intermediates products II (higher levels of fabrication) Taiwan had the second highest subsidy levels in the six country study after Argentina.

Two effects of the dispersion of rates are important. First, the resource pull effect (or industry bias) of a given standard deviation will probably be greater the lower the average. Second, when dispersion is around a low average, it is more likely to result from intended differences between sectors, whereas when it is round a high average, it is more likely to result from unintended, even quite accidental, causes, because all numbers are large and

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Table 2 Incentives in Taiwan's Trade Regime,
Compared to Five Other Countries
(about 1969, in percent)

	<u>Taiwan</u>	<u>Korea</u>	<u>Singapore</u>	<u>Israel</u>	<u>Colombia</u>	<u>Argentina</u>
(1) Manufacturing	14	13	4	76	35	112
(2) Agriculture	-4	18	--	48	-14	-13
(3) Effective Subsidy to Manufactured Exports	9	-14	-7	-17	7	-46
(4) Inter-sectoral Dispersion	8	36	2	25	71	38
(5) Effective Subsidy to Manufactures for Domestic Market Sale	10	14	1	16	28	45
(6) Inter-sectoral Dispersion	23	47	7	32	56	35

Source: Balassa 1982_: rows 1 & 2, Table 2.3; rest derived from Table 2.6.

Notes:

1. The data are for 1969 except for Korea (1968), Singapore (1967), and Israel (1968).
2. Effective protection measures the extent to which tariffs and quantitative trade restrictions increase the domestic value-added price over the world market value-added price. The figure of 14 percent for Taiwan manufacturing means that the combined effect of Taiwan's tariffs and quantitative restrictions in 1969 was to increase the domestic value-added price of manufactures by 14 percent, on average, above the world market value-added prices of the same items.
3. Effective subsidy is a more comprehensive measure than effective protection. It attempts to factor into the calculation of the domestic value-added price not only the effects of tariffs and quantitative restrictions but also the effects of as many tax and subsidy schemes as can be measured, such as export credit.
4. The dispersion index refers to the standard deviation from the unweighted manufacturing mean of the seven manufacturing sectors (construction materials, intermediate products I (lower levels of fabrication), intermediates II (higher levels of fabrication), consumer nondurables, consumer durables, machinery, and transport equipment. The averages given in rows 1 and 2 are weighted, and come straight from the source; those in rows 3 and 5 are unweighted and differ from those in the source. The problem of bias resulting from high effective subsidy rates for quantitatively insignificant sectors is reduced by the relatively large size of each sub-sector. I thank Alan Gelb for making the dispersion calculations and for discussion of the results.

the dispersion is calculated as the difference between large numbers.⁴⁶ If these effects are true, then Taiwan's standard deviation may have as much or more resource pulling effects as that of Israel or Argentina, and these effects are more likely to be the intended result of industrial policies.

Table 3 shows the relative strength of resource pulls towards export versus domestic sale for each subsector. The figures indicate that, for Taiwan, resource pulls created by government policies have the net effect of favoring export sale in the so called "export industries", while they have the net effect of favoring domestic market sale in the import-competing industries. In other words, as in Korea the trade regime has been dualistic. Government policies created different incentives for different industries.

For all the similarities in trade regime, there are striking differences between Korea and Taiwan in their industrial structures. Taiwanese firms tend to be smaller than their Korean counterparts, and to depend more heavily on market transactions. Manufacturing establishments tend to be larger, individual product markets more highly concentrated, and the extent of conglomerate control greater in Korea than in Taiwan. The five largest Korean conglomerates accounted in 1982 for 22.6 percent of that nation's manufactures shipments; the corresponding figure for Taiwan was only 4.7 percent.⁴⁷ As Table 4 reveals, the fifty largest firms (not conglomerates) accounted in the most recent estimate for 37.5 percent of Korean, but only 16.4 percent of Taiwanese manufacturing sales. Table 5 shows that establishments with 500 or more workers accounted in

⁴⁶. R. Wade, Ibid. (1988b) p. 41.

⁴⁷ Lee (1986) p. 239; the Taiwanese estimate is calculated from China Credit Information Service, Top 500, and Republic of China, Ministry of Economic Affairs, Department of Statistics, Report on Industrial and Commercial Survey, 1986.

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Table 3 Difference Between Effective Subsidy for Export Sale
and that for Domestic Market Sale (E - D)
Taiwan Compared to Five Other Countries
(about 1969, in percent)

	<u>Taiwan</u>	<u>Korea</u>	<u>Singapore</u>	<u>Israel</u>	<u>Colombia</u>	<u>Argentina</u>
(1) All Manufacturing	4	7	-5	-44	-22	-145
Industries by Trade Orientation:						
(2) Export	12	31	0	-130	10	-91
(3) Import-competing	-46	-61	-3	-88	-76	-190
(4) Export-and-import- competing	-4	-46	-7	-65	-15	-164
(5) Non-import-competing	21	16	3	-5	-4	-153

Source: Balassa et al., Table 2.5, pp. 34-35.

Note: Export industries are those where more than 10 percent of domestic production is exported and less than 10 percent of total consumption is imported. Import-competing industries are those where less than 10 percent of domestic production is exported and more than 10 percent of domestic consumption is imported. Export-and-import competing industries are those where more than 10 percent of domestic production is exported and more than 10 percent of domestic consumption is imported. Non-import-competing industries are those where less than 10 percent of domestic production is exported and less than 10 percent of domestic consumption is imported (Balassa et al., 1982:11-2).

Table 4: Percentage of Total Manufacturing Employment in Establishments with 500 or more workers, 1966-1981

	<u>Korea</u>	<u>Taiwan</u>
1966	25.7%	34.7%
1971	35.6	36.1
1976	45.1	26.0
1981	40.5	27.5

Sources: Republic of Korea, Economic Planning Board, Mining and Manufacturing Surveys, selected years; Republic of China, Directorate-General of Budget, Accounting and Statistics, Executive Yuan, The Reports on the Industrial and Commercial Census, Taiwan-Fukien Area, selected years

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Table 5: Share of Manufacturing Sales by Largest Fifty Firms(%)

	<u>Korea</u>	<u>Taiwan</u>
1970	30.3%	-
1972	32.9	-
1974	-	16.9%
1975	-	15.8
1977	35.0	15.2
1980	-	16.4
1982	37.5	

Source: World Bank (1987) p. 31

1981 for 41 percent of Korean, but only 28 percent of Taiwanese manufacturing employment. Table 5 highlights a further difference between Korea and Taiwan: between 1966 and 1976 the share of employment in the largest establishments progressively increased in Korea, but declined in Taiwan. Indeed over that decade the number of manufacturing firms in Taiwan increased by 150 percent, while the average enterprise size, measured by number of employees, increased by only 29 percent; by contrast, in Korea the number of manufacturing firms increased by only 10 percent, and the number of employees per enterprise by 176 percent.⁴⁸

Turning to differences in dependence on market mechanisms, associated with small and medium firms is a proliferation in Taiwan of subcontracting between final assemblers and independent suppliers of intermediate inputs, and of ongoing entry by export traders who functioned as conduits to the international market. In contrast to the Taiwanese pattern, Korean firms engaged in subcontracting only to a limited degree, relying instead on vertically integrated, in-house manufacture of their local inputs.⁴⁹ As for export trading, Table 6 reveals that the number of export traders expanded apace with the growth of industrial exports in Taiwan, but lagged export growth in Korea.

What are the mechanisms via which small and medium-sized Taiwanese firms compete with large enterprises from other countries? What was the role of the Taiwanese government in facilitating growth via the proliferation of small firms?

⁴⁸ Data are from Scitovsky (1986) p. 146.

⁴⁹ See Levy and Kuo (1987) and Levy (1988a) for evidence of a Korean tendency towards vertical integration, and a Taiwanese tendency to procure inputs from independent subcontractors in computer keyboard and footwear production.

Table 6: Export Traders in Korea and Taiwan, 1973-1984 (selected years)

	KOREA		TAIWAN	
	<u>Number of Export Traders</u> ^{1/}	<u>Average Value of Industrial Exports per Trader (\$ 000's)</u>	<u>Number of Export Traders</u>	<u>Average Value of Industrial Exports per Trader (\$ 000's)</u>
1973	1,200	\$2,400	2,777	\$1,400
1975	1,900	2,500	4,430	1,000
1978	-	-	8,899	1,300
1980	2,300	7,000	13,320	1,300
1982	3,500	5,800	14,117	1,500
1984	5,300	5,200	20,597	1,400

Sources: Republic of China, Council for Economic Planning and Development, Taiwan Statistical Data Book, 1986 (Taipei) p. 207; Republic of China, Executive Yuan, Directorate-General of Budget, Accounting and Statistics, The Report on 1981 Industrial and Commercial Census Taiwan-Fukien Area Volume VI pp. 156-, pp. 156-7; Republic of China, Ministry of Finance, Monthly Bulletin of Financial Statistics, 1987 p. 94; Republic of Korea, Economic Planning Board, Major Statistics of Korean Economy, 1986 (Seoul) p. 225; and data supplied by Korea Traders Association

Notes : 1/ Members of the Korea Traders Association represents the best available proxy. Membership of the trade association includes those manufacturers who choose to join as well as import and export traders. Only enterprises that are members of the Korea Traders Association are permitted to operate as export traders.

We suggested earlier that government interventions in Taiwan can best be viewed as efforts to promote industrial expansion via unbalanced growth. But before we summarize the details of the relevant interventions, it is helpful to make that strategy more concrete by outlining in some detail the competitive advantages of small and medium enterprises.

The competitive strategy adopted by most Taiwanese firms followed the highly flexible, niche producer pattern. Such a strategy concentrates on short product cycles, quick product delivery schedules, short production runs and mixes of products aimed at particular market niches. So while the cost leaders compete by extending the length of production runs and by increasing product standardization, flexible-niche producers compete by increasing production flexibility and focusing on market segments.

The key to competitive success with the flexible-niche strategy being successive increases in production flexibility and progressive development of marketing capability, Taiwan was compelled to develop capacity in these two areas. Competitive pressures together with sequential externalities generated by Taiwan's particular endogenous expansion process provided part of the answer. In particular, sequential externalities that increased the transactional efficiency of markets in production and marketing activities, as well as technical learning-by-doing that progressively built up technological capability, facilitated Taiwan's competitive strategy and, in doing so, became a driving force in the expansion process.

Taking the transactional efficiency of markets first.⁵⁰ As small firms

50. See Tyler Biggs "The Boundary Between Firm and Market in Taiwan" EIPA Discussion Paper No. 23, Forthcoming 1988, for a discussion of how increasing transactional efficiency of markets in production facilitated Taiwan's flexible-niche competitive strategy and its industrial expansion. See Brian Levy "Export Intermediaries and Industrial Expansion: A Theoretical

entered and expanded, as subcontractors, suppliers, and traders, they continuously created external effects which tended to improve the transactional efficiency of markets. Two factors were responsible for improved transaction efficiency. First, increases in the number of "participants" created positive agglomeration externalities, as a consequence of the increased social and physical proximity among larger factories and subcontractors and among traders and sellers, stemming from reduced search costs. Second, as the number and history of market transactions expanded with ongoing entry, norms and standards, coupled with greater general understanding about how market transactions worked in various industries, built up progressively reducing the costs of contract negotiations and monitoring and the probability of post-contract opportunism. Declining transaction costs drove Taiwanese businessmen continuously in the direction of greater use of the market rather than the firm (hierarchies) for production. Production thus became more disintegrated and flexible as producers succeeded with the flexible niche competitive strategy.

In essence, declining transaction costs facilitated the flexible-niche competitive strategy by reducing the tradeoff between production flexibility and scale economies. This is evident if we look at Figure 3.

Suppose that the prevailing technology of the representative Taiwanese firm is represented by the declining average total cost curve AA, which indicates the trade-off between "normal" average total unit costs (c) and the rates of throughput (q). FF then represents the corresponding relationship between unit costs and degrees of production flexibility (F), given by the current level of production transaction costs (TA_c) and approximated by the standard deviation

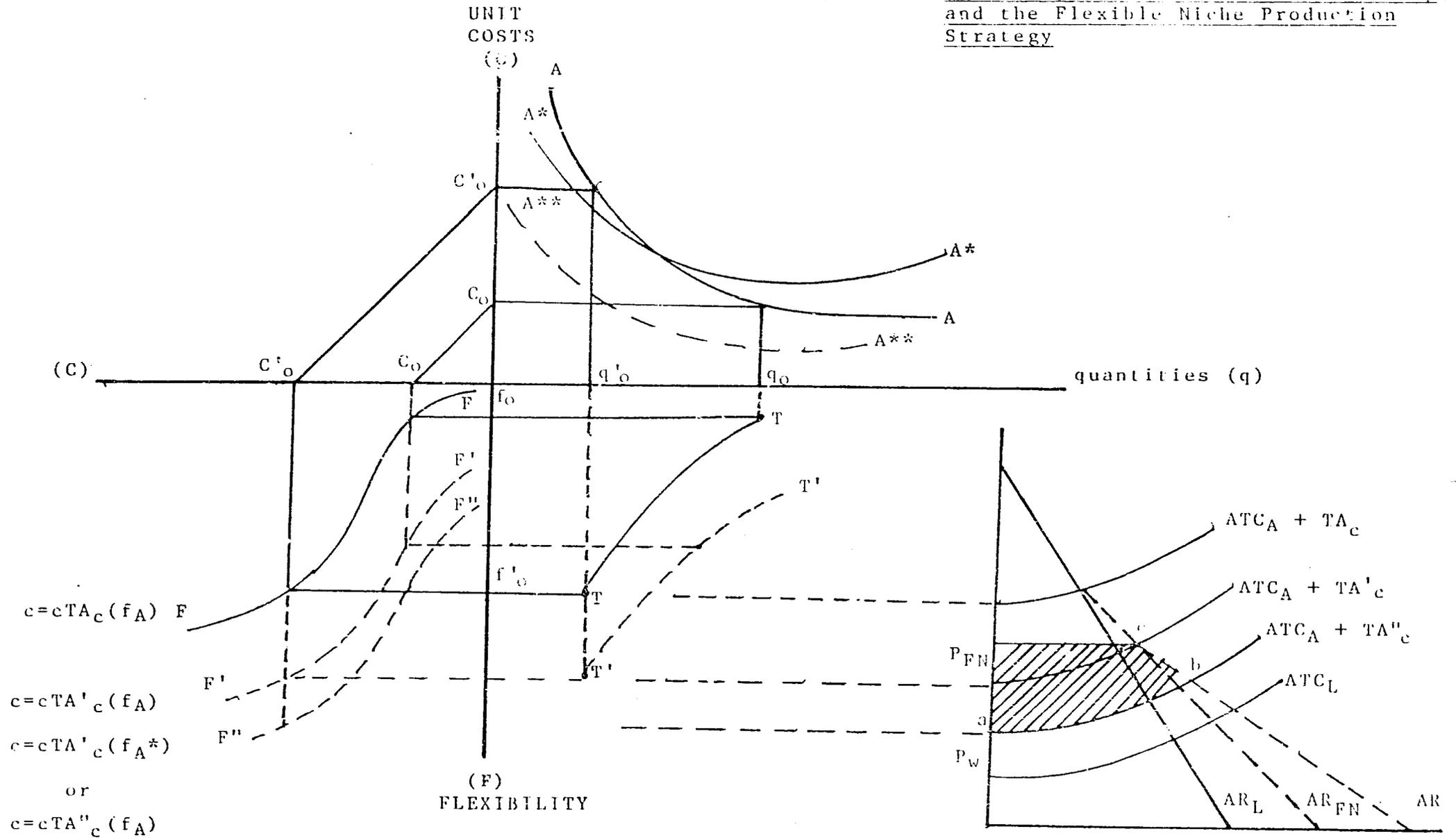
Perspective" EEPA Discussion Paper No. 20, 1988, for a discussion of how increasing transactional efficiency of markets in marketing had similar effects.

in the rate, duration and mixes of throughput that does not significantly increase "normal" unit costs. The constraints imposed by existing technology only allow increasing exploitation of economies of scale and economies of standardization along AA. Thus, any increase in the flexibility requirements of production, given the current transactional efficiency of markets, will incur a cost⁵¹ - one must either change plant sizes (or throughput) along TT (the trade-off quantity/flexibility relation) or increase "normal" unit costs along FF.

Consider an increase in desired flexibility. If we begin with production runs (plant size, subcontracting arrangements, etc.) equal to q_0 , normal average total costs, c_0 , a degree of flexibility, f_0 , and market transactional efficiency, TA_0 , and assume that the required or desired increased in flexibility is from f_0 to f'_0 , on the grounds of the given technology, this would engender very short production runs, q'_0 and high production costs, c'_0 . The cost of increased flexibility, given current technology and transactional efficiency of markets, is $c'_0 - c_0$. Put another way, given the current relationship between technology and flexibility, the cost consequences of having small average firms size, c'_0 , could be competitively disadvantageous if rivals in foreign markets were reaping scale economies with plant sizes, a_0 and production costs, c_0 . A look at the corresponding average revenue and cost curves in Figure 3 makes this point clear. Taiwan's costs would be too high to successfully compete in the same product markets with a cost leader rival at

⁵¹. Standard technologies, which have been in use over the last several decades, are mostly constrained by "Fordist" principles of organization and production. In this technological paradigm, higher production efficiency is correlated with very high degrees of inflexibility - in terms of acceptable variance in production runs and mixes. See G. Dosi (1988) "Sources, Procedures and Microeconomic Effects of Innovation", JEL Vol XXVI, Sept.

Figure 3: Technology, Transactional Efficiency,
and the Flexible Niche Production
Strategy



production cost ATC_L and the world price at P_w .

However, as Taiwanese firms entered into domestic markets (often protected by tariffs and quantitative restrictions from foreign competition) and initially into export markets (which were cross-subsidized by protection of domestic markets) they continuously caused transaction costs to decline.⁵² The increasing levels of transactional efficiency raised the allowable flexibility of production at the given level of average total production costs. This is indicated by a downward shift of the flexibility curve FF to $F'F'$. As transactions efficiency grows and production flexibility increases two things happen. First, overall costs (average total production cost given the current technology, ATC^A , plus transactions cost, TA'_C) decline making Taiwan more competitive. And second, businessmen will be able to differentiate their product on the basis of production flexibility (short runs, delivery schedule, production mixes, etc.) and, more easily, on the bases of changing design and market focus. This second factor is indicated by a change in the elasticity of the average revenue function from AR_L to AR_{FN} at the point where AR_L intersects the old overall cost curve $ATC^A + TA_C$.

Product differentiation and lower overall costs allows Taiwan to compete at a market price P_{FN} , which is higher than the undifferentiated product price P_w . Moreover, if Taiwan is a price taker at P_{FN} , further increases in the transactional efficiency of markets could reduce overall costs even more, producing rents (producer surplus) equal to the shaded area ($acbP_{FN}$) in Figure 3. Such rents can be a powerful force driving subsequent increases in transactional efficiency of markets.

52. In addition to agglomeration and transactions-learning effects, there will be a concerted effort on the part of firms to find ways to reduce transaction costs (institutional innovations, formal and informal sanctions, etc.)

The second force driving industrial expansion in Taiwan is technical change. One only has to look at statistical evidence from the capital goods sector, where Taiwan was transformed in a matter of five to ten years "from an amateurish supplier of machine tools to Southeast Asia into the fourth largest exporter of machine tools to the United States"⁵³, and from the high-tech consumer electronics sector, where Taiwan has become a significant player on world markets in a few short years. Details of the process whereby Taiwan accumulated technological capability have been examined elsewhere, and will not be recapitulated here.⁵⁴

A technological change from the "old" technological paradigm (based on electromechanical devices to new electronics-based devices, e.g. Computer-Numerically-Controlled machine tools) can be depicted in Figure 3 as a new relationship between "normal" average total costs and throughput. A*A* represents the relationship between costs and quantities for the electronics-based technology that allows greater production flexibility for a given level of costs and transactional efficiency of markets. The adoption of this technology shifts the flexibility downward. Since technical change has an affect on both "normal" unit costs and on the ability to further differentiate one's product, the overall cost curve in the example in Figure 3 would shift up slightly but the average revenue function would rotate outward, increasing the producers ability to charge a higher price. One would assume that Taiwanese

53. Alice Amsden (1982) "The Division of Labour is Limited by the Rate of Growth of the Market: The Taiwan Machine Tool Industry in the 1970s" in World Development, Vol. XI, No. 6.

54. Tyler Biggs, "Structure, Dynamics and Performance of Taiwan's Industrial Sector", Employment and Enterprise Policy Analysis Project Discussion Paper No. 17, August, 1988.

flexible-niche producers would progressively earn net benefits from such technological adjustments.

How did government facilitate industrial expansion via the mechanism just outlined. We highlight here three different sets of policies: interventions by government to set in motion the "compulsive sequence" that underlies unbalanced growth; induced interventions to help sustain the endogenous expansion; and interventions to promote the acquisition of technological capability on the part of progressive small and medium enterprises.

To begin with the inducing interventions, industrialization in Taiwan has moved through several phases, from primary import substitution in the 1950s, to export-led growth in the 1960s and turning to a mix of secondary import substitution and higher-value export commodities in the mid-1970s and 1980s. Throughout, government has been directly involved in leading the economic transitions and in shaping the successful expansion within each development phase. The KMT's top government managers already had experience of trying to develop modern industry on the mainland. They had a fairly clear idea of what industries ought to exist in Taiwan and - with some disagreement - in what sequence to establish them. Japan also provided them with a source of ideas, a justification for their conception of the role of government and the main external reference economy for emulation.⁵⁵

Since the early 1950s, government's inducing role has been defined by the KMT as taking the lead in establishing new industries- often single factories. It then either found selected private investors to run the factories or, when nobody would invest, ran them as public enterprises. Throughout the 1950s more than half of industrial production came from public enterprises (a much higher

⁵⁵. Op. cit. Robert Wade (1988), p. 39.

percentage in the upstream basic industries). As the projects got bigger and more technologically advanced, government entered into joint ventures with foreign multinationals. In this way, the basis was laid for production of petrochemicals, plastics, artificial fiber, glass, cement, fertilizers, plywood, textiles and many other products. A variation on this theme has come through government policy to encourage multinational companies to enter into upstream basic industries and into selected new industrial areas, (for example, electronics) to induce the growth of local suppliers and to build the foundation for a high-tech change in comparative advantage.

Downstream production was left as a preserve for local private enterprise. Government promulgated various policies and programs to promote entry and investment into the new industries it had initiated with such instruments as restrictions on imports, sectoral allocation of foreign exchange and concessional credit. As firms and new activities sprang up downstream, the proportion of state ownership of industrial production declined; nevertheless, key upstream sectors tended to be put under control of public enterprises. Even today Taiwan's upstream industries tend to be highly concentrated and dominated by public enterprises (see Table 7 and Figure 4).

Thus, by direct government investment and joint ventures, by encouraging entry of multinationals in selected areas, and by changes in various incentives, government has tried to influence the direction of the choice of consecutive leading industrial sectors and has attempted to spark an endogenous downstream expansion of private firms as a result of its initiatives. The aim has been somewhat different in each development phase. But, in general, it has been to change Taiwan's comparative advantage in anticipation of changing market conditions and to respond to exogenous shocks unforseen.

TABLE 7

Table : The Role of State-Owned Enterprises in Taiwan's Raw Materials Industries, 1966-1986

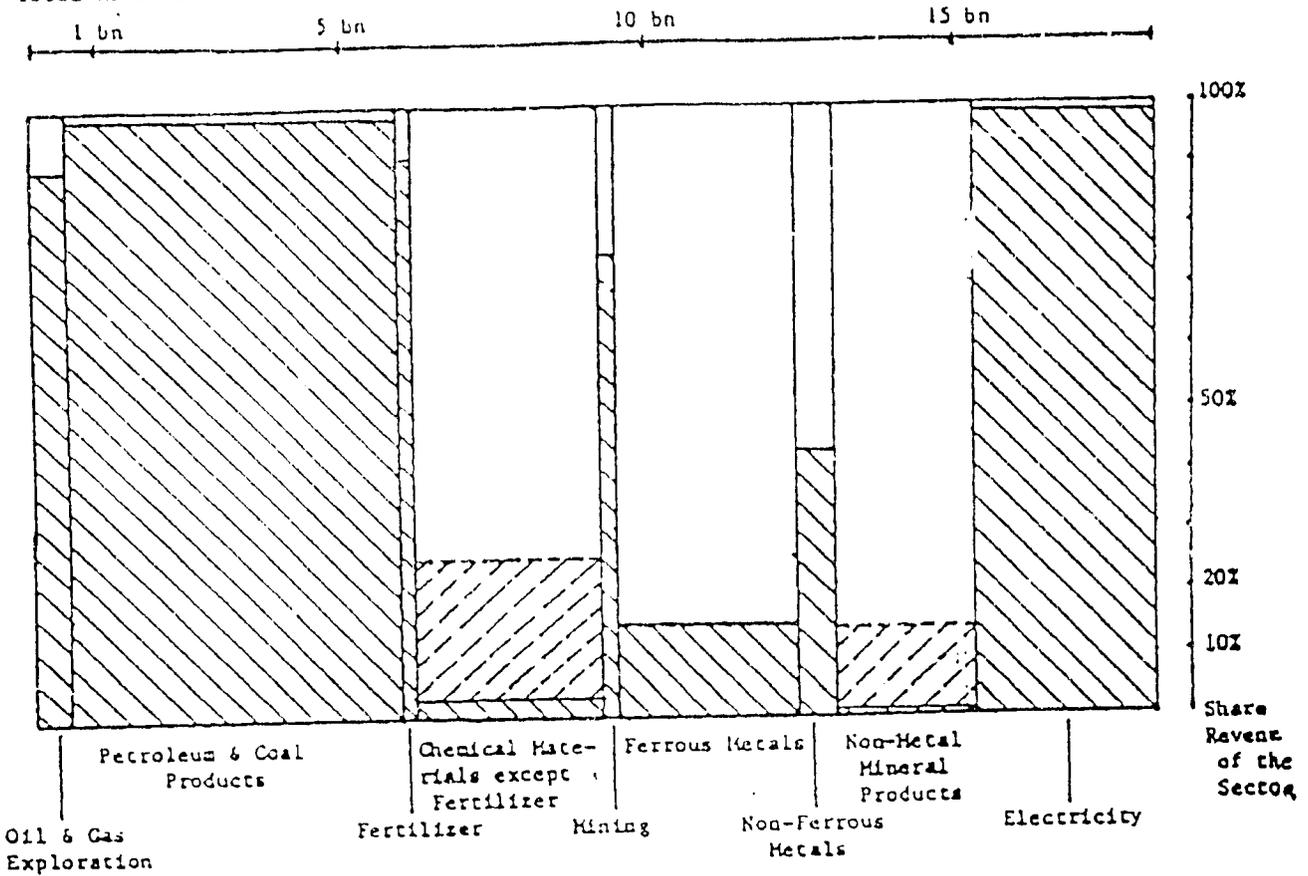
INDUSTRY	Share of State-Owned Enterprises in Revenues of the Industry (f)					Industry Size (Revenues)		SOE Share of Value Added	
	1966	1970	1976	1981	1986	1966	1981	1966	1982
Core Company (a)				(b)		(m US\$)			
OIL & GAS EXTRACTION	n.a.	n.a.	n.a.	n.a.	90.0%	n.a.	n.a.	n.a.	n.a.
PETROLEUM & COAL PRODUCTS	88.3%	69.3%	90.8%	96.0%	98.0%	108	5384	93.2%	79.8%
thereof:					(c)				
PETROLEUM REFINING	95.8%	97.0%	100.0%	100.0%	n.a.	100	5727	97.3%	94.3%
(China Petroleum Group) (d)									
CHEMICAL MATERIALS	44.4%	18.2%	17.9%	17.3%	n.a.	144	3283	40.3%	15.4%
CHEMICAL FERTILIZERS	77.4%	81.3%	90.4%	91.3%	n.a.	77	217	62.5%	n.a.
(Taiwan Fertilizer Co.)									
CHEM. MATERIALS EXCL. FERTILIZER	6.7%	1.5%	7.7%	3.0%	n.a.	67	3053	6.0%	n.a.
But: Largest private group									
(Formosa Plastics Group) (e, g)	n.a.	n.a.	n.a.	23.0%	26.0%				
MINING (Except Oil & Gas)	n.a.	n.a.	n.a.	n.a.	75.0%	n.a.	n.a.	n.a.	n.a.
(C)									
BASIC METALS	35.0%	19.0%	13.3%	13.9%	n.a.	62	3429	39.7%	32.6%
FERROUS METALS	22.7%	11.1%	9.0%	14.8%	n.a.	67	2857	21.4%	34.9%
thereof China Steel Co.	-	-	-	31.9%	21.2%				
NON-FERROUS METALS	97.1%	91.3%	n.a.	n.a.	n.a.	15	571	94.3%	n.a.
thereof									
ALUMINIUM REFINING	n.a.	n.a.	73.6%	43.2%	n.a.	n.a.	217	n.a.	n.a.
(Taiwan Aluminium Co.)									
NON-METAL MINERAL PRODUCTS	0.0%	0.1%	0.2%	0.2%	n.a.	10	2273	0.0%	0.3%
But: Largest private company									
(Taiwan Cement) (g)	n.a.	22.0%	n.a.	14.0%	n.a.				
ELECTRICITY	n.a.	n.a.	n.a.	98.0%	97.3%	n.a.	3016	n.a.	n.a.
(Taiwan Power Co.)				(c)					

- (a) The listed enterprises account generally for more than 90% of the revenues of all state-owned enterprises in the industry.
- (b) For some industries revenues were not available, hence production value was used there instead. Moreover, for some industries 1981 data was not available, hence 1982 data was employed there.
- (c) Estimated.
- (d) Including China Petrochemical Development Co. which is held by China Petroleum Co.
- (e) In 1980, the Formosa Plastics Group accounted for about 48% of man-made fiber sales, and 30% of plastics sales. The group's market share was much larger in individual segments of these industries (e.g., 66% of domestic PVC production, and 63% of HDPE, in 1986. The group member Nan Ya Plastics is the world's largest PVC processor. In 1985, the group had about NT\$ 26 billion sales in man-made fiber, NT\$ 20 billion in plastics, and NT\$ 26 billion in plastics processing.
- (f) The underlying data is potentially unreliable. Both private and public enterprises have reason to under-report output, to save tax or because of national security. The share of SOEs doesn't change substantially (in general not more

4:

The Concentration of Taiwan's Raw Materials Industries, 1981

Total Revenues of the Sector



\ / \ / \ / State-Owned Enterprises
 / / / / / / The Largest Private Business Group in the Sector
 (Formosa Plastics Group and Taiwan Cement)

Sources: See Table ...

As for interventions to promote the induced, endogenous process of expansion, one key set of policies here has to do with efforts by government to promote ongoing entry by small and medium firms rather than expansion in the size of large firms.⁵⁶ Private investors, because of capital constraints, government restrictions, and the uncertain international political situation of Taiwan, were constrained from investing in upstream industries, which tended to be relatively capital intensive, but relegated to the more labor-intensive downstream activities. Moreover, the government controlled formal financial intermediaries (dominated by the banks) and they were inclined to be very conservative. There were preferential selective credit controls as in Korea (concessionary export financing and strategic industry loans) but the volume of these loans and the preference margins on interest rates were not anywhere near Korea's (just on export loans, the rents accruing to Korean borrowers were six to seven times larger than in Taiwan.) Hence, absent were the artificial (private but not social) financial economies for large-scale enterprise in Taiwan. Furthermore, because of heavy financial regulation in Taiwan, a large portion of business credit (particularly for new firms and for smaller businesses) come from curb markets and from internal finance. Such heavy reliance on curb markets (friends and relatives, lending between enterprises, post-dated checks and the like) and on internal accumulated profits for business finance cut in the opposite direction from Korea's subsidies for large-scale operations. In Taiwan, firms had artificial financial diseconomies for large-scale enterprise.

Investment incentives, tax laws, labor laws, and a host of other policies

⁵⁶ See Levy (1988a) for analysis of the reasons why the endogenous expansion will be larger with small than with large firms.

(business licensing procedures, antitrust laws, bankruptcy laws, export quota management) presented strong incentives (though often unintended by the authorities) to limit company size. For example, a five year tax holiday provision in the government's investment incentives for new start-ups in strategic industries created an incentive to start new companies rather than expand existing companies; the corporate income tax was graduated by size categories in terms of net income (NT 50,000 to 10,000, 15 percent of net income, NT 100,000 to NT 500,000, 25 percent, above 500,000, 35 percent) and there was a large gap between maximum rates on corporate taxes (25 percent before 1974 and 35 percent after) and personal income (maximum 50 percent before 1969 and 60 percent after), each of these laws, and the way they were administered in practice, produced a negative incentive on company size; finally, labor laws and their weak enforcement reinforced the already strong incentive to become one's own boss by starting a small company rather than working for someone else.

Finally, there were interventions to promote the acquisition of technological capabilities. Interventions ranging from trade policies, to the pricing policies of state-owned enterprises, to control of labor unions all helped indirectly to promote technological acquisition. But three more direct interventions stand predominant.

First has been the government's policies towards multinational companies. Multinationals were invited to Taiwan directly by individual government officials in some cases, and by a system of profitable incentives, in particular, "strategic" product arrears, where the government wanted to develop technological capability. In the early 1960s, it was in product areas like textiles and sewing machines, later on it became secondary import-substitution

industries and electronics. Once foreign companies began setting up operations in Taiwan, their production methods and capital equipment were imitated by local producers very rapidly, facilitated by both word of mouth and by the mobility of labor from multinational company factories to independent or company-connected supplier operations. It was facilitated as well by government-imposed conditions on multinational direct investments.

Second, search, adoption and diffusion of technology by private firms was also facilitated more directly by the government. Examples of government-negotiated (and sometimes subsidized) foreign technology licensing agreements⁵⁷ abound in textiles, basic industries, electronics and machine tools. Moreover, government set up technology research centers, which imported foreign technology and adapted it to local requirements (for example, the Machine Institute Research Laboratory (MIRL) developed machine tool prototypes for local producers, and the Industrial Technology Research Institute (ITRI -- the ERSC division to be exact) introduced redesigns of imported technologies and prototypes in electronics and other areas.) But more than the technology prototypes, these government institutes made influential contributions to training and practical experience for a host of engineers and a large number of skilled technicians. It has also been government policy to provide incentives to these research institutes to spur the development of marketable technologies, whether they be the product of reverse engineering, local adaptations or new innovations. Local researchers, or those overseas-Chinese lured to Taiwan by high pay and prominent positions, can expect government financial subsidies in the form of concessional loans and government investments to establish companies for the purpose of producing the (proven)

57. Op. cit. Thomas Gold (1981).

marketable technologies they have developed. This allows engineers and research scientists to capture some of the financial gains generated by their efforts. Additionally, extensive technical libraries are operated for business; the government heavily subsidizes trips abroad for businessmen to attend equipment shows and to visit foreign factories; government agencies, such as the China Productivity Center, have been influential in various "strategic" industries in giving direct assistance in upgrading production technology and management; and teams of experts (subsidized by government) are sent to factories to give technical assistance.

Third, government has paid a lot of attention to the kind of education that benefits the economy. government expenditures on education have been second only to defense, averaging about 21 percent of the budget (15-20 percent above the world average). And government education planning has fostered a formal education system that is heavily biased towards churning out scientists and engineers, rather than lawyers and liberal arts majors. It has also developed an extensive technical training network in close cooperation with the business community, as well as lent its support to private technical training institutions.

Industrial strategy and industry structure in Korea and Taiwan. The analyses of Korea and Taiwan have revealed that the two countries differ both in industry strategy and in the organization of their industrial sectors. What are the relationships between these divergent industrial structures and the divergent industrial strategies adopted in the two countries?

First, strategy appears to influence structure. The Korean strategy of government-directed learning appears to have fostered that nation's concentrated economic structure by encouraging individual firms progressively

to increase their export volumes; but the strategy also appears to have saddled Korea with an organization-heavy institutional structure, with administrative negotiation and hierarchical command substituting to an unusual degree in a mixed economy for market mechanisms of co-ordination. By contrast, the Taiwanese unbalanced growth strategy appears to have supported that island's diffusion of economic power through its emphasis on investments that induce entry, and thereby expand market competition and transactional efficiency.

Second, structure appears to influence the efficiency with which strategy can be implemented. Korea's concentrated structure enhanced the efficiency of the strategy of government directed learning insofar as government officials could target their firm-specific efforts at a small number of large firms each capable of a substantial absolute response, rather than at a large number of small and medium enterprises. And Taiwan's transactionally relatively efficient market environment was crucial to the success of the unbalanced growth strategy insofar as it enabled a ready supply of agents to enter and take advantage of the government's externality-creating stimuli.

Third, strategy and structure appear to reinforce one another at the micro as well as the aggregate level. Students of corporate strategy identify two alternative strategies that firms might adopt in competitive international market environments: a strategy of securing market leadership, and a strategy of identifying and occupying market niches; the former strategy typically is most appropriate for large firms, the latter for their smaller counterparts.⁵⁸ Policies to promote government-directed learning both promote large firms and cost reduction through volume increases, and thus broadly reinforce cost

⁵⁸ For a detailed analysis of these and related strategies, see Porter (1980).

leadership corporate strategies. And policies to promote unbalanced growth are consistent with a proliferation of smaller firms, each pursuing potentially profitable market niches.⁵⁹

Two opposite implications for industrial policy might be drawn from the mutually reinforcing character of strategy and structure. One possible implication is that structure is entirely endogenous, and thus that a nation is free to choose whichever strategy promotes in the long-run the preferred structure of industry; from this perspective, the observed differences between Korea and Taiwan in industry structure can be interpreted as the result of more-or-less arbitrary (or politically determined⁶⁰) strategic choices. An alternative implication, one that underlies much of the analysis in this paper, is that initial economic conditions matter a great deal in determining which industrial strategy will yield more substantial benefits.

Initial conditions were quite different in Korea and Taiwan. As Table 8 reveals, per capita income and levels of education were substantially higher in Taiwan than in Korea at the outset of outward-oriented industrialization. More fundamental, if less readily measurable, dating back to the nineteenth century the population of Taiwan, migrants from the Southern Chinese coastal province of Fukien located between the major trading ports of Hong Kong and Shanghai, appears to have enjoyed more substantial experience in business than did Koreans, at that time emerging only gradually from their status as citizens of a "Hermit Kingdom" and, in the absence of a fully monetized economy, dependent

⁵⁹ For evidence and analysis of divergent strategic orientations along these lines by Korean and Taiwanese firms, see Levy (1988c).

⁶⁰ For an analysis that highlights political determinants of differences between Korean and Taiwanese industrial strategies, see Cheng (1987). As Jones (1980) discusses, the hypothesis that industry structure is entirely a consequence of government policy enjoys substantial support in Korea.

Table 8: Levels of Development in Korea and Taiwan

	<u>Korea</u>	<u>Taiwan</u>
1. GNP per capita (in constant 1965 US \$)		
1955	\$ 81	\$ 140
1960	95	157
1965	103	216
1970	150	312
2. Total Population (millions)		
1955	21.5	9.1
1960	25.0	10.8
1970	31.5	14.7
3. Population over Six Years of Age with Twelve or More Years of Education ('000s and percentage)		
1952	-	650 (10.2%)
1960	1,038 (5.3%)	1,207 (14.2)
1965	-	1,788 (17.4)
1970	2,729 (10.4)	3,740 (30.2)

Sources: Republic of China, Council for Economic Planning and Development, Taiwan Statistical Data Book, 1986 (Taipei); Republic of Korea, Economic Planning Board, Korea Statistical Yearbook (various years); Republic of Korea, Economic Planning Board, Handbook of Korea Economy; Republic of Korea, Economic Planning Board, National Bureau of Statistics, Population and Housing Census Report (1960, 1970, 1975)

in part on barter as a vehicle for domestic trade.⁶¹ Perhaps most fundamental of all are differences in culture: in Korea a combination of social homogeneity and a deep-rooted centralist Confucian tradition has long encouraged both hierarchy and loyalty on the part of subordinates to their hierarchical superiors; in Taiwan a migrant frontier ethos and, in the contemporary period, the tension between a Kuomintang regime dominated by officials who came to Taiwan only in 1949 and a business class dominated by Taiwanese, the Kuomintang adherence to the economic philosophy of Sun Yat Sen, and a strong sense of political precariousness on the part of businessmen, all tended to discourage large-scale organization and the accumulation of economic power in private hands.

Evidence of substantial initial differences between the two nations suggests that there was nothing arbitrary about their choices of industrial strategy. With the cost of market transactions relatively high at the outset of export-led industrialization, a strategy of unbalanced growth is not likely to have afforded Korea the success it enjoyed through its strategy of government-directed learning. Nor is a government-directed learning strategy likely to have had much prospect of success in Taiwan, as is evident from the failure of recent efforts to pursue Korea-style policies. On the contrary, a significant fraction of the development successes of Korea and Taiwan can be attributed to the ability of their governments to identify industry strategies that fitted well with their respective economic environments, and to implement them effectively, willing to experiment, to plunge in, learn from error, and adjust

⁶¹ For a discussion of the evolution of Taiwan's business elite, see Gold (1981). For evidence of the incomplete development of a monetary economy in the 19th century in Korea, see Pallai (1975), and Amsden (1988).

as the results of initial efforts became apparent.⁶²

INDUSTRIAL POLICIES IN 'SOFT' STATES

The focus thus far has been on industry strategies for countries with governments capable of devising, implementing and sustaining socially beneficial policies. However, a sobering lesson of post World War II development efforts has been recognition that in many less developed nations the extent and character of intervention often is shaped by forces that have little to do with the promotion of dynamically efficient industrialization. What industrial policies are appropriate for these soft states? We analyze first what might be the consequences of adopting government-directed learning or unbalanced growth strategies in soft states. Second, we examine ways in which industrial policies in soft states might usefully extend beyond an exclusive focus on prices and free markets. Third, we discuss briefly some industrial policies that might help overcome initial price distortions.

Hard Strategies in Soft States

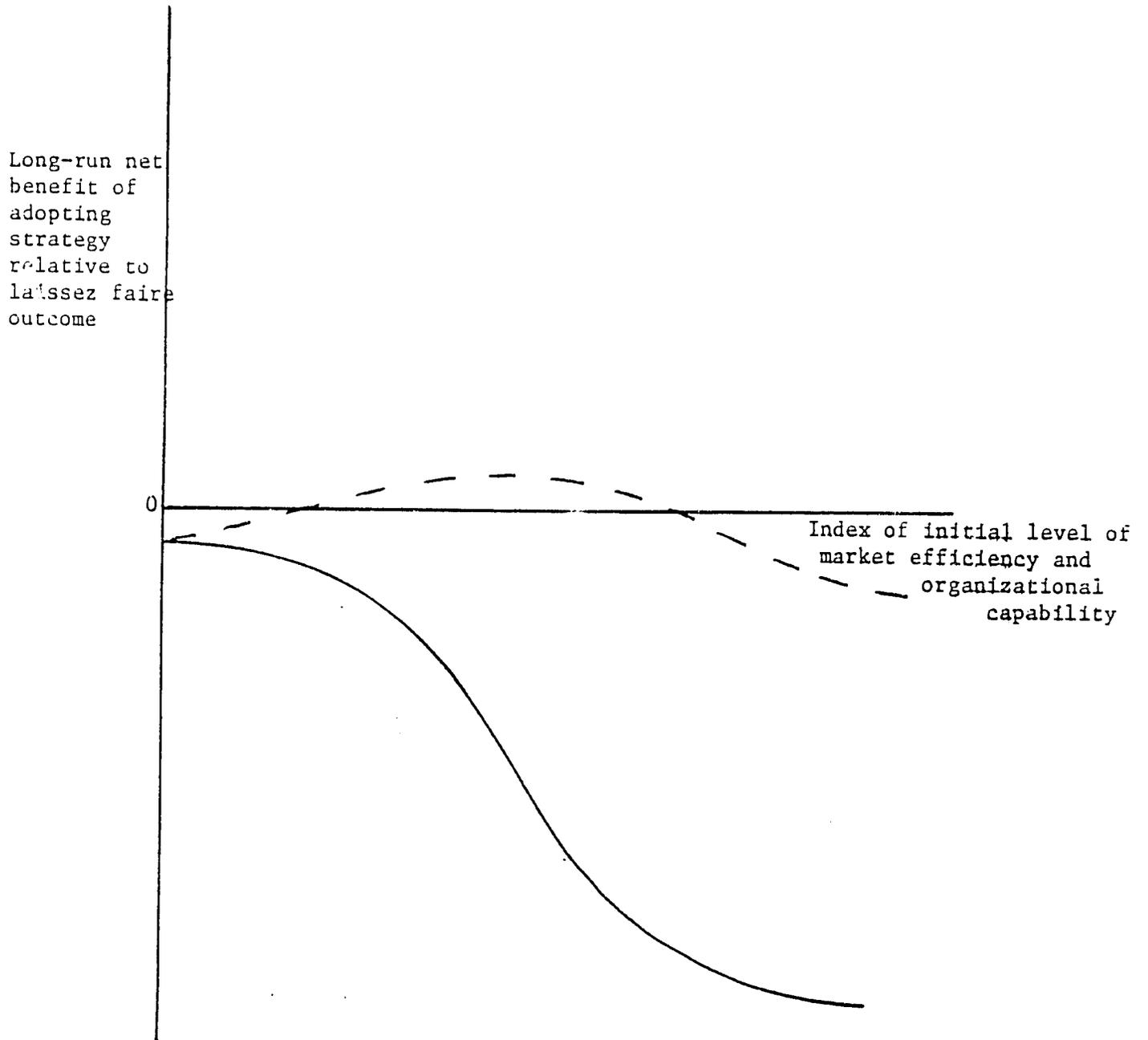
In the face of the analysis and evidence thus far, it might be tempting to advocate interventionist industrial strategies for a wide range of less developed countries with initially low levels of organizational capability and market efficiency. However, as Figure 5 summarizes, many of our earlier propositions as to the efficiency of various industrial strategies look quite different for soft states.

First, government-directed learning now emerges as the least, rather than the most, desirable strategy. The combination of highly selective instruments

⁶² See Jones and Sakong (1980) pp. 290-295 for a vivid depiction of the flexible, learning orientation of Korean policymakers.

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Figure 5: The Benefits of Industrial Strategy in a 'Soft' State



of intervention and concentrated economic power associated with government-directed learning affords enormous opportunities for socially-unproductive rent-seeking behavior on the part of business elites and government officials, opportunities that are likely to prove irresistible in soft states. Second, across a wide range of levels of market development the nett benefit relative to laissez faire of promoting endogenous expansion via the initial stimulus of lumpy, publicly-supported investments is shown to be positive, although the magnitude of the benefits is less than in hard states. The implied hypothesis here is that, even in a relatively weak state, the interventions associated with unbalanced growth could help promote sequential externalities, while being less likely to undermine spontaneous, laissez faire industrialization than could interventions associated with purported learning strategies. To be sure, the weaker is the state, the less efficient will be the targeting of investments, the greater will be the risks of undermining industrialization via distortionary intervention, and thus the narrower is the range in which efforts to promote unbalanced growth are likely to be desirable. Third, as with the analysis of hard states, the case for interventionist industrial strategy weakens in countries with substantial initial capabilities. But, whereas in hard states the case weakens because nett benefits relative to laissez faire decline but remain positive, in soft states the nett benefits of strategies of government-directed learning in particular turn sharply negative with increases in initial levels of market development, reflecting increases in the potential for spontaneous laissez faire industrialization with higher initial capabilities, and thus a rising opportunity cost of blocking the spontaneous process.

Figure 6 brings together the various propositions as to the relationship

between the desirability of alternative industrial strategies and levels of political and market development. The broken lines divide the figure into three areas. Area I represents the range of political and market development for which government directed learning represents the preferred strategy; area II the range for which an unbalanced growth strategy is preferred; and area III the range for which a nation is likely to do best if its government adopts a laissez-faire, hands-off industrial policy. The figure thus illustrates our central hypothesis: there is no single industrial strategy appropriate for all less developed nations at all times. What matters rather is the goodness of fit between, on the one hand, the chosen strategy of industrialization and, on the other, a nation's economic environment and the kind of policies that nation's government has the capability of administering effectively over the long haul, given the character of the political mechanisms of decision-making.

Promotional Interventions in Soft States

A wide range of countries are likely to be in Area III of Figure 6: given their initial levels of market and political development they would do better with laissez-faire, hands-off industrial policies than with either unbalanced growth or government-directed learning strategies. This section explores ways in which laissez faire might usefully be supplemented in soft states by market-completing programs and other market-completing interventions (strategy 4 in Figure 1). We make no claims to comprehensive coverage. Rather, our goals are to delineate a framework for thinking about potentially desirable interventions, and to lay out a few, very preliminary, more specific ideas for intervention.

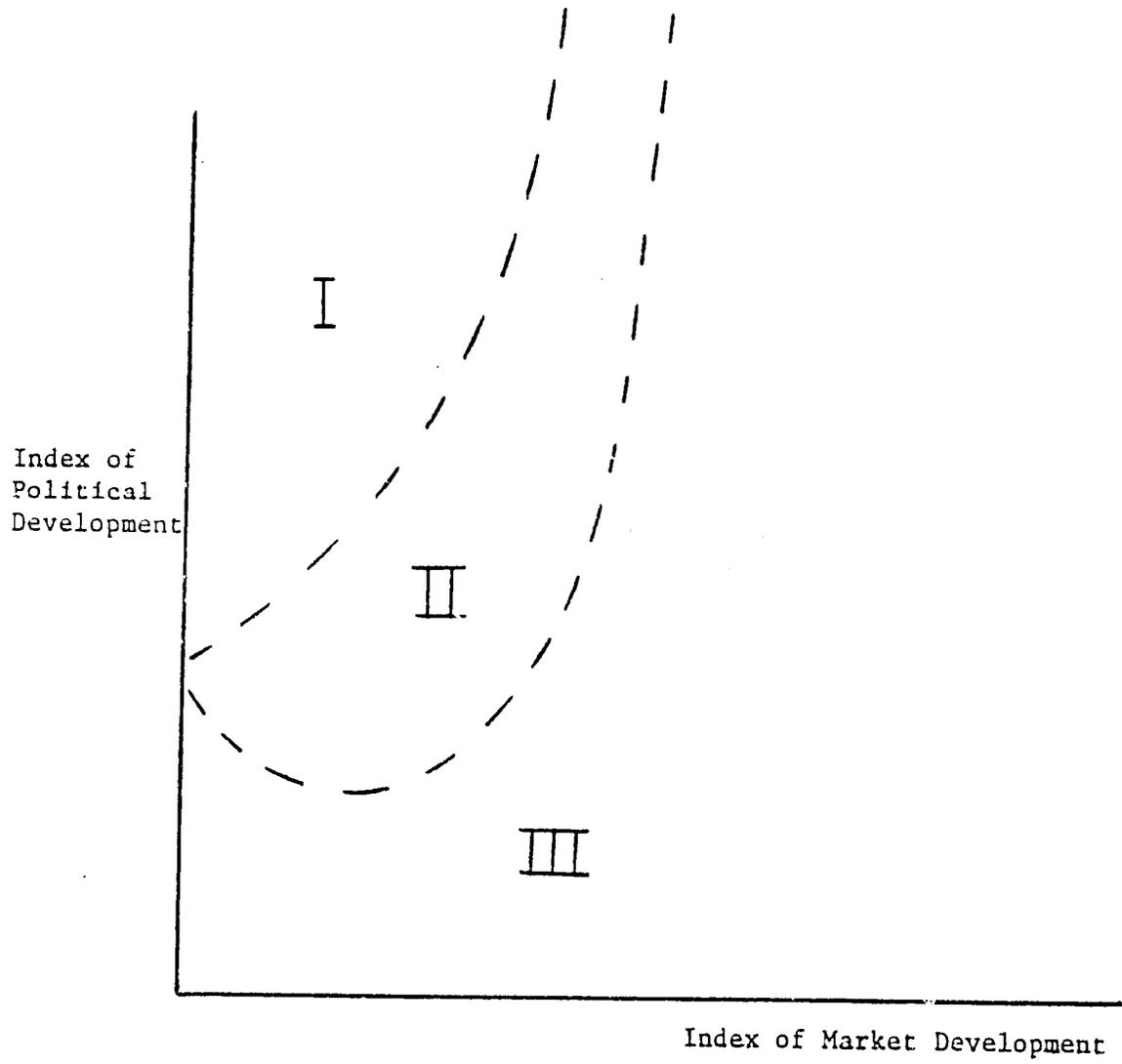
Interventions to promote dynamically efficient industrialization in soft states need to be structured in ways that limit the risk of redirection into

socially unproductive rent-seeking. Three principles can help guide their formulation.

First, interventions should be designed with careful attention to their impact on industry structure: they should support the "dynamic middle" of progressive small and medium enterprises, rather than either the largest firms or micro enterprises. The dismal experience of 'crony capitalism' in the Philippines subsequent to President Marcos' efforts in the 1970s to push industrialization via Korea-style policies suggests that in soft states interventions targeted to large firms are very likely to be hijacked to promote the enrichment of favored public and private elite groups. Interventions targeted to micro enterprises are both less vulnerable to hijack and, in the event of hijack, are likely to result in less extreme distortions. However our experience suggests that, while micro enterprises can offer a welfare safety net on the margins of society, they have little potential to spark and sustain industrial expansion. By contrast, the experience of Taiwan confirms that progressive small and medium enterprises can be the mainstay of prolonged dynamically efficient industrialization. Small and medium enterprises require transactionally efficient markets to thrive. So policy commitments to promote competition, to remove all bureaucratic obstacles to entry and exit, and to pursue market-completing programs can be important in promoting the dynamic middle of the industrial structure, and thereby navigating successfully between the pitfalls of socially unproductive rent-seeking and dead-end welfare-oriented policies.

Second, interventions in soft states should minimize discretion by government officials as to who will enjoy access to the available benefits. Nondiscretionary interventions minimize the opportunities for allocating

Figure 6: Initial Conditions and the Choice of Strategy



benefits according to criteria unrelated to potential performance. And guaranteed access is a reliable signal to firms lacking connections in government (more likely progressive small firms than large enterprises) that they might also benefit from the relevant program.

Third, interventions in soft states should be linked to export performance wherever possible. As the earlier analysis of Korean industrial policy suggested, tying interventions to export performance has benefits additional to those highlighted by standard considerations of efficient resource allocation. The extent of a firm's success in export markets is a uniquely unambiguous "practical yardstick for measuring progress towards international competitiveness";⁶³ firms engaged in exports enjoy opportunities for learning about technology, product design and market preferences not open to firms that produce only for domestic markets; and continual change in the international marketplace ensures that learning and productivity gains are ongoing, and not one-time efforts.

The close link between export success and productivity suggests that, contrary to our second principle, interventions linked to export performance can sometimes be discretionary even in soft states. For one thing, the Korean experience suggests that, even if they are granted discretionary advantages which might under some circumstances be construed as socially unproductive, successful exporters have little incentive to backslide on their efforts to improve productivity: once they had successfully penetrated export markets, protection at home and associated rents added to the incentive of Korean exporters to increase their export volumes, thereby moving further down the learning curve, reducing costs, and increasing productivity and -- with no

⁶³ Pack and Westphal (1986) p. 100.

downward pressure on domestic prices — profits.⁶⁴ For another thing, export-oriented interventions afford fewer opportunities for government officials to stray, for whatever reason, from dynamically efficient actions. As Anne Krueger put it, "since even the most unrealistic policy-maker recognizes that foreigners cannot be forced to accept domestically produced goods, any decision to encourage a line of exports that happens to be uneconomic will be accompanied by large losses, either to the exporter, who will then contract production, or to the government, if it is inducing exports by subsidies. Either way the costs are highly visible and provide feedback that policy is inappropriate, feedback that is far stronger than an implicit or explicit tariff of comparable magnitude under import-substitution regimes, where firms have captive markets."⁶⁵

Five examples of potential interventions that we think hold substantial promise illustrate how the three principles might be applied.

* Promote informal financial markets. Our field research in Taiwan revealed that informal sources of credit, rather than specific government lending programs, were the mainstay of finance for that island's progressive small firms.⁶⁶ Indeed, long experience of failure in a wide range of countries confirms that formal credit institutions lack the information and incentives to lend to promising, but not yet established progressive small and medium

⁶⁴ For a persuasive theoretical explanation of these relations between import protection and export promotion, see Krugman (1984). For compelling evidence of a parallel relation between import protection and export promotion in Japan, see Yamamura (1986).

⁶⁵ Krueger (1984) p. 151

⁶⁶ For a detailed analysis of Taiwanese financial markets, see Biggs (1988).

enterprises.⁶⁷ Governments cannot directly promote lending in curb markets. But the Taiwanese experience points to a range of possible mechanisms for strengthening that market. All of these interventions are nondiscretionary, and increase the transactional efficiency of a market that is of critical importance for progressive small firms

* Guarantee working capital for exports. A shortfall of working, rather than investment, capital has emerged as a major constraint on expansion by progressive small firms.⁶⁸ Both Korea and Taiwan have programs that guarantee payment to banks who provide working capital to exporters against the assurance of letters of credit from buyers.⁶⁹ A program of guaranteed working capital for exports can serve as one certain channel of access to finance for progressive firms seeking to grow (although, contrary to the pattern in Korea, such credit should not be provided at subsidized interest rates, lest large firms—seeking to maximize subsidies — squeeze their smaller counterparts out of the relevant export markets).⁷⁰ The nondiscretionary character of guaranteed access to working capital for exports limits the opportunities for arbitrary refusal

⁶⁷ See Little (1987) pp. 218-221, 233 for a useful overview; also Anderson (1982).

⁶⁸ See, for example, Anderson (1982); Biggs, Levy, Oppenheim and Schmitz (1987); Biggs (1988).

⁶⁹ A letter of credit is a commitment from a bank designated by the buyer to pay for an order upon the buyer's receipt of merchandise in satisfactory condition. See Rhee (1985) for details of how export credit guarantee schemes might be implemented. In practice, coverage in Taiwan proved less than universal in the face of the extreme conservatism of that country's formal banking system; but well-established informal financial markets were able to absorb the slack. See Biggs (1988) for further details.

⁷⁰ For evidence of this perverse pattern in Korea, see Levy (1988b), and Park (1983).

or grants by government officials;⁷¹ and its link to exports ensures that the financing will go to relatively productive activities.

* Provide incentives to promote the entry of export traders. Both theory and evidence from Taiwan suggest that the proliferation of medium-sized export traders, and associated reductions in the costs of international transactions, was important in sustaining the participation of the dynamic middle in Taiwan's export expansion:⁷² without traders, the relatively high cost of learning about unfamiliar foreign environments would have been a major obstacle to international trade by small manufacturers and by the buyers in small volumes on whom small manufacturers depend for orders. Although the proliferation of medium-sized traders proceeded spontaneously in Taiwan, we are persuaded that government programs could provide an important initial spur to promoting trader entry; once entry and exports are underway, we expect that an ongoing proliferation of traders and small manufacturers would continue spontaneously. We have not yet worked out details of how a program to promote traders might be implemented; but the risks associated with even discretionary incentives are likely to be low, as long as the incentives are targeted to smaller traders, and nonparticipants in any trader-promotion program remain free to enter and engage in export trading.⁷³

⁷¹ But, as did occur in the Philippines, especially conniving businessmen and government officials might be able to extract (and abscond with) very substantial loans with letters of credit for orders they had no intention of fulfilling.

⁷² For a theoretical analysis, see Levy (1983a); for detailed evidence from Taiwan, see Lorsch (1988).

⁷³ It is worth making note of a related program to promote trade: subsidize trade shows in the exporting country; and subsidize exporters to attend and exhibit in trade shows abroad. Our field experience suggested strongly that trade shows were important channels for learning as well as marketing for exporters from the Philippines, Taiwan and Korea.

* Provide selective incentives for entry by multinational exporters of final products, with the magnitude of incentives calibrated to the extent of local content procurement from independent component suppliers. As with the promotion of traders, the objective here — again influenced by field research in Taiwan, where backward linkages from multinational exporters represented an important channel of entry and technological learning for small manufacturers, who often subsequently became direct exporters themselves⁷⁴ — is to promote the demand for production by progressive small and medium manufacturers. We interpret the Taiwanese experience to imply that once markets for efficient subcontractors include a threshold number of participants, expansion and entry by additional final manufacturers and subcontractors can be self-sustaining;⁷⁵ thus the objective of the proposed intervention is to get the process started.⁷⁶ The linkage between subcontracting and final-good exports is consistent both with our principle that selectivity should be considered only in the context of export activities, and with evidence from the Philippines and elsewhere that local content programs tied to final suppliers of protected domestic markets

⁷⁴ For evidence of this pattern in Taiwan, see the case study of Singer Sewing Machines by Schive (1978), reported in Amsden (1985). For evidence of at least some proliferation of backward linkages in Singapore, see Lim and Fong (1982).

⁷⁵ Levy (1988a) delineates the relevant mechanism.

⁷⁶ One possible extension of the proposal in the text in countries that are shifting from import-substituting to outward-oriented regimes is to mandate the break-up of inefficient vertically integrated enterprises as a way of getting subcontracting markets started for activities where experience elsewhere with independent subcontracting has demonstrated that vertical integration has no overwhelming transactional or technological advantages. See Lall (1980) for evidence that although final producers (in his case for the domestic Indian market) might initially be reluctant to shift from vertical integration to subcontracting, the arrangement often proved efficient subsequent to their being forced by government to establish ties with independent subcontractors.

tend to promote intermediate activities in which domestic producers have no prospects for achieving dynamic efficiency in the long-run.⁷⁷

* Provide selective, firm-specific incentives to national exporters of manufactures. Of the five examples, we have least confidence in the desirability of this proposal; it highlights, one final time, the opportunities and pitfalls of selective export promotion in soft states. The opportunities are substantial: as with multinational firms, national exporters can generate important backward linkages to independent subcontractors; additionally, when national firms grow to become significant players in oligopolistic world markets, they are more likely than multinational firms with already established market positions to act as national champions, willing to challenge for increased world market share from national factories, even if their challenge entails significant disruption of global markets.⁷⁸ The dilemma is that (unlike multinational firms already endowed with expertise) national firms cannot be full-blown exporters right from the start-up of production; so a sustained program of selective support for potential national exporters cannot be linked exclusively to actual export performance. Selective incentives in Korea appear to have been contingent on initially modest, but progressively rising shares of exports in a firm's total production. But for a soft state, the risk is that initially modest export performance requirements will progressively be debased. Thus, as a crude rule of thumb, we would suggest that selective firm-specific

⁷⁷ See Biggs, Levy, Oppenheim and Schmitz (1987) for evidence of this pattern in the Philippines electronics and automobile components industry. See also Vattana (1988) for evidence of a similar pattern in Thailand's automobile industry.

⁷⁸ For vivid examples of the aggressive Japanese challenge in the television and semiconductor industries, see Yamamura (1986) and Borrus, Tyson and Zysman (1986).

support of potential exporters should be considered in soft states only if firms can from the outset export at least 50 percent of their production.⁷⁹

Strategies for Overcoming Price Distortions.

Our discussion of promotional interventions in soft states presupposed a laissez faire environment, with more or less undistorted prices. This presupposition is naive: a central dilemma soft states pose for economic policymakers is precisely their willingness to create and tolerate price distortions as a way of channelling rents to favored clients. Would the net benefits of our proposed promotional interventions be positive even in soft states with distorted price environments? And would the proposed interventions help move policy away from the pre-existing distortions? Happily, as a few final comments suggest, the answer to both questions appears to be yes.

Powerful special interests that gain from price distortions — inefficient industrialists who can profit only behind high tariff walls, government officials who can extract rents by virtue of the rationing power afforded by disequilibrium prices — typically oppose efforts to move from a more to a less distorted price environment. In the face of these interests and their influence, proposals to eliminate distortions directly have little likelihood of being heeded. By contrast, our proposed interventions help promote the move towards nondistorted prices via a more roundabout route:⁸⁰ rather than confront directly the interests blocking reform, the proposals work to strengthen

⁷⁹ It is perhaps worth noting explicitly that this condition says nothing as to the potential advantages of programs that provide firms with fewer than 50 percent exports either guaranteed working capital for their export sales or any other incentives linked directly to actual export performance.

⁸⁰ For two important contributions to the analysis of roundabout routes to policy reform, see Hirschman (1965) and Tendler (1982).

interests that stand to gain from subsequent changes in policy.

The promotion of exporters can be a central ingredient of roundabout strategies for effecting policy change. Exporters rarely are the beneficiaries of the most egregious distortions associated with import-substituting regimes. Rather, import restrictions make their lives more difficult, entirely denying them access to imported inputs of requisite price and quality, or affording access via cumbersome, time consuming, and unpredictable bureaucratic procedures that effectively foreclose the possibility of participating in those international markets where rapid response is crucial for success. Our proposals to guarantee working capital to exporters, to promote export traders, to promote multinational exporters with backward linkages to domestic subcontractors, and to selectively subsidize exporting national firms all would help strengthen factions of society that, as they gain in influence, are likely to become increasingly vocal advocates of policy reform.

One last point. Our proposals have been presented as desirable on their own merits in soft states with undistorted price environments. Export processing zones, tariff drawback schemes for direct and indirect exporters, bonded warehousing programs and the like are additional mechanisms for promoting exporters by affording tariff-free access to otherwise protected inputs,⁸¹ mechanisms that have no attraction in already undistorted price environments. But they are exceedingly attractive options in soft states riddled with distortions, where the objective is the roundabout one of working to strengthen the hand of interests favoring reform.⁸² It was evident to us in our work in

⁸¹ Described in detail in Rhee (1985).

⁸² Although given their bureaucratic character, they are likely to discriminate against small and medium enterprises for whom the opportunity costs of the requisite paperwork may exceed the benefits.

the Philippines that, for all of the shortfalls in implementation, export processing zones, tariff drawback schemes, and bonded warehouses were crucial in enabling manufactures to take root; and these exporters were in late 1986 among the most vociferous advocates of continuing policy reform. Indeed, it was Korea and Taiwan that pioneered the use of zones, drawbacks and the like in the early 1960s, a time when both countries were themselves working to navigate the shift from inward to outward-oriented industrial strategies. But we have drawn enough lessons from those countries for one paper. A detailed political economy analysis of how they smoothed their policy transitions must await some other occasion.

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