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## Factor market distortions and export performance: An eclectic review of the evidence

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# Kieler Arbeitspapiere

# Kiel Working Papers

Working Paper No. 259

Factor Market Distortions and Export  
Performance

- An Eclectic Review of the Evidence -

by

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## Foreword

This paper is based on a report commissioned by UNCTAD to serve as an input for the 1986 Trade and Development Report. The views expressed herewithin are solely those of the authors. Furthermore, the publication of this report should in no way be interpreted as official sanctioning or approval of the contents by UNCTAD, nor should even tacit agreement by UNCTAD with the approach, analysis or conclusions be assumed.

The report itself attempts to shed some light on a subject which is of paramount importance in international economics, but which has been given surprisingly little attention. The approach taken is based on mainstream economic thought, whereby every effort has been taken to couch the text in terms understandable to informed politicians, businessmen and laymen. This seemed to be essential should the message embodied in this paper be easily absorbed. The authors nonetheless admit that whether the message is accepted depends - inter alia - on the willingness of the reader to allow deductions from an eclectic approach to be generalized upon. Despite this weakness the authors hope that serious discussions will be induced with the aim of improving the international allocation of resources so as to increase the welfare of all parties concerned. In light of current or rather continuing financial constraints faced by many developing countries, a more efficient use of resources leading to higher income levels must surely be a goal which can be generally agreed upon.

The authors would particularly like to thank Lutz Hoffmann and his staff at UNCTAD for worthwhile comments. Likewise the participants of a working seminar at UNCTAD, at which the initial re-

sults were presented, also contributed with their comments and criticisms in making this paper what it is. Indebtedness is due for sure to Peter Fröhler and John Gregory from UNCTAD who responded to the detailed data requests of the authors and skillfully produced the data required. Last but not least the unremitting efforts of Christiane Schröder to decipher our pencilled thoughts made this form of promulgation possible. Given the burdens which they all carried it seems quite fair and just that they also accept the responsibility for the contents. However, not wanting to place any individual under undue duress, they are all exonerated and the authors fully accept the usual responsibility for the contents and possible errors therein - may they be forgiven for the latter.

Bernhard Fischer  
Dean Spinanger

Kiel, June 1986

#### A Note Concerning Set-up and Wording

In order to exemplify or digress on certain topics without disrupting the train of thought "Boxes" - typed single space rather than one and a half - have been used. The terms industrialized (IC) and developed countries are synonymous; likewise the terms industrializing and developing (DC)/less developed (LDC) countries are identical.

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## I. Prices, the Allocation of Production Factors and Trade

### 1. Introduction and Relevance

World trade flows have undergone changes in the last two decades which transcend in a global context what would have belonged to a feasible set of forecasts thirty years ago. Beyond a doubt, any attempt in the mid-fifties "to pick the winners and losers" three decades hence would have produced but few on-target estimates. Even moving the vantage point up to the mid-sixties would hardly have sharpened the perception for foreign trade developments in the ensuing decades. It might be recalled, for instance, that a rather pessimistic picture of the future was painted for the countries described in an in-depth portrayal of Asian economies (see Box 1), which was researched and written in the mid-sixties<sup>1</sup>. In the meantime some of those countries described in that tome now belong to the set of the more successful developing countries.

The conclusion (see final paragraph of Box 1) drawn from the above prediction<sup>2</sup> but also from a sophisticated econometric forecast of future world production patterns (see also Box 1) relates directly to the topic of this paper: namely to yield evidence - in connection with performance in world trade - on the relevance of ensuring that domestic factor markets are relatively free from influences which shift production away from comparative advantages and ensuring that entrepreneurs are not significantly hindered in reacting to world market conditions due to foreign exchange/financial market restrictions. Underlying this entire approach are principles (briefly outlined in Box 2) fundamental

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<sup>1</sup> As Little (1982, p. 390, footnote 17) points out, Myrdal's Asian Drama was an implicit plea for planning, something he had fervently advocated a dozen years earlier (Myrdal, 1956).

<sup>2</sup> Singling out the Asian Drama does not imply that it alone erred in underestimating the capability of developing countries to successfully compete in world markets. Actually it is but one of the many publications which is characteristic of an era in development economics thinking: For an overview the interested reader is referred to Meier, Seers (1985).

to market or mixed economies, which place particular emphasis on the economic role of prices in determining the demand for and supply of labor/capital. To the extent that relative prices can fulfill their role, they also clearly signal to entrepreneurs where gaps between supply and demand exist or are developing. Entrepreneurs for instance, in reacting to perceived supply shortages, do so because they expect to be able to profit from their engagements, but at the same time they are ensuring with their actions that - barring other influences - the economic potential of a country is being efficiently tapped.

In the Asian Drama, however, the ability of the price system to function in accordance with the principles of market economies was implicitly doubted. Or rather the ability of entrepreneurs<sup>1</sup> in developing countries to react to world market conditions and to direct resources into profitable or more profitable activities was - if not doubted - at least neglected or underestimated<sup>2</sup>.

While the existence of economic incentives alone is not necessarily a sufficient condition to induce an economy to move down a certain development path, their crucial role was already beginning to be appreciated in the mid-sixties. Since then, a wealth of systematically collected information of comparable nature has been gathered on development strategies from a wide range of individual countries. In essence these studies show a clear picture of the positive impact that competition has in ensuring an efficient allocation of resources. Thereby competition with foreign counterparts is often viewed as the acid test for establishing the economic viability of ongoing businesses. This being the case it is thus logical that opening the economy to outsiders - either through decreasing or rather eliminating protection (be it

---

<sup>1</sup> See e.g. Leibenstein (1966) on the importance of incentives in providing crucial impulses for development.

<sup>2</sup> The conclusions drawn in the Asian Drama can be deduced as resting on very inelastic supply and demand reaction functions.

for imports or import substitutes) - is considered by mainstream economists to be the most efficient means of remaining or becoming competitive<sup>1</sup>.

However, between an outward-oriented economy and one which is virtually free of self-imposed distortions, a large gap exists. Hence, the focal point of the ongoing debate about which path to take centers around the appropriate policies aimed at closing this gap. These discussions have unfortunately induced but few empirical studies on the magnitude of factor market price distortions and their ramifications vis-à-vis performance in world trade or (in a broader sense) economic growth (see Krueger, 1984, p. 555). While it is the objective of this paper to attempt to shed some additional light on the relevant issues at large, i.e. in connection with factor market distortions and trade (see Box 2 for some crucial introductory remarks on this topic), it would be presumptuous to consider the evidence to be anything more than circumstantial. Caveats are thus due for two main reasons. First of all, since distortions permeate all facets of the demand for and supply of labor and capital, it is extremely difficult to disentangle them in a manner to allow a clear-cut interpretation. Secondly, other factors like shifts in demand, the magnitude of political/social judgement factors, or intercountry social preference differentials, may change over time in an unknown manner and thus mask over underlying trends.

Before the paper begins with a brief overview of trade trends, a short digression is made on the relevance of the approach chosen. Then trends in world trade are referred to, starting on a highly aggregated level and descending to or rather abstracting from a product level at which specific countries can be singled out. The countries selected provide the basis around which the ensuing analysis of labor and capital costs evolve. Given the lack of reliable, in-depth and comparable data from a wide range of countries and industries, certain data requirements will be met with an eclectic approach.

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<sup>1</sup> Such an approach, however, does not exclude infant industry arguments under certain conditions.

Box 1

A View from the Past of Yesterday, Today and the Future

Two books published just nine years apart (in the 60's and 70's) dealt with the state of the world economy (or parts thereof) as well (directly or indirectly) with its future<sup>1</sup>. Issues were raised therein and conclusions drawn, which - if correct - would imply wide-sweeping changes in trade and development trends. It is thus worthwhile to briefly note (with all due respect to the authors) what was said and how the books arrived at the results.

The first of the books, Asian Drama, paints a broad, multifaceted picture of the socioeconomic state of the developing South and Southeast Asian region. Aside from going into depth on manifold aspects in the entire spectrum of countries, the conclusions drawn from the extensive research are presented in the middle of the study along 'with a set of conditions that excludes for the most part ideologies' (p. 676). After determining that the region is poorly endowed with natural resources, except for coal and iron ore in India and oil only in Indonesia the consequences thereof for the region are explained: "The fact that some countries have succeeded in creating a flourishing industry, mainly by importing raw materials - notably Switzerland, Denmark and Japan - does not necessarily mean that South Asia could readily do the same" (p. 677). Likewise the agricultural sector is seen as having such low productivity/yields that foreign deficits in food supplies will continue to expand. Furthermore, while pointing out how important export expansion in the past was for the economic growth of present-day, highly developed countries, it is stated that the epoch of rapidly growing export markets has ended. Although exceptions were made for Malaya, if rubber could compete with artificial rubber and Indonesia, if internal problems could be efficiently solved, the demand for exports from the region - having shrunk relative to total world trade in recent decades - was considered not to be bright. On top of this, low income-demand elasticities and discriminatory tariffs were seen as hampering the development of export industries and for those few export industries which existed and produced cheap, low quality manufactures the world market was not considered to be expanding. Since underdevelopment was characterized by rigidity and lack of adaptability and since the entrenched industries in the highly developed countries "enjoyed" markedly superior conditions, the possibility of building up a manufacturing industry to successfully compete on world markets seemed to be severely limited. In concluding it is noted that being a late-comer in the nineteenth century was not a disadvantage (and quite often an advantage), in the twentieth century "it is a serious disadvantage".

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<sup>1</sup> The two books are: Myrdal, Asian Drama (1968) and Leontief, The Future of the World Economy (1977).

The second of the two books, The Future of the World Economy, was published during a period still very much influenced by the first wave of energy price increases. One major purpose of the study was to deal with the impact of prospective economic issues (which also included environmental aspects) on the economic outcome of the second UN Development Decade. As opposed to the Asian Drama's verbal forecasting, The Future of the World Economy was an attempt to depict and forecast the world economy by applying mathematical methods integrated into a global model. The approach was based on input-output analysis and the model disaggregated into 15 regions, each with 45 sectors of economic activities. Each of the regions is treated separately, but linked through a complex system of 40 classes of goods and services, capital flows, aid transfers and interest payments. After running through a scenario based on extrapolation of international development strategies targets to the year 2000 and determining that per capita income differentials between developed and developing regions would remain at 12 to 1, the study runs through various scenarios in which the income gap would be reduced by almost half at the end of the century. Distilling out of the study and the various scenarios the essence for industrialization policies, it can be stated that the engine of growth in developing countries was expected to be heavy industries, whereby capital requirements are seen as being met from domestic sources.

Without delving into the technical details and various assumptions of the model, it must be underlined that - as far as trade and development issues are concerned - the model, despite every attempt to account for economic realities - can hardly be used to portray international trade relations, since, e.g. foreign trade - determined by relative competitive positions - is not incorporated into the model as a driving force behind changes in the international division of labor. Needless to say the basic assumptions upon which the I-O model rests, leave little room for taking into consideration policy-induced deviations from technically determined input-output coefficients, and thus ignore an aspect responsible for massive misallocations in the world economy.

To conclude: In both cases the role of prices or rather incentives was not allowed to be fulfilled. Whereas in Asian Drama they were either overlooked (as concerns natural resources), declared not to be relevant anymore (as concerns importance of foreign trade today) or not belonging to human capital potential of Asian countries (as concerns the inability to react), in The Future of the World Economy the model was simply not equipped to capture such aspects.

## Box 2

### Trade, Prices, the Structure of Production and Distortions

In today's seemingly disorderly world those in favour of liberalizing trade would seem to have the cards stacked against them. After all, what better suggestion could be made for countries still suffering from various shocks in recent years than to attempt to ensure that international trade expands in more predictable paths? While the call for predictability is understandable, there is nonetheless little proof that it will assist countries with inherent economic problems like low overall growth rates or lack of success in export markets. As a matter of fact any number of centrally planned economies have shifted over to more flexible foreign trade systems in an attempt to increase the flexibility of their economies and subject protected sectors to competitive impulses from the outside. If freer trade can actually be viewed as a measure to enhance economic development, then the prime question about the conditions under which this should take place must be asked.

Should the basic principle be accepted that an international division of labour exists, from which each country can benefit the most if its exports are in line with its comparative advantages, then obviously those policies which ensure that the comparative advantages are efficiently tapped should be followed. In more market-oriented economies this means that prices are allowed to reflect relative scarcities and in doing so act to allocate resources into those economic activities which yield the higher returns. Given flexible entrepreneurs and an efficiently functioning interfacing between the domestic and foreign sectors, production will tend to specialize in those industries where comparative advantages exist or rather develop. In this context the degree to which comparative advantages are tapped depends upon the degree to which labour and capital are combined in a production process in line with their relative abundance in the economy. Thus, if policies are enacted which cause the price of one factor to increase relative to the other, then production will be structured using more of the relatively cheaper factor, thus shifting it away from the most efficient methods. Such reactions are assumed to hold true in this paper, since it deals primarily with market or at least mixed economies, where prices usually fulfill their intended functions.

Measures which influence the supply of or demand for factors of production (as denoted above) are considered to distort production away from efficient levels and are hence labelled "distortions". A distortion is meant to be a neutral term in the sense that it embodies no prejudgement on the specific intent of a given policy instituted, it merely notes that a policy influences relative prices and thus induces shifts in the demand for and/or supply of a factor of production. For instance:



- Policies which increase the profitability of the manufacturing sector vis-à-vis agriculture will cause labour and capital to migrate into the former.
- Interest rate subsidies will generally decrease the cost of capital and thus shift demand to more capital intensive methods of production.
- Legislating additional non-wage benefits for employees increases the cost of labour relative to capital and thus promotes more capital-intensive methods of production.
- Unemployment insurance can cause individuals to conclude that being unemployed with not substantially less take-home pay is actually an acceptable substitute for work, thus allocating labour into socially unproductive activities and increasing the financial burden on the other members of society since they must pay for these unproductive activities.

While in most cases the distortions in labour markets have been instituted for social policy reasons, and only rarely positively influence the demand for labour, those explicitly introduced in capital markets are usually connected with economic development goals and for the most part positively influence the demand for capital. To conclude, it would not seem to be incorrect to state that at the bottom line capital benefits more.

## 2. Proving a Point - A Digression on Distortions, Relative Prices and Economic Development

The impact of the ubiquitous distortions in factor markets are the daily bread of mainstream economists dealing with real world problems. It is thus natural to assume that - to the extent that they are perceived - their impact is quantified and welfare losses from their existence or rather gains from their removal are aptly portrayed. If it can be expected that the removal of intra-national distortions results in lower welfare gains than those also affecting the international allocation of resources, then the area of international trade<sup>1</sup> should prove to be rich in evidence showing how fewer distortions lead to greater efficiency and then to better economic performances. It is apparent, however, "that most of the empirical work has not provided an adequate test of the [HOSS] model" (Krueger, 1977)<sup>2</sup>.

There is, however, a pedestrian approach to the subject which engenders at least circumstantial evidence on the interconnection between distortions and economic performance (Agarwala, 1983). In his analysis of price distortions Agarwala reviews the evidence from 31 countries in the 1970's with respect to protection (of manufacturing), agricultural pricing, exchange rate policies, cost of credit, cost of labor, pricing of infrastructural services and inflation. For each of these areas the countries are classified as having low, medium or high distortion levels. Without passing judgement on whether the individual countries are correctly classified, the overview in Table I.1 provides sufficiently convincing results that countries with lower than average

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<sup>1</sup> Mainstream theoretical considerations are meant in the Heckscher-Ohlin-Samuelson-Stolper (HOSS) sense.

<sup>2</sup> For a recent overview of theoretical considerations based on standard assumptions and on deviations therefrom as well as of empirical evidence plus model calculations using a Bayesian formulated model based on HOSS assumptions see Leamer (1985). Beyond the overview, however, in which distortions are dealt with, no attempt is made to explain performance with the degree of distortions in factor pricing.

Table I.1 - Economic Performance<sup>a</sup> and Level of Distortions in Labor (A), Capital (B), and Exchange Rate (C) Markets for Selected Developing Countries - Evidence from the 70s

Economic Performance Indicator by Area of Distortion	Economic Performance <sup>a</sup> by Distortion Levels		
	Low	Medium	High
GDP growth rate			
A	5.9	4.7	4.5
B	4.6	6.1	4.0
C	6.1	3.6	3.2
Average of A+B+C	5.5	4.8	3.9
Domestic savings ratio			
A	20.4	17.5	12.5
B	14.5	18.1	17.1
C	18.2	14.7	16.7
Average of A+B+C	17.7	16.8	15.4
Return on industry			
A	26.5	21.3	20.2
B	29.2	26.6	18.8
C	25.4	23.8	15.5
Average of A+B+C	27.0	23.9	18.2
Growth rate of industry			
A	7.3	6.1	4.3
B	5.7	8.0	4.3
C	7.7	4.2	3.1
Average of A+B+C	6.9	6.1	3.9
Growth rate of agriculture			
A	3.4	2.5	2.7
B	2.7	3.8	2.1
C	3.7	2.3	1.3
Average of A+B+C	3.3	2.9	2.0
Growth rate of real exports			
A	6.5	2.7	-0.3
B	5.1	4.5	2.3
C	4.5	1.1	2.9
Average of A+B+C	5.4	2.8	1.6

<sup>a</sup>Economic performance indicates real growth rates in the case of GDP, industrial/agricultural output and exports; in the case of return on industry and savings ratio they are actual ratios.

Source: Excerpted and calculated from Agarwala (1983, Tables 6, 8 and 10).

distortions in labor, capital and foreign exchange markets reveal better economic performances, e.g. higher GDP growth rates and considerably higher real export growth rates. To be specific, it can be seen that - as far as distortion levels in labor markets are concerned - in the case of real exports the growth rate in countries with low levels of distortions is 6.5% versus -0.3 in high level countries. By going into a breakdown by regions and countries and ranking the data according to increases in real exports, the picture developed in Table I.1 is also substantiated.

While the pedestrian distortion-index approach produces a rough overview of probable interrelations between distortions and changes in key economic variables within a prior period, a macro-econometric growth model - structured so as to ensure full concordance with theoretical (not data fitting) considerations - provides a powerful tool to generate bottom-line estimates for specific past or future time periods. Such a model was tapped to help illustrate the impact of changes in relative prices over time<sup>1</sup>. With its dynamic structure and stock/flow interactions, it is suited for applications to open economies and questions concerning factor markets, where the medium to long-run implications of given impulses or measures are to be examined. To illustrate such an analysis, a decrease in wage pressure (e.g. as prevailed in 1983-84 in the Federal Republic of Germany) which leads to a shift of relative prices in favor of labor was simu-

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<sup>1</sup> The model itself contains four income sectors: household, government, firm and overseas. A flow of funds framework enforces all aggregate budget restrictions. On the real side, the model follows recent literature in incorporating imported raw materials as a factor of production. Factor demand is in turn modelled in a neo-classical manner: as a function of relative factor prices. Inventory disequilibrium also exercises a role. Prices, wages and exchange rates are endogenous. The latter are determined through a portfolio balance model. Final imports and exports are determined by relative prices including the nominal exchange rate. The balance of payments identity governs the evolution of net foreign holdings. Government policy is modelled by reaction functions. The model has been solved for its steady state growth rates and levels and incorporates general non-Walrasian dynamics. It has been estimated using the continuous time methodology by FIML. Simulation has confirmed the steady state properties. The model - called MCMIA: A Small Macro-Econometric Growth Model for the Federal Republic of Germany - is fully described and documented in Kirkpatrick (1986).

lated. The long-term (steady state) solution yields (inter alia) higher employment and an increase in net exports. The latter is heavily influenced by lower raw material and intermediate imports which are due to strong factor substitutions. This has a balance of payments and exchange rate effect which feeds back through the wage, price, exchange rate and output dynamics.

In the following, after reviewing trade performance, evidence on the relevance of labor and capital costs for export performance will be presented separately. The analysis ends with some brief concluding remarks.

## II. Trade Performance : An Overview

### 1. Introduction

As mentioned above, the purpose of this paper on labor and capital costs is to yield evidence on interconnections between influences on factor market prices (i.e. distortions) and relative export performance (see e.g. the difference between high and low levels of labor market distortions vis-à-vis real export growth rates in Table I.1). The approach used to achieve this begins not with an attempt to locate distortions in factor markets, but rather with an investigation of the performance of individual countries in world manufacturing trade. From such a country-by-country comparison the "winners" and the "losers" are easily selected<sup>1</sup>. By delineating a group of successful and unsuccessful countries out of world trade it should then be possible to determine whether the more successful one were those with less distorted factor markets.

### 2. World Trade: Trends and Structure

The average annual rate of growth of non-energy exports to the world for the period 1965-1983 amounted to about 12.5%<sup>2</sup>. Broken down into the time frame used in this study (i.e. 1965-73 and 1973-83) the "pre-oil-shock" period (15.2%) was considerably more boyant than the second period (10.7%). A closer examination of underlying trends - by country and product groups - reveals the following:

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<sup>1</sup> The selection process was primarily based on relative export performance between the years 1965 and 1983, be it of positive or negative nature. Total value of exports, export structure, regional location and availability of other statistics were secondary criteria.

<sup>2</sup> Unless otherwise noted all growth rates in this section on world trade are per annum figures.

- Whereas exports of industrialized countries (ICs) to the world expanded about 25% faster than those from developing countries (DCs) in the initial period (15.6% vs. 12.1%), the positions were reversed in 1973-1983 (10.5% and 12.4%). These trends (see Table II.1) reflect not only the stronger demand of ICs for products from DCs, even the DCs increased their demand for their own products.
- On a rough commodity group basis the stronger increase in IC relative to DC exports in the 1965-73 period is shown to be attributable to raw materials trends. In other words growth rates of manufactured exports from DCs are consistently higher than those from ICs, be it to DCs themselves or to ICs. However, as opposed to the general trends above, the growth rate of manufactured exports from DCs to ICs in the final ten year period was not significantly different (15.6%) than that from DCs to DCs (16.9%).
- A closer look at the commodity groups yields initial evidence on the sources of those products from DCs expanding relatively faster. The extremely rapid rate of growth in the late sixties and early seventies in machinery and transportation goods (SITC 7) can be accounted for almost entirely by increases in telecommunications equipment and electric machines from only five countries (Korea, Mexico, Taiwan, Hong Kong and Singapore). In the case of clothing the above four Asian countries plus the Peoples Republic of China are the big suppliers. These two items alone accounted for about 40% of DC exports of manufactures to ICs (1973). In the ensuing period the same set of countries expanded by Malaysia, Turkey and Brazil had broadened their product array to cover electric and non-electrical power machinery, domestic appliances, office equipment, cars and ships. Machinery and transportation products together with clothing made up over half of manufactured exports from DCs in 1983 (see Table II.1) and almost one third of total exports<sup>1</sup>.

<sup>1</sup> The information on the increases presented in this paragraph was extended and complemented by those countries which did not do so well in order to produce the sample set described in the following paragraphs.

Table II.1 - Growth and Structure of Non-energy Exports<sup>a</sup> from Industrialized (IC) and Developing (DC) Countries<sup>b</sup>: 1965-1983

	Industrialized (IC) to				Developing (DC) to							
	IC		NOPEC		IC		NOPEC					
	Growth Rates <sup>c</sup>											
	65-73	73-83	65-73	73-83	65-73	73-83	65-73	73-83				
Total non-energy	15.9	9.6	13.1	11.6	12.2	11.5	10.6	14.6				
Raw materials	13.1	7.2	12.8	10.4	8.3	7.2	7.7	11.0				
Food	14.2	7.6	12.8	10.3	9.4	7.6	5.5	12.7				
Agric., raw	11.6	6.1	13.0	12.2	7.6	6.3	9.1	9.2				
Minerals	11.6	6.8	15.5	14.1	7.1	10.1	8.2	19.5				
Non-ferrous metals	12.9	8.9	11.3	8.2	5.6	6.1	19.3	8.4				
Manufactures	17.0	10.2	13.3	11.8	26.9	15.6	16.0	16.9				
Chemicals	17.2	12.6	12.8	11.8	16.7	15.6	17.2	17.7				
Machinery, etc.	18.3	10.7	14.1	12.2	48.7	26.1	20.6	21.5				
Oth. ind. goods	15.7	8.8	12.2	11.1	25.3	12.6	14.1	14.5				
Iron & steel	13.7	5.5	16.2	8.7	30.8	19.2	13.0	18.3				
Textiles	13.7	5.9	8.2	7.4	16.7	8.7	12.6	12.2				
Clothing	18.0	9.3	8.5	11.1	33.0	16.5	15.2	15.0				
	Commodity Structure <sup>d</sup>											
	65	73	83	65	73	83	65	73	83	65	73	83
Total non-energy	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Raw materials	31.0	25.5	20.5	21.0	20.5	18.4	87.1	65.6	42.5	68.6	55.2	37.9
Food	15.8	14.1	11.7	15.1	14.8	13.0	45.9	37.5	25.0	41.1	28.1	22.8
Agric., raw	7.8	5.8	3.9	3.1	3.0	3.0	18.9	13.6	6.7	22.4	20.0	9.1
Minerals	3.4	2.5	2.0	.7	.8	1.0	10.4	7.2	6.0	2.4	2.0	2.7
Non-ferrous metals	3.9	3.2	3.0	2.1	1.8	1.3	11.9	7.4	4.8	2.7	4.9	3.3
Manufactures	67.9	73.5	78.0	77.2	78.1	79.5	12.5	33.5	55.2	30.2	43.9	58.7
Chemicals	7.8	8.6	11.3	11.9	11.7	11.8	1.4	2.0	2.8	4.3	6.8	8.4
Machinery, etc.	29.8	35.1	38.9	38.8	41.6	43.7	.7	6.3	18.7	5.7	11.4	19.9
Oth. ind. goods	30.2	29.9	27.8	26.5	24.9	24.1	10.4	25.2	33.7	20.2	25.8	30.3
Iron & steel	6.2	5.5	3.7	6.2	7.8	5.9	.3	1.1	2.2	2.0	2.4	3.8
Textiles	5.1	4.4	3.1	5.5	4.1	2.8	3.7	5.1	3.9	8.7	10.0	8.4
Clothing	1.8	2.1	2.0	1.1	.8	.7	1.9	7.3	10.5	1.6	2.2	2.5
	Country Grouping <sup>e</sup>											
	65	73	83	65	73	83	65	73	83	65	73	83
Total non-energy	74.3	75.9	70.0	16.7	14.1	15.6	70.5	70.6	65.6	18.5	16.6	20.1
Raw materials	80.7	79.1	72.4	12.3	11.8	14.5	73.8	72.1	65.8	15.3	14.3	18.0
Food	75.2	74.8	67.9	16.2	14.6	16.9	71.1	72.6	63.5	16.7	12.9	17.7
Agric., raw	85.9	83.5	77.1	7.6	8.2	13.0	65.1	64.3	60.8	20.3	22.4	25.6
Minerals	92.8	88.4	82.2	4.3	5.3	9.6	89.6	84.4	77.0	5.6	5.7	10.6
Non-ferrous metals	85.8	85.5	80.8	10.3	9.2	8.2	92.2	75.5	75.6	5.5	12.0	15.7
Manufactures	72.4	75.4	69.7	18.5	14.8	15.9	54.1	68.0	65.6	34.4	21.0	21.4
Chemicals	67.4	71.7	70.4	23.1	18.1	16.4	50.1	48.4	44.6	39.5	39.3	40.6
Machinery, etc.	69.8	73.6	68.0	20.4	16.1	17.0	26.1	63.1	68.1	59.5	26.9	22.3
Oth. ind. goods	76.9	78.8	72.0	15.1	12.1	13.9	58.7	71.6	67.0	30.0	17.3	18.5
Iron & steel	73.1	66.9	57.8	16.4	17.7	20.5	30.1	54.5	49.6	50.5	28.3	25.9
Textiles	74.0	76.3	71.3	17.8	13.3	14.4	51.4	56.5	45.6	31.7	25.9	30.5
Clothing	80.1	88.8	85.0	10.5	5.9	6.7	78.5	87.6	86.0	17.3	6.2	6.3

<sup>a</sup>Excludes SITC 3.

<sup>b</sup>Includes both OPEC and Non-OPEC (NOPEC) developing countries. Deviating from the usual definition, data from the Peoples Republic of China as well as China, Taiwan are included.

<sup>c</sup>Average annual growth rates for the specific period (%).

<sup>d</sup>Commodity structure of the exports from IC or DC to IC or NOPEC in %; column sum of commodities (i.e. raw materials + manufactures) does not add to 100% due to missing items.

<sup>e</sup>Direction of IC or DC exports of a given commodity for a given year in %; row does not add to 100% since OPEC and Centrally Planned Economies not included.

Source: Based on UNCTAD calculations.



The impact of these trends on the product and country structure of exports from the DCs, as well as the corresponding IC trends, is presented also in Table II.1. The shift away from raw material to manufactured goods is - particularly as concerns DC-IC trade - quite impressive.

The analysis of country performance in world trade led to the selection of the industrializing countries included in Table II.2. For purposes of comparison four industrialized countries were included as well. To understand this table, as well as others patterned after it in the text, the reader should be particularly aware of the following points:

- The ranking of the industrializing countries is determined by the value of manufacturing exports in the year 1983. To portray the crucial performance aspect the ranking in 1965 (and specifically in Table II.2 also in 1973) is included in ( ) directly following the country name.
- Manufacturing exports have been calculated using a concordance between the standard international trade classification (SITC) and the international standard industrial classification (ISIC)<sup>1</sup>. They have been defined to encompass all manufacturing industries (including food processing) except petroleum refining (353) and products therefrom (354). A listing of the industries and their numbers is included in Table AII.2 in Appendix II.

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<sup>1</sup> The concordance was constructed by the UN Statistical office and has been used in the past in those cases where foreign trade and domestic trends were to be interpreted on a common basis. It should be noted that whenever a concordance is used - unless there is a definite 1-to-1 relationship - a certain amount of imprecision is introduced. In this case the imprecision is due to the fact that at the 3-digit SITC level some product groups must be split into two or more industries. The imprecision introduced thereby is accepted as a trade-off for the possibility of being able to compare rebased foreign trade statistics with industrial statistics in order to draw conclusions about the factor intensity of foreign trade.

- The ranking of exports by value in 1983 is distorted by some countries including re-exports in their statistics (i.e. Hong Kong and Singapore) and by others not including exports produced or processed in customs enclaves (i.e. Mexico). Whereas the former would not necessarily influence the evaluation of performance if re-exports shares remain constant, the latter means that at least the 1983 figures underestimate the actual value of exports<sup>1</sup>.
- The method of ranking chosen reflects primarily the demands of this analysis, it is not contended that all relevant questions relating to exports are best represented by this approach. For instance, those countries which rigorously applied import substitution policies aiming thereby at higher domestic content in exports and exhibiting relatively poor performance (e.g. India) are being compared with countries which went through no import substitution processes (e.g. Hong Kong) but rapidly expanded exports without regard to the origin of inputs. Nevertheless, without placing a value judgement on either of these performances, the approach taken here aims precisely at specifying the economic ramifications opportunity costs (e.g. in terms of economic growth or changes in foreign exchange reserves) of applying a given policy mix - the degree to which other factors are deemed to be more important for the welfare of a country is a decision to be made by a given country, presumable after weighting all alternatives.
- All export data for the Peoples Republic of China have been calculated via inversions, i.e. by adding up the imports of partner countries<sup>2</sup>. They must therefore be viewed only as an

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<sup>1</sup> The amount of underestimation is tempered by the simple fact that the domestic content (i.e. value-added) in these exports is relatively small - less than 25 per cent can be assumed to be added in such processes.

<sup>2</sup> While inversions do embody difficulties it could be determined (by comparing inversions of data for countries from which correct data already existed) that the problems were not of a nature to dismiss the information as useless. To the extent that a reclassification of China's exports was undertaken by the importing countries, this would more than likely occur within 3-digit SITC categories than between them.

Table II.2 - Non-oil Manufactured Exports<sup>a</sup> of Selected Industrializing and Industrialized Countries, 1965-1983

Countries <sup>b</sup>	Rank		Value (Mill.US\$)			Share of Manufactures in Total Exports			Annual Rate of Change (%) <sup>c</sup>	
	in 1965	in 1973	1965	1973	1983	1965	1973	1983	1965-73	1973-83
Industrializing Countries										
1. Taiwan	(12)	(2)	307.8	3788.0	22663.0	68.4	86.4	90.1	36.9	19.6
2. Korea, R.	(19)	(5)	128.4	2704.0	21556.0	73.4	84.1	88.2	46.4	23.1
3. Brazil	(3)	(1)	977.1	3915.4	15286.6	61.2	63.2	69.8	19.0	14.6
4. Singapore	(6)	(6)	565.3	2310.0	13981.8	58.1	64.0	64.0	19.2	19.7
5. Hong Kong	(4)	(4)	816.8	3603.6	13595.7	92.9	95.2	95.3	20.4	14.2
6. China, P.R.	(2)	(2)	1174.5	3013.9	12378.7	68.8	68.2	62.8	12.5	15.2
7. Mexico	(7)	(8)	537.7	1934.3	8867.9	51.6	73.5	33.9	17.4	16.5
8. Malaysia	(5)	(10)	693.0	1555.2	7037.4	57.5	51.2	49.3	10.6	16.3
9. India	(1)	(7)	1196.8	2095.6	4738.2	71.2	70.1	59.6	7.3	8.5
10. Thailand	(14)	(12)	287.1	789.6	3971.0	47.3	51.7	63.3	13.5	17.5
11. Turkey	(16)	(13)	243.4	753.4	3773.2	51.1	57.2	66.5	15.2	17.5
12. Indonesia	(15)	(15)	263.7	672.1	3638.4	36.5	20.9	17.2	12.4	18.4
13. Argentina	(8)	(9)	517.2	1582.9	3350.0	34.6	48.5	42.8	15.0	7.8
14. Philippines	(9)	(11)	369.0	877.0	2612.8	48.2	48.8	52.6	11.4	11.5
15. Pakistan	(11)	(16)	324.6	659.3	2224.9	61.5	70.1	72.7	9.3	12.9
16. Colombia	(13)	(14)	291.2	749.9	1891.2	54.0	63.8	61.4	12.6	9.7
17. Morocco	(17)	(18)	193.2	457.3	1090.4	44.9	52.2	52.9	11.4	9.1
18. Ivory Coast	(18)	(19)	131.7	364.0	1066.4	47.5	42.3	51.6	13.6	11.4
19. Tunisia	(21)	(20)	74.1	197.3	860.4	61.9	51.2	46.0	13.0	15.9
20. Egypt	(10)	(17)	325.4	618.4	735.2	53.9	55.4	18.0	8.4	1.8
21. Kenya	(20)	(21)	76.0	195.6	507.2	57.7	56.0	53.5	12.5	10.0
Industrialized Countries										
Germany, F.R.			15870.1	59933.8	144555.2	88.7	88.9	86.7	18.1	9.2
Japan			7553.3	33619.1	137351.5	89.4	91.0	93.6	20.5	15.1
United Kingdom			11458.7	25726.2	63029.8	86.6	84.3	68.7	10.6	9.4
United States			20226.8	50482.5	148115.3	74.9	71.9	76.1	12.1	11.4

<sup>a</sup> Three digit international trade classification (SITC) export data were transformed via a concordance into 3 digit manufacturing industry (ISIC) data. Non-oil manufactured exports were hence defined as ISIC 311-390 excluding 353 (Petroleum) and 354 (Coal etc.). - <sup>b</sup> The ranking of the industrializing countries is determined by the value of exports in 1983. The numbers in ( ) represent the ranks in 1965 and 1973. - <sup>c</sup> Without having specific knowledge about the prices of manufactured exports, it was decided to leave the growth rates in nominal terms rather than deflating with a common world price index for manufactures. Deflating with a common price index would not influence relative size of rates of change.

Source: Own calculations based on data from UNCTAD.

estimate, but nonetheless one which should adequately portray trends in the period under consideration. Export data from 1983 for India and Malaysia are based on unofficial UN estimates at 3-digit SITC levels<sup>1</sup>.

A brief examination of Table II.2 (i.e. of the change in ranking of the countries) provides some interesting insights into the relative export performance of the 21 countries. This information is excerpted below, whereby the numbers in the ( ) represent the change in rank in the periods 1965-1973 and 1973-1983 respectively.

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<u>Winners</u>	<u>Mid-field<sup>a</sup></u>	<u>Losers</u>
Korea (+14,+3)	Brazil (-2,+2)	Egypt (-7,-3)
Taiwan (+10,+1)	Morocco (-1,+1)	India (-6,-2)
Turkey (+3,+2)	Mexico (-1,+1)	Argentina (-1,-4)
Thailand (+2,+2)	Ivory Coast (-1,+1)	Philippines (-2,-3)
Indonesia (0,+3)	Hong Kong (+1,-2)	Pakistan (-5,+1)
Singapore (0,+2)	Kenya (-1,0)	China (-2,-2)
Tunisia (+1,+1)		Colombia (-1,-2)
		Malaysia (-5,+2)

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<sup>a</sup> ± 1 over entire period 1965-1983.

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It is worthwhile noting that those countries which did exceptionally well or exceptionally poor (i.e. the first four in each group) exhibited an increase or a decrease in both periods. In other words they were consistent (but not constant) in their per-

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<sup>1</sup> The estimates in the past have proved to be relatively reliable.

formance. While Korea and Taiwan belong to the often-quoted set of top performers, Turkey and Thailand do not, but have slowly and continually moved up the ranks into positions in the middle of the group. Should the growth rate differential between these two countries and India remain the same, they will have nudged out India in the rankings in the course of 1986.

Among the losers also appears Malaysia, a country often placed otherwise among the winners, where relatively poor performance in the initial period was only somewhat compensated for in the years following 1973. The pattern revealed for Malaysia reflects quite well the course of economic policies, as the slower growth rates in the latter part of the 1960s induced policy-makers to shift strategies to a less inward-looking import substituting stance. The change in the framework of relative prices not only induced new investments from within, the flow of foreign direct investments also increased noticeably, particularly into labor-intensive industries manufacturing non-traditional products<sup>1</sup>.

In addition to such background information which can be fitted into the patterns revealed in Table II.2, additional insights into the performance of the individual countries can be gathered from indicators of export diversification/concentration. Such an index - in this case the coefficient of variation - has been constructed for all countries in the sample set, based upon the shares of the 28 industries into which exports have been categorized<sup>2</sup>.

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<sup>1</sup> In Chapter III further mention will be made of the specific ramifications of these investments in connection with export processing zones.

<sup>2</sup> The coefficient of variation is the quotient of the standard deviation and mean. For the calculations carried out here the number of observations entering into the formula (i.e. the denominator of the mean) is 28. Thus a country which has all its exports concentrated into one category would reveal the highest degree of concentration (or lowest degree of diversification). If each of the 28 industries had the same share, then the diversification (concentration) would be the highest (lowest). The smaller the value of the coefficient of variation, the higher the diversification.

While economic theory stipulates that a country profits the most when it specializes in its comparative advantage, a complete specialization in one area can engender severe adjustment problems if export receipts in the area of concentration suffer a major fall. Generally speaking, however, industrial diversification occurs as an economy develops (this can be seen in Table II.3 knowing what relative income levels are) and in connection with a spreading out of industries in line with the availability of intermediary inputs, qualification levels of labor, resource base and financial assets. Thus, adjustment problems which may occur due to external shocks in one or more sectors can often be absorbed by other sectors, albeit with a time lag. Whatever the case, the crucial factor in the adjustment process is the ability to react flexibly. This can mean, for instance, that prices in factor markets are not permanently fixed in real terms. In the case of countries like Mexico, Malaysia, Indonesia and Egypt, which draw a sizeable portion of export receipts from energy resources, are subjected to the danger of becoming inflexible to the extent that they depend on one item without ensuring that other areas of production (in line with future comparative advantages) are allowed to develop. The difficulties embodied therein are simply that such alternative exports are often promoted via policies affecting the factor markets directly rather than the product markets. Hence the factor intensity of production differs considerably from given comparative advantages and the flexibility is not given because of the capital intensity.

The above mentioned trends provide the stage upon which the following more detailed analysis of performance in world trade in connection with factor market policies is enacted.

Table II.3 - Concentration/Diversification<sup>a</sup> of Non-oil Manufactured Exports from Selected Industrializing and Industrialized Countries to the World and to Industrialized Countries: 1965-1983

Countries <sup>b</sup>	Rank		World		% Change 65-83	Industrialized Countries			
	in 1965	1965	1973	1983		1965	1973	1983	% Change 65-83
Industrializing Countries									
1. Taiwan	(12)	172	106	90	-47.1	214	103	93	-56.5
2. Korea, R.	(19)	144	118	104	-27.8	145	115	97	-33.1
3. Brazil	(3)	246	204	126	-48.8	270	216	129	-52.2
4. Singapore	(6)	113	101	108	- 4.4	183	118	135	-26.2
5. Hong Kong	(4)	134	128	120	-10.4	142	129	124	-12.7
6. China, P.R.	(2)	172	164	130	-24.4	181	211	134	-26.0
7. Mexico	(7)	161	112	97	-39.8	174	121	102	-41.4
8. Malaysia	(5)	186	163	134	-28.0	231	177	134	-42.0
9. India	(1)	235	172	115	-51.1	249	192	127	-49.0
10. Thailand	(14)	253	178	170	-32.8	177	153	151	-14.7
11. Turkey	(16)	203	194	128	-36.9	199	188	140	-29.6
12. Indonesia	(15)	186	177	137	-26.3	191	198	162	-15.2
13. Argentina	(8)	308	209	219	-28.9	337	284	214	-36.5
14. Philippines	(9)	266	225	170	-36.1	269	235	171	-36.4
15. Pakistan	(11)	381	259	270	-29.1	383	267	236	-38.4
16. Colombia	(13)	311	225	246	-20.9	332	260	279	-16.0
17. Morocco	(17)	218	211	134	-38.5	222	229	146	-34.2
18. Ivory Coast	(18)	303	287	294	- 3.0	322	322	332	- 3.1
19. Tunisia	(21)	245	220	112	-54.3	305	232	116	-62.0
20. Egypt	(10)	360	295	264	-26.7	331	374	251	-24.2
21. Kenya	(20)	233	236	259	11.2	263	301	335	27.4
Industrialized Countries									
Germany, F.R.		96	94	90	-6.3	97	93	88	-9.3
Japan		116	116	118	1.7	113	113	133	17.7
United Kingdom		86	85	86	0.0	85	84	86	1.2
United States		91	98	110	20.9	90	98	115	27.8

<sup>a</sup>Coefficient of variation was calculated for each year for every country based on shares of the 28 three digit ISIC industries from 311-390 excluding 353 and 354 in sum of the exports. The larger (smaller) the coefficient, the greater the concentration (diversification) of exports. See text and corresponding footnote for further explanations. - <sup>b</sup>The ranking of the industrializing countries is determined by value of manufactured exports in 1983.

Source: Own calculations based on data from UNCTAD.

### III. Labor Costs

#### 1. Introduction

Shifts in trade flows are a reflection of evolving changes in competitive positions, which have led to a relocation of production activities from one country to another. Two main reasons behind such shifts can be identified. First there is a natural shifting in the comparative advantages in line with development level-induced changes in factor prices, whereby the faster economies grow the greater such changes will be. This reason is not of direct interest in the context of this analysis. Rather the second reason is the focal point: namely the degree to which changes can be attributed to distortions in factor markets causing thereby the price of labor to deviate from a level dictated by labor's relative scarcity in a given economy. As was outlined above, distortions represent any measure instituted which affects the relative prices in factor markets and thus the structure of production.

#### 2. Remuneration and Policies Affecting Labor Markets

In the case of labor, the above basically means any measure which impacts upon the price of labor or rather the remuneration an employee receives. That is to say, in market economies the remuneration of labor is basically supposed to represent the pecuniary counterpart of labor services offered. Although technically this still holds true, the remuneration received directly by the person performing the services has become an increasingly smaller share of total remuneration directly and indirectly attributable to the employment of an individual. Thus in discussing the implications of changes in relative prices between labor and capital it is quite essential to use terms which cover the entire spectrum of costs generated. Labor costs therefore include as a main component wages, but also non-wage costs dictated by government regulations, agreements with unions, company policies and societal traditions. The non-wage costs cover such items (e.g. social security payments) which employees can see is being paid for them



and from which they assume they will receive benefits at some future point in time. Included as well are those expenditures required to allow a person to carry out a job he or she is to be paid for, these being basically such items as required by health and safety regulations enacted by the State but may also be the result of bargaining agreements with unions<sup>1</sup>.

Generally speaking the majority of the influences affecting the cost of labor have been implemented in the course of creating the modern Welfare State. They have caused the level and the structure of real wages to inadequately reflect productivity differentials between labor force cohorts and hence have made it very expensive for firms to hire labor<sup>2</sup>. In other cases they have decreased interfirm as well as interregional mobility or - in connection with other social/fiscal measures enacted by the state - have made leisure more attractive than working<sup>3</sup>.

For the sake of argumentation the various measures impacting directly upon labor markets by affecting the demand for and/or supply of labor can be structured in accordance with the intended thrust of the measures:

A. Policies directly influencing pay levels

1. legal minimum wages
2. contract minimum wages and lump-sum pay increases achieved via collective bargaining

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<sup>1</sup> These might be as minimal as safety glasses provided by employers, but as extensive as elaborate workplace pollution control devices which protect against poisonous gases, loud noises and bright lights.

<sup>2</sup> Minimum wages, for instance, establish wage floors below which employers cannot legally pay. Thus if the value of the output (i.e. productivity) of some persons is lower than what is stipulated by minimum wages, then these persons will not be employed.

<sup>3</sup> Such could be the case if unemployment insurance levels were close to net earnings. If incentives did not exist to ensure that the unemployed actively sought new jobs, then paid leisure could well result.

- B. Measures directed toward job rights
  - 1. employment security
  - 2. antidiscrimination
- C. Actions aimed at job environment
  - 1. work rules
  - 2. job/occupational training
- D. Legislation embodying social aspects
  - 1. maternity leave
  - 2. paid sick leave
  - 3. unemployment compensation
- E. Policies affecting the economic environment
  - 1. collective bargaining framework
  - 2. bureaucratic and legal ramifications

While the extent to which all these measures exist is far greater in industrialized than in industrializing countries, it is far from true that industrializing are only marginally affected. As is evident in Box 3 (Labor Codes in Action - the Case of Panama) industrializing countries have instituted measures which even extend beyond what exists in some high income countries, and in doing so have severely hampered their own development paths. In other words, Panama, by severely regulating labor markets in general, has created inflexibilities which restricted private investment, decreased growth rates of GDP and led to an actual decline in real exports (see Table III.1). Panama thus represents a case at one end of the spectrum, where distortions have reached into almost every aspect of the labor market, not only shifting demand to more capital intensive methods of production, but constraining production itself. Granted, the evidence is only circumstantial, but in the area of offshore banking, where labor code restrictions were not as constraining, employment did expand rapidly as the number of foreign banks taking advantage of the offshore facilities increased<sup>1</sup>.

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<sup>1</sup> They now number almost 150 and their loans account for about 2 % of the offshore loans in the entire world.

Box 3

Labor Codes in Action - the Case of Panama

Many Latin American countries have attempted to organize labor markets in a manner intended to ensure full employment at socially acceptable conditions by installing labor codes. Panama is one of these countries, having established its present code in 1972 together with a new constitution. In the latter it is laid down that the State is obligated to establish the political and economic policies necessary to promote full employment and to ensure that each employed person can earn a decent existence. The Labor Code (LC) was perceived as the basic *modus operandi* for the labor market. Therewithin the relationship between capital and labor is governed, providing "special attention of the workers by the State, with state interventions to make remunerated employment available to all those without work" (LC, para. 1). While until this year the LC has remained virtually intact, labor market problems have become increasingly severe and per capita economic growth has dwindled from well above to below Latin American averages (see Table III.1). Is there a connection between the decrease in the demand for labor (or in aggregate demand) and the enactment of the Labor Code (i.e. the increase in labor market distortions)? An examination of the evidence yields an answer.

Panama, literally straddling major shipping routes and located just below the rich US market would seem to be a country blessed with locational advantages which could be matched by but few other nations. If on top of these the country

- revealed political stability in a region often known for instability,
- had levels of infrastructure still being aimed at by other countries and
- exhibited educational levels considerably above countries at similar stage of development,

then it would seem to be predestined to be an economic success.

As can be seen in Table III.1, growth rates for Panama ever since 1970 have been (considerably) below those of other Latin American countries, whereas the opposite was true in the prior decade. Keeping this in mind and without being aware of any other major explanation, attention is turned to developments which could help explain why Panama did not turn its locational advantages into higher growth rates.

- In a survey of employers about factors influencing their demand for labor, hiring/firing and wage inflexibilities due to the Labor Code were stated as <sup>1</sup>implying additional costs amounting to 30% more per employee<sup>1</sup>. Independent of these re-

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<sup>1</sup> See Spinanger (1984).

Table III.1-Development Indicators<sup>a</sup> for Panama and Selected Latin American Countries: 1960-1982<sup>b</sup>

	Latin America		Panama		Costa Rica		Colombia		Mexico		Brazil	
	60-70	70-82	60-70	70-82	60-70	70-82	60-70	70-82	60-70	70-82	60-70	70-82
GDP/Capita	2.7	2.7	<u>4.7</u>	2.2	2.5	2.4	2.1	<u>3.6</u>	<u>4.2</u>	<u>3.4</u>	<u>3.2</u>	<u>5.5</u>
GDP by Sectors:												
Agriculture	3.2	3.2	<u>5.8</u>	2.0	<u>5.7</u>	2.3	<u>3.5</u>	<u>4.5</u>	<u>4.5</u>	<u>3.4</u>	.	<u>4.5</u>
Manufacturing	5.7	4.8	<u>10.5</u>	2.7	<u>10.6</u>	<u>6.0</u>	<u>5.7</u>	<u>5.2</u>	<u>10.1</u>	<u>6.8</u>	.	<u>7.8</u>
Services	-	-	<u>7.7</u>	5.3	<u>5.7</u>	<u>4.6</u>	5.7	<u>6.5</u>	<u>7.3</u>	<u>6.5</u>	.	<u>7.7</u>
Consumption												
Private	5.4	4.3	<u>6.4</u>	<u>4.6</u>	<u>6.0</u>	3.5	<u>5.5</u>	<u>5.3</u>	<u>7.0</u>	<u>5.9</u>	5.4	<u>8.0</u>
Government	4.5	6.0	<u>7.8</u>	<u>5.2</u>	<u>8.0</u>	<u>5.3</u>	<u>5.5</u>	<u>5.7</u>	<u>8.8</u>	<u>8.2</u>	3.7	<u>7.1</u>
Investment - priv.	6.2	6.0	<u>12.4</u>	1.0	<u>7.1</u>	2.9	4.5	<u>6.7</u>	<u>9.9</u>	<u>8.0</u>	6.1	<u>6.5</u>
Exports	5.5	4.3	<u>10.4</u>	-7.3	<u>9.6</u>	4.5	2.6	2.2	3.4	<u>8.6</u>	5.3	<u>8.8</u>
Imports	5.3	8.0	<u>10.5</u>	-3.4	<u>10.1</u>	0.1	2.3	<u>8.7</u>	6.4	<u>8.7</u>	5.0	<u>1.4</u>
Wages <sup>c</sup>	-	-	2.5	-0.8	-	2.4	2.6	-0.2	1.6	1.1	2.0	4.5
Exchange Rate <sup>d</sup>	-	-	2.9	5.9	-3.1	-28.3	-73.7	76.9	-6.6	13.5	-6.1	-4.3

<sup>a</sup>Annual growth rates in real terms. <sup>b</sup>The underlined figures are above Latin American averages. - <sup>c</sup>Data is only for period 65-70 and 70-80. - <sup>d</sup>Effective change in real exchange rate - see Appendix I for explanation.

Source: Own calculations based on World Bank data and national statistics.

sults an econometric analysis run on macro-data, arrived at results which were extremely similar<sup>1</sup>.

- Employees themselves estimated that if they were permitted to receive monetary rewards for higher productivity 10% more productivity would be forthcoming<sup>2</sup>.
- To the extent that private investments have been effected by firms already operating in Panama, every effort is made to take advantage of the capital incentives.
- Established foreign direct investments have been reduced or withdrawn because of the ramifications of the Code. Many potential foreign investors have declined to invest in Panama either because they were already aware of the impact of the Labor Code or soon become aware of it<sup>3</sup>.

Out of all these measures listed above impacting upon labor markets, at the crux of the problem in Panama is the employment security issue (classical as Bw in the listing of means impacting on labor markets), or rather the "stability clause" which bestows job security upon employees after being with a company more than 2 years. Since the employer's only possibility of releasing an employee is through paying the prescribed severance pay (which increases with years of service) plus a fine of 50% for unjustified firing, the stability clause effectively increases the relative price of labor. Given the increase of severance pay with each additional year of service, firms are faced with an ever increasing potential financial demand which - particularly for small, labor-intensive firms - can soon exceed capital assets.

The second most important issue (from the demand for labor side) concerned the broad aspect of unions, which encompassed not only collective bargaining issues but also special rights granted to union members allowing them to be given leave for the purpose of assuming an official union position and then return to the company after 5 years to be reemployed with seniority as if no leave had occurred. The incentive for companies to substitute capital for labor is quite obvious.

While the socially oriented regulations (i.e. D1 and D2) were not considered by employers in general to have a significant affect, it could be determined that in those companies where a high share of women were employed, the moral hazard difficulties with maternity leave were considerably higher. In some cases this led to a substitution of women in non-child bearing age for those where the risk of pregnancy was still high. Here again capital was also substituted for labor.

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<sup>1</sup> See Butelman and Videla (1985).

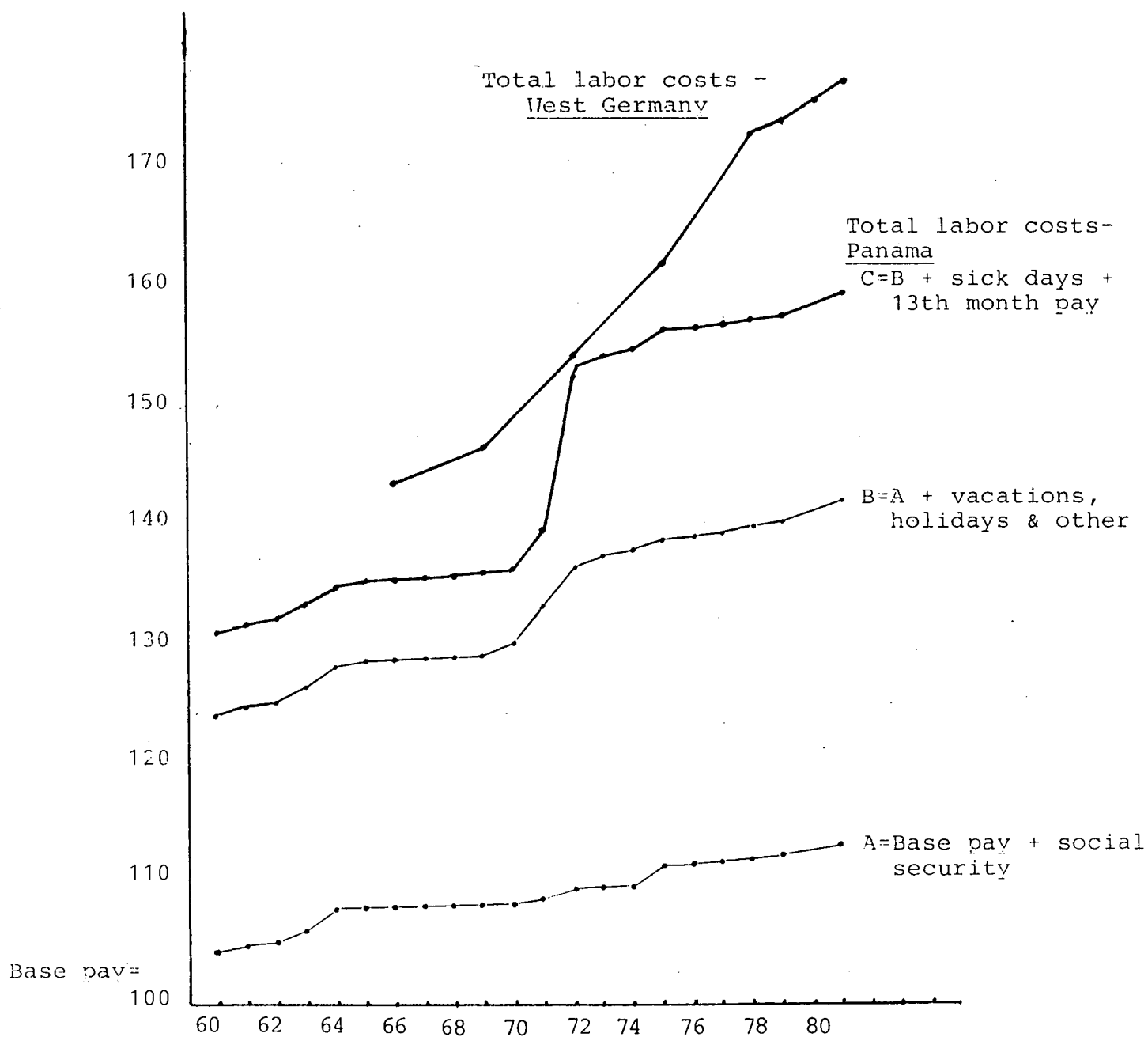
<sup>2</sup> See Spinanger (1986).

<sup>3</sup> In a survey of foreign investors who had actually begun concrete steps towards investing in Panama, but then decided otherwise, almost 40% (50% more than the next item) said that the LC was responsible for their negative decision.

Diagramm III.1

Development of Total Labor Costs in Panama since  
1960 - Compared with German since 1966

% of  
base pay



Source: Own calculations based on data from various  
national sources.

What all these benefits required by the LC, bargained for by unions or even offered by employers, induced in the way of non-wage labor costs can be seen in Diagram III.1. The initial costs of the LC actually almost caused their percent of base wages to equal the situation in the Federal Republic of Germany. If the diagram had included a risk premium due to the stability clause it would actually have surpassed the German line at that point and caused the gap to be smaller later on. While Germany might be able to afford such increases (i.e. having an advantage in physical capital intensive and human capital intensive industries), Panama, where more labor intensive industries are called for, can surely not.

After several unsuccessful forages, the government finally (in March 1986) adopted changes in the LC which - inter alia - allow for productivity-oriented payments and exempt small-scale industries from the Code entirely. The stability clause, however, still remains on the books and will thus remain the barrier which keeps jobs from being created, keeps new investments from being realized<sup>1</sup> and prevents Panama from producing a broader spectrum of competitively priced products. Conjecturing about how Panama might develop without the above distortions leads to the following concluding question: Why fast growing Asian exporters, particularly given Panama's undeniable locational advantages and knowing that some of these countries a mere 25 years ago were referred to as basket-cases (e.g. South Korea) or rather known for labor unrest (e.g. Singapore)?

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<sup>1</sup> Companies in the Far East upon being approached by official investment missions often told the mission that as long as the labor code contained (inter alia) the stability clause, they had no interest in investing in Panama.

In drawing final conclusions about the impact of labor costs on the structure of production, its location and trade flows two additional pieces of information are necessary. First of all the development of labor costs must be viewed in connection with the development of capital costs, that is in connection with the appropriate substitute factor of production. Hence, when discussing events in an inflationary world it is incorrect - at least in the context of this analysis from the production side - to discuss real wages deflated with consumer prices. The relevant price index is the one which applies to the cost of capital. This would be the price of capital goods as well as the (real) interest rate. Minimum wages, wages and the price of capital are all shown in Table III.2<sup>1</sup> Aside from pointing out that minimum wage legislation is concentrated in the less successful countries, the relationship between minimum wages/wage rates on the one hand and the price of capital on the other hand illustrate policies practised in various countries. In interpreting the results, however, it is essential that information about other policies crucial to tapping comparative advantages is taken into consideration (e.g. see comments on page 12 concerning interfacing between domestic and international markets). Likewise information on productivity levels is also necessary to fit the trends into a picture which reflects real developments. This might be, for instance, that higher rates of growth of wages in Taiwan reflect productivity increases to a larger degree than in Egypt.

Secondly since the costs of production represent only a part of the costs going into the final sales price of a product, the entire spectrum of these costs determined to what extent production activities are shifted to different locations. The extent to which intercountry transfers take place means that additional factors (e.g. exchange rates, political and economic environment) enter into the decision vector. Of these aspects only the exchange rate or rather foreign exchange/capital markets will be

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<sup>1</sup> The table is based on incomplete information for wages, which should actually be wage costs. Nonetheless it does give an overview of relative trends which would probably not be too much more different if such costs were included.



Table III.2 - Overview<sup>a</sup> of Minimum Wages, Wage Rates and Costs of Capital

Countries <sup>b</sup>	Minimum Wages <sup>c</sup>				Wage Rates <sup>d</sup>				Capital Goods' Prices Investment Deflators <sup>e</sup>		
	Base 1966	66-72	% Change 72-77	77-80	Base 1966	66-72	% Change 72-77	77-80	66-72	% Change 72-77	77-80
Industrializing Countries											
1. Taiwan (12)	-	-	-	-	-	-	162	65	12	74	23
2. Korea, R. (19)	-	-	-	-	5420M	270	265	112	81	145	93
3. Brazil (3)	81M	215	290	305	137M	320	402	335	239	297	343
4. Singapore (6)	-	-	-	-	.91H	8	63	33	28	39	22
5. Hong Kong (4)	-	-	-	-	10.16D	88	57	51	52	44	45
6. China, P.R. (2)	-	-	-	-	-	-	-	-	-	-	1
7. Mexico (7)	650M	52	180	53	5.95H	41	195	53	29	167	77
8. Malaysia (5)	-	-	-	-	-	-	-	-	10	40	36
9. India (1)	-	-	-	-	176M	42	87	23	30	61	40
10. Thailand (14)	-D	-	115	-	-	-	-	-	16	60	57
11. Turkey (16)	10.72D	59	251	-	22.66D	100	182	262	79	146	495
12. Indonesia (15)	-	-	-	-	-	-	-	-	2667	128	22
13. Argentina (8)	158M	182	44123	1455	.94H	250	3948	1222	251	10296	1075
14. Philippines (9)	6D	33	25	-	171M	61	-	53	64	113	43
15. Pakistan (11)	-	-	-	-	-	25	142	21	34	278	2
16. Colombia (13)	364M	49	190	144	4.15H	85	159	130	84	222	91
17. Morocco (17)	85H	13	22	-	.85H	13	303	40	23	63	41
18. Ivory Coast (18)	42.4H	38	97	-	-	-	-	-	27	79	28
19. Tunisia (21)	.08H	24	86	36	-	-	-	-	18	93	17
20. Egypt (10)	25D	20	33	-	3.34W	37	114	52	25	116	49
21. Kenya (20)	175M	0	100	-	516M	23	54	28	11	120	45
Industrialized Countries											
Germany, F.R.	-	-	-	-	4.42H	64	51	18	32	23	20
Japan	- D	-	71	-	40510M	131	114	22	20	61	14
United Kingdom	-	-	-	-	46.2H	77	105	58	40	119	50
United States	1.25H	28	44	35	2.72H	40	49	28	10	53	30

<sup>a</sup> This table is an attempt to combine data from various sources into one coherent table. Since definitional problems exist between countries as concerns minimum wages and wage rates, caution is necessary. - <sup>b</sup> See footnote in Table II.2 for explanation of ranking. - <sup>c</sup> The base in 1966 is in national currency units, corrected for any possible reforms. The letter following the base refers to hour (H), day (D) or month (M). - <sup>d</sup> Wage rates generally apply to manufacturing. See also footnote c. The W after base for Egypt means week. UK is in pence. - <sup>e</sup> Data taken from World Bank (1984) tables.

Source: Own calculations based on Starr (1981), World Bank (1984) and various national sources..

taken into consideration. In other words the interface between the domestic economy and the outside world (i.e. other economies) is considered crucial not only as concerns relocation of industries but also as applies to the interfacing of domestic production with foreign markets. With respect to an exchange rate index (i.e. effective exchange rate changes), these calculations illustrate one particular influence, namely that emanating from exchange rate changes, on international competitiveness. It is thus an essential link in interpreting developments in domestic markets and comparing them with those in international markets. That is, an exchange rate which - in real terms - is allowed to appreciate by not adjusting for domestic price increases relative to other countries, will make exportables less and less competitive even if domestic factor markets have allowed relative scarcities to be reflected in relative prices. Hence performance in world trade will - *ceteris paribus* - be negatively influenced.

This can be best exemplified by drawing on evidence from the table with the real effective exchange rate changes (Table AI.2, export price based index) combined with export performance indicators (Table II.2). As noted above changes in real exchange rates are but one factor affecting the ability to compete in world markets and thus must be viewed as a cog in the set of gears powering a country's development. The following caveats should be observed:

- Changes in real exchange rates only indicate a shift in the competitive position of a country in world markets and do not imply anything about the actual reaction of the country. Hence a real devaluation, which improves the competitive position, does not mean that competitive exports will be automatically forthcoming. In other words producers must react.
- Given the fact that producers must react to a change in their competitive position, it takes time before the necessary decisions are made and investments effected in order to engender

the products to be exported. To the extent that production facilities and marketing channels already exist such lead-time can be quite short. If new investments need be effected, marketing channels established and other steps taken, then the time frame can encompass several years.

- In the same vein real exchange rate changes will be all the more effective in inducing shifts in production if the changes are perceived as being of long enough duration so as to reduce the risk of not receiving a fair return. In other words widely fluctuating real exchange rates dampen the ability to predict the present value of a future stream of earnings<sup>1</sup>.
- Finally, changes in real exchange rates merely indicate size and direction of shifts in the competitive position, they do not imply that a country's exchange rate is at a level which permits exporting competitive products. This means that the changes have to enter or be within a range which would allow efficiently produced exports to be competitively priced.

Tying this information to the real effective exchange rate changes is most easily managed if the breakdown of export performance in the two periods (Chapter II, Table 2 and listing of winners/losers) is restructured to include real exchange rate changes (see Table III.3). At first glance there would seem to be a poor concordance between export performance and real exchange rate changes. But drawing on the above remarks allows the following evidence to be presented:

- The four top export performers, knowing that they had instituted policies (to a greater or lesser degree) to facilitate exports in line with comparative advantages, received from the real devaluations additional impulses for their exports. In the

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<sup>1</sup> Recent trends in oil prices portray quite well what happens if expected price increases, upon which investment decisions are based, are not realized.

Table III.3 - Changes in Export Performance Rankings (a) and Real Effective Exchange Rate Changes (b) - A Comparison

Winners				Midfield <sup>c</sup>			Losers		
Country		65-73	73-83	Country	65-73	73-83	Country	65-73	73-83
Korea	a	+14	+3	Brazil	-2	+2	Egypt	-7	-3
	b	-6	-14		+8	-29		-5	+16
Taiwan	a	+10	+1	Morocco	-1	+1	India	-6	-2
	b	-1	-12		-4	-13		-16	-16
Turkey	a	+3	+2	Mexico	-1	+1	Argentina	-1	-4
	b	-6	-24		-3	-5		+45	-376
Thailand	a	+2	+2	Ivory Coast	-1	+1	Philippines	-2	-3
	b	+3	-20		+15	-25		-6	-45
Indonesia	a	0	+3	Hong Kong	+1	-2	Pakistan	-5	+1
	b	+78	+127		+15	-25		+2	-19
Singapore	a	0	+2	Kenya	-1	0	China	-2	-2
	b	-7	+15		-15	+17		-	-
Tunisia	a	+1	+1				Colombia	-1	-2
	b	-5	+16					+68	+204
	a						Malaysia	-5	+2
	b							-9	+14

a) Change in rankings from Table II.2; i.e. an export performance indicator

b) Change in real effective exchange rate from Table AI.2.

c) Rank change  $\pm 1$  over period 1965-1983.

Source: See Table II.2 and AI.2.

case of Taiwan and South Korea the real exchange rates were relatively constantly devalued throughout the periods and the fluctuations were quite small.

- The top four losers exhibit little correlation between performance and real exchange rate changes. Given the wide spectrum of interventions impacting factor (and product) markets in these countries, the not overly large exchange rate changes could probably not be expected to compensate adequately. Only in the case of Argentina, does it seem logical to assume that such a large change in real exchange rates should have some effects. However, in this case the lead time must be taken into consideration as the real change took place only in 1980. Thus should entrepreneurs be able to reckon with a continuation of such a shift, additional exports would no doubt be induced. It might be noted that characteristics of the first three losers are wide fluctuations in real exchange rates, thereby increasing the difficulties entrepreneurs faced.
- For Colombia and Indonesia the large changes in real exchange rates do not seem to reflect at all the changes in the export rankings. In the case of Indonesia there is the impact of the oil price increases on the real exchange rate. Since the impact is less pronounced in consumer price based index (see Table AI.2) this figure for 1983 is probably more representative of changes is the competitive position. Columbia's real exchange rate is kept at a high level by receipts from the drug trade. That their losses remained relatively small is due to various policies enacted by the government to promote exports, thereby compensating partly for the shift.

The conclusion to be drawn from this evidence is simply that real exchange rate changes must be viewed in connection with other relevant trade measures in order to know where and why they influenced trade performance. This is particularly important to realize knowing that industrialization measures can compensate (via subsidies) for disadvantages suffered from overvaluated currencies. Over a longer period of time, however, such domestic

countermeasures run into financial constraints so that eventually a poorer export performance will result.

A brief but important discussion of the issues involved here and the methods used to construct an index representing a comprehensive picture of changes in the international competitive position is presented in Appendix I. In this connection the various policy measures which distort monetary flows or manipulate exchange rates also need to be taken into consideration (see Table AI.1 for overview). As a matter of fact if the number of different types of regulations/restrictions for the same set of countries used in Table I.1 are added up for the 70's the relationship between lack of restrictions and higher export growth is even better than the indicator used by Agarwala. This impression is actually visually created to some degree in Table AI.1. It might be added that to complete the picture information should be included on the trade barriers which restrict imports as well as cause indirect imports to increase the prices of domestic inputs.

### 3. Patterns of Trade and Factor Intensities - Deducing about Relative Labor Costs

It is standard procedure in international economics to examine the factor intensity of foreign trade of a given country to determine whether that country is specializing in products from industries which are considered to be in line with posited comparative advantages of the country. To the extent that this is not the case policies can then be examined to determine how they influenced relative factor prices. Since changes in the rankings of the countries in the tables used is interpreted as reflecting the performance in foreign trade, the relevance for this analysis is immediately apparent.

Such factor intensities were calculated here and an overview of the factor intensities<sup>1</sup> is given in Tables AII.3 (for exports of

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<sup>1</sup> The method used for calculating factor intensities and background information on its relevance is presented in Appendix II.

each country to the world) and AII.4 (for exports of each country to industrialized countries). It can be seen there that - generally speaking - among the industrializing countries, those with a decrease in the capital intensity or with a lower capital intensity of exports over time were those whose export performance was higher.

Despite the usefulness of this indicator of efficient (or inefficient) industrialization policies, it was decided to use a slightly more differentiated approach in this analysis. That is, since the major thrust of such exercises is to determine whether exports are in line with posited factor intensities, it was felt that an examination of exports along more unequivocal lines would be a straight-forward approach. Thus the exports (by industries) were divided into categories which could be labeled as being "definitely" low capital intensive and "definitely" high capital intensive. This meant that those industries around the middle of the physical capital intensity field (see Table AII.1 for factor intensities) - where there might be some questions to begin with - were excluded. The shift in the shares over time (i.e. in the periods 65-73 and 73-83) were then compared. One can immediately determine in which clearly delineated areas exports are flowing through. The same approach was carried out for human capital intensities. The results can be seen in Table III.4 (which contains a breakdown of exports by physical capital intensity) and Table III.5 (which contains a breakdown of exports by human capital intensity).

In the case of Brazil, for instance, which showed up on the physical capital intensity calculation as remaining relatively constant between 1965 and 1973, it can be seen that the share of exports in "definitely" low capital intensive areas increased quite strongly in the initial period. In the second period, however, they stagnated while the "definitely" high capital intensive exports strongly expanded. Generally speaking the tables allow a clearer picture to be developed than with the pure capi-

Table III.4 - Shifts<sup>a</sup> in Export Shares<sup>b</sup> into Industries with Definitely Low<sup>c</sup> or Definitely High<sup>d</sup> Physical Capital Intensities<sup>e</sup> for Exports to World and to Industrialized Countries

Countries <sup>f</sup>	Exports to World				Exports to Industrialized Countries			
	Low Capital Intensity		High Capital Intensity		Low Capital Intensity		High Capital Intensity	
	65/73	73/83	65/73	73/83	65/73	73/83	65/73	73/83
Industrializing Countries								
1. Taiwan (12)	31.8	-0.7	-7.1	5.4	34.7	0.6	-0.8	5.4
2. Korea, R. (19)	14.2	-9.5	-11.7	2.7	10.6	-9.5	-6.0	2.5
3. Brazil (3)	10.2	0.8	0.2	15.6	12.2	2.9	2.3	13.6
4. Singapore (6)	17.3	3.6	-7.9	-0.9	42.5	4.3	-18.0	-0.5
5. Hong Kong (4)	3.6	3.2	-3.4	-1.1	-1.5	3.7	-1.2	-1.1
6. China, P.R. (2)	3.2	3.7	-2.0	-0.1	17.1	-5.2	-9.5	4.3
7. Mexico (7)	4.3	9.6	-3.8	-1.5	5.2	12.5	-4.1	-2.8
8. Malaysia (5)	5.3	20.3	-15.1	-13.6	6.6	21.4	-19.6	-14.0
9. India (1)	-3.8	-4.5	3.3	3.7	-2.5	-4.5	2.6	4.5
10. Thailand (14)	12.6	4.5	-0.6	-6.1	11.4	0.2	-4.7	-6.6
11. Turkey (16)	7.5	2.8	-7.6	5.5	5.3	15.8	-9.1	-4.2
12. Indonesia (15)	7.7	15.3	-1.4	3.9	9.4	6.0	-4.9	12.7
13. Argentina (8)	10.8	-4.9	5.7	3.8	8.9	1.0	2.6	9.5
14. Philippines (9)	-1.6	16.5	10.8	-10.5	-2.4	19.3	10.5	-10.6
15. Pakistan (11)	-19.1	7.2	10.4	-6.4	-11.6	1.5	7.8	-1.8
16. Colombia (13)	14.3	-7.7	7.3	1.4	13.5	-8.6	4.9	2.9
17. Morocco (17)	8.0	7.6	-10.8	15.3	7.3	13.1	-15.4	6.6
18. Ivory Coast (18)	4.3	0.8	1.7	2.9	2.9	0.2	0.3	-0.9
19. Tunisia (21)	1.1	30.4	7.3	-11.1	6.3	36.9	10.8	-17.9
20. Egypt (10)	-8.9	-5.5	4.0	6.6	4.3	-15.8	-0.7	14.5
21. Kenya (20)	-3.9	-7.6	2.0	2.1	-7.5	-7.0	-2.9	-1.5
Industrialized Countries								
Germany, F.R.	0.3	-2.1	-1.7	-1.3	0.2	-2.7	-2.1	-1.1
Japan	-1.2	6.3	-1.9	-6.3	5.9	7.3	-6.8	-14.3
United Kingdom	-0.6	-2.2	0.4	0.6	-0.6	-2.4	0.2	1.6
United States	0.4	2.8	-2.3	-1.3	0.3	1.9	-2.8	-0.9

<sup>a</sup>Simple difference in shares between stated time periods. - <sup>b</sup>Export shares based on 28 ISIC industries between 311-390 (excluding 353 and 354). - <sup>c</sup>Consists of following ISIC industries: 321,322,323,324,331,332,342,380,381,382,383,385 and 390. - <sup>d</sup>Consists of following ISIC industries: 313,314,341,351,352,361,362,369,371 and 372. - <sup>e</sup>Capital intensities defined as capital assets/employee; see also Appendix II. 1980 capital intensity indices used. - <sup>f</sup>The ranking of the industrializing countries is determined by value manufactured exports in 1983. The number in () is ranking in 1965.

Source: Own calculations based on data from UNCTAD.



Table III. 5 - Shifts<sup>a</sup> in Export Shares<sup>b</sup> into Industries with Definitely Low<sup>c</sup> or Definitely High<sup>d</sup> Human Capital (HC) Intensities<sup>e</sup> for Exports to World and to Industrialized Countries

Countries <sup>f</sup>		Exports to World				Exports to Industrialized Countries			
		Low HC Intensity 65/73	High HC Intensity 73/83	Low HC Intensity 65/73	High HC Intensity 73/83	Low HC Intensity 65/73	High HC Intensity 73/83	Low HC Intensity 65/73	High HC Intensity 73/83
Industrializing Countries									
1. Taiwan	(12)	23.6	-7.3	-1.5	7.6	23.7	-6.9	4.5	8.4
2. Korea, R.	(19)	3.2	-13.8	-7.6	11.5	-1.0	-12.0	-2.3	10.3
3. Brazil	(3)	7.1	-6.0	1.4	20.2	9.7	-5.1	3.6	18.0
4. Singapore	(6)	3.9	-3.9	1.9	1.4	11.1	-6.3	1.3	1.9
5. Hong Kong	(4)	-0.9	-6.3	-1.8	4.5	-3.1	-7.2	0.3	5.1
6. China, P.R.	(2)	2.5	1.3	-2.1	1.6	17.3	-8.7	-9.6	5.1
7. Mexico	(7)	-0.4	-1.8	2.5	1.7	-0.3	-0.7	2.1	1.0
8. Malaysia	(5)	11.4	0.2	-13.5	-7.7	15.9	-4.6	-17.8	-5.1
9. India	(1)	-7.4	-8.6	4.8	3.6	-4.1	-7.9	3.6	4.4
10. Thailand	(14)	7.4	-1.5	-1.6	-5.3	4.2	-1.8	-5.2	-6.3
11. Turkey	(16)	7.5	-3.1	-8.7	5.0	6.9	12.3	-10.0	-4.1
12. Indonesia	(15)	1.8	13.5	-5.0	3.8	0.0	10.4	-5.7	12.3
13. Argentina	(8)	3.6	-1.8	9.0	2.4	6.7	-2.3	4.1	12.2
14. Philippines	(9)	-3.1	4.7	9.5	-7.6	-3.3	6.8	10.2	-8.2
15. Pakistan	(11)	19.0	5.6	9.5	-5.5	-12.1	-0.9	7.8	-1.6
16. Colombia	(13)	11.8	-7.9	7.0	1.6	12.7	-9.3	5.0	3.0
17. Morocco	(17)	7.0	6.9	-9.9	14.4	7.7	10.2	-15.1	6.1
18. Ivory Coast	(18)	4.1	1.5	2.7	2.5	4.1	0.5	0.8	-0.9
19. Tunisia	(21)	2.2	22.6	6.3	-8.8	6.9	27.4	10.7	-16.4
20. Egypt	(10)	-8.7	-8.1	3.7	7.1	6.1	-20.5	-1.3	14.5
21. Kenya	(20)	-3.2	-8.1	1.3	1.1	-5.3	-6.8	-3.0	-1.6
Industrialized Countries									
Germany, F.R.		0.6	-1.2	-1.1	-0.0	0.4	-1.1	-1.4	0.7
Japan		-7.5	-2.0	4.9	-4.9	-8.5	-2.4	3.1	-2.3
United Kingdom		-0.2	-3.3	1.8	2.7	-0.1	-4.0	1.6	3.6
United States		0.4	-2.3	2.0	2.2	0.0	-3.0	1.1	4.2

<sup>a</sup>Simple difference in shares between stated time periods. - <sup>b</sup>Export shares based on 28 ISIC industries between 311-390 (excluding 353 and 354). - <sup>c</sup>Consists of following ISIC industries: 321,322,323,324,331,332,356 and 390. - <sup>d</sup>Consists of following ISIC industries: 313,314,341,351,352,371,372,382 and 384. - <sup>e</sup>Human capital intensities defined as wages/employee; see also Appendix II. 1980 human capital intensity indices used. - <sup>f</sup>The ranking of the industrializing countries is determined by value of manufactured exports in 1983. The number in () is ranking in 1965.

Source: Own calculations based on data from UNCTAD.

tal intensity measure, not only of the expansion by factor intensity grouping, but also by time period. Thus the top four countries rapidly increased their exports in the low capital intensity areas in the initial period, while high capital intensity products revealed a relative decrease. In the ensuing 73/83 period we find high physical and human capital-intensive goods gaining - a development to be expected as income levels increase or rather as relative prices of factor inputs change (as described above).

Those countries located at the bottom or those whose rank dropped sharply over time (also those with the lowest growth rate of GDP/capita) revealed tendencies to increase exports of relatively physical and human capital intensive goods. Vis-à-vis the industrialized countries this becomes even more apparent.

#### 4. The Effectiveness of Reducing Production Costs through Free Economic Activity Zones - Some Evidence

In the course of reorienting development policies towards world market parameters, so as to allow relative domestic factor market prices to more closely reflect relative factor scarcities and hence lead to a more competitive economy, the extent and speed with which old price structures are replaced by new ones is often determined by political considerations rather than economic efficiency criteria. To compliment such policies and at the same time to benefit - inter alia - from an immediate removal of major distortions, an ever increasing number of countries (see Table III.6) have opted for free economic activity zones (FEAZs), which are supposed to represent relatively undistorted enclaves in an otherwise distorted environment<sup>1</sup>. Particularly in light of the

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<sup>1</sup> In Appendix Table AIII.1 an overview of the types of free zones is presented. The ranking in the overview is roughly determined by the expected value-added impact of a zone to an average economy. To the extent that the structure of a given economy differs considerably from that of an average economy, the ranking and the explanations have to be adjusted accordingly.

success which some Asian NICs seemed to have had in tapping the FEAZ potential, these zones have been rapidly created in numerous industrialized as well as industrializing countries. As much as the opening up of the economy via specific locations and/or activities is considered by some to be a politically sensible<sup>1</sup> move, others perceive of FEAZs being a potential barrier to further factor and product market liberalization actions<sup>2</sup>. Assuming the former to be the case, then FEAZs are seen as representing but one step in the removal of distortions throughout the economy.

In light of the growing importance of FEAZs in both DCs as well as ICs their global impact with respect to the structure, development and implications of production, employment and investment in as well as trade to/from these zones, must be more clearly understood<sup>3</sup>. As concerns their importance, Table III.6 documents their increased use in the Asian countries, accounting for slightly less than half the zones existing in developing countries today. Excluding the free-zone cities of Hong Kong and Macau plus the free-zone-like city-state of Singapore - direct manufacturing employment in these zones alone amounts to well over 500,000. Although but minor with respect to total employment in and exports of the manufacturing sector, countries like Malay-

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<sup>1</sup> It is felt that FEAZs will be a success in attracting firms and - to the extent that the firms are successful themselves - domestic entrepreneurs will want to imitate them. In doing so resistance against opening up the economy will be reduced.

<sup>2</sup> The fear is based on the assumption that FEAZs will only serve as an alibi thus stopping further progress on an economy-wide scale.

<sup>3</sup> For an overview of all EPZs see Currie (1985), for those in Asia together with an investigation of their performance see articles in Lee (1984). A comparative analysis of the performance of EPZs in Asia is presented in Spinanger (1984).

Table III.6 - Spread of Free Zones in South, Southeast and East Asia by Year of Establishment

Country	<1970	1970-79	>1979
EPZs			
Bangladesh	-	-	1
Burma <sup>a</sup>	-	-	1
China, Peoples' Republic	-	-	18
China, Taiwan	1	2	1
India	1	1	-
Indonesia	-	2	-
Korea, Republic	-	2	-
Malaysia	-	10	1
Pakistan	-	-	1
Phillippines	-	3	3
Sri Lanka	-	1	1
Thailand	-	-	1
Vietnam <sup>a</sup>	-	-	1
Subtotal	2	21	29
Free Zones			
Hong Kong	1	-	-
Macao	1	-	-
Singapore	1	-	-
Subtotal	3	-	-
Total	5	21	29

<sup>a</sup>Exact status not known.

sia, Taiwan, Mauritius<sup>1</sup> and Sri Lanka all still can, or could, attribute sizeable portions of their nontraditional manufactured exports to the establishment and expansion of their EPZ facilities. In the case of Taiwan, the zones developed strong linkages with the domestic economy and contributed noticeably in creating spin-off industries and developing technology. It can thus perhaps be contended, that to the extent that EPZs did not develop stronger linkages over time, inefficient policies existed or the domestic economy was not yet able to produce the necessary intermediate inputs<sup>2</sup>.

Despite the rapid expansion in the number and importance of EPZs they are often not considered as an efficient industrialization policy measure. In particular there seems to be the tendency in some countries to view the EPZs as an "alibi" trade liberalization policy. Thus, together with an expansion of non-traditional exports from firms in EPZs, import substitution policies for the domestic sector are perpetuated or even expanded instead of being phased out<sup>3</sup>. To the extent that this is accompanied by subsidies for firms in EPZs (in the form of lower-than-market prices for industrial land, utilities and other services as well as subsidized loans) then any positive benefits attributable to the EPZs can easily be negated.

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<sup>1</sup> Belongs of course to Africa, but mentioned here since it has adopted a flexible approach to the free zone idea.

<sup>2</sup> Given also the experience of foreign companies in Singapore, where they developed stronger ties to local entrepreneurs over the years, there would seem to be little reason to doubt the ability of EPZs to do so. Obviously, however, this is not going to be a rapid process in countries which have a weaker industrial base (e.g. Bangladesh).

<sup>3</sup> This might well be observed in Malaysia where large scale, heavy industry projects have been initiated in recent years despite numerous warnings about their allocative inefficiency. The Philippines could also fit into such a category, at least as concerns the perpetuation of protection for domestic industries. Likewise policies in Panama seem to be influenced by such an attitude. As concerns the People's Republic of China with its special economic zones it remains to be seen whether it is also following a course where the domestic market will continue to remain subjected to different industrialization policy measures than prevail in the zones.

That economic gains are forthcoming, that is, that industries settle in zones in accordance with efficiency criteria, can be shown in two, not entirely independent examples. First of all the case of Malaysia, where free zones were legislated at the beginning of the seventies. Without embarking on a cost benefit analysis of the 11 zones<sup>1</sup> existing today in Malaysia, it can be easily documented that the zones have been successful in

- attracting firms in line with shifting comparative advantages and
- at the same time allowing firms in the zones to structure their activities in an efficient hence competitive manner.

Secondly an examination of the electronics industry imports from non-OECD countries into OECD countries (a particularly relevant product because it is labor intensive work being incorporated into products of higher income elasticity demand) reveals that (see Table III.7) with the exception of India EPZs induced noticeable increases in the shares. Behind this development the following occurred:

- shifts in shares basically coincided with shifts in relative labor costs - particularly if new incentives for firms setting up in the EPZs (e.g. Malaysia) are taken into account,
- that factor intensities of the electronics firms in the zones were roughly at levels in line with labor intensive production structures (see Spinanger, 1986, chapter 4).

What all this means in terms of trade flows between ICs and DCs and among DCs can be seen in Diagram III.1, where the production/sales paths of a Japanese company are outlined. With the necessary information on labor and capital costs the flows could no doubt be explained without difficulty.

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<sup>1</sup> See Spinanger (1984) and Warr (1985) for such analyses.

Table III.7 - EPZs<sup>a</sup> and Imports of Electronics Industry Products<sup>b</sup> into OECD Countries from Selected Developing Countries, 1965-1983

	1965	1967	1969	1971	1973	1975	1977	1979	1981	1983
OECD electronics imports:										
(1) Total <sup>c</sup>	3.28	4.63	6.80	9.79	17.85	22.26	31.03	46.02	58.49	70.65
(2) From non-OECD sources <sup>c</sup>	.20	.30	.58	1.00	2.65	3.59	5.59	9.13	11.87	15.76
(3) (2) as % of (1)	6.2	6.4	8.5	10.2	14.8	16.1	18.0	19.9	20.3	22.3
(4) Source as % of (2): <sup>d</sup>										
Hong Kong	18.2	23.2	23.4	20.3	14.3	12.4	13.4	11.2	10.9	11.7
Taiwan	2.1*	8.6	15.9	19.9*	24.8	17.6	19.3	20.6	20.4	19.1
India	.9*	1.0	.6	.4	.3	.2*	.5	.3	.2	.2
Mexico	.1	1.9*	11.6	13.0	13.9	14.0	8.8	10.9	10.3	10.0
Korea, R.	.3	.9	4.0	5.4*	9.6	11.0*	15.3	15.2	12.8	14.0
Singapore	.0	.1	1.5	7.4	13.0	12.6	12.1	14.1	15.9	16.0
Malaysia	.2	.1	.1	.1	2.2*	6.7	7.5	9.8	11.0	11.1
Philippines	.0	.0	.1	.0	.3	1.0*	1.9	3.2*	5.4	5.5

<sup>a</sup>A \* designates completion of one or more EPZs or EPZ-like facilities in or around given year. - <sup>b</sup>The electronics industry is considered to be made up of the following 9 SITC groups (Rev. 1):

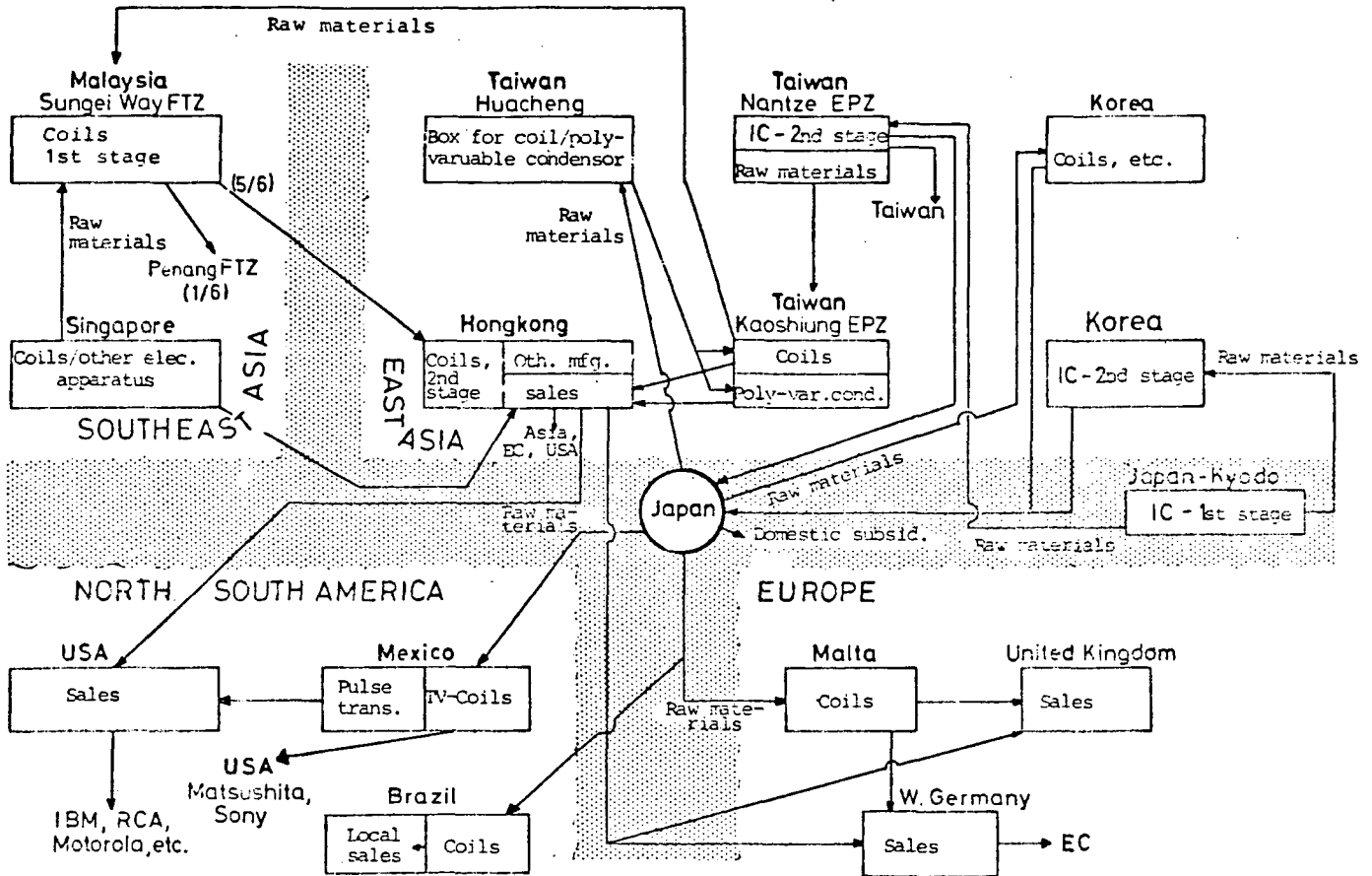
- 714.2 calculating and accounting machines, including electronic computers
- 714.3 statistical machines, including electronic machines
- 714.9(2) parts of office machinery
- 724.1 television broadcast receivers
- 724.2 radio broadcast receivers
- 724.9 telecommunications equipment, n.e.s.
- 729.3 thermionic, etc. valves and tubes, transistors, semiconductors, etc.
- 729.9(5) electrical condensers and parts
- 891.1 phonographs, tape and other sound recorders, etc.

<sup>c</sup>Billions of US\$. - <sup>d</sup>Ranking of sources by average values in years 1965 and 1966.

Source: Own calculations based on UNCTAD data.

Diagram III.2

PRODUCTION/SALES PATHS OF A JAPANESE ELECTRONICS COMPANY



Explanation: IC = integrated circuits; Cond. = condenser; EPZ = Export Processing Zone; FTZ = Free Trade Zone; Raw materials include intermediate inputs.

Source: Adapted from Kenji (p. 203).



Since FEAZs are used extensively in connection with the offshore processing arrangements of industrialized countries, an attempt to explain source countries' shares in US overseas processing imports in terms of labor costs and productivity differentials has yielded results that at best can be called mixed (see Tables III.8 and III.9). If at all, it would seem applicable to trade in simple, mass-produced electrical components, for which low cost producers in Southeast Asia to some extent have been able to increase their market shares in accordance with their comparative advantage (see Bothe (1985) for more detailed information). For instance in the case of electrical components for the US market, Southeast Asia and Mexico deliver over 75% of the imports. A comparison of the wage and productivity differentials does seem to show that Malaysia has a strong competitive position, thereby helping to explain its performance above.

## 5. Conclusions

In this brief attempt to outline, analyze and interpret - albeit in an eclectic manner - the interconnection between distortions in labor markets and international trade performance, the evidence presented at least provides a degree of credence to the posited thrust of the impact. It was first shown in the case of Panama - as an example on one end of the spectrum - what can happen when labor markets are so rigidly regulated that not only the demand for labor is negatively influenced, but also exports and economic growth in general are severely influenced. Attention was then drawn to the overall factor market impact of industrialization policies by examining the prices for labor and capital and then prying into the degree to which countries concentrated their exports in industries where they were assumed to have comparative advantages. This revealed that countries which did follow more efficient policies as concerns the allocation of resources (i.e. labor and capital) were those which were most successful.

Table III.8 - Wages in Major Industries of Selected Countries Relative to United States (1980)

Commodity Groups	Japan	Mexi- ko	Germa- ny	Can- da	Malay- sia	Singa- pore	Phil- ippines	Tai- wan	Hong Kong
Metals	71.6	33.5	113.4	91.5	-	-	-	16.3 <sup>e</sup>	-
Wearing apparel & other textile products	-	46.5	-	-	-	-	9.3 <sup>b</sup>	-	41.8
Heavy machinery, non-electric	74.3	37.8	108.2	81.2	-	-	-	-	-
Office machines & parts	-	36.7	-	73.2	-	27.5 <sup>c</sup>	6.8 <sup>b</sup>	-	20.8
Electric household appli- ances, incl. phonographic & sound-amplifying equipment	58.4	31.8	-	83.6	10.1 <sup>b</sup>	22.4	-	-	13.0
Equipment for emitting & receiving TV & radio signals	58.4	31.8	-	83.6	10.1 <sup>b</sup>	22.4	-	-	13.0
Electric & electronic compo- nents, incl. semiconductors	31.7	-	-	84.9	10.4 <sup>b</sup>	20.6	8.7 <sup>b</sup>	-	23.6
Motor vehicles & parts	63.9	33.1	95.5 <sup>d</sup>	-	-	-	-	-	-
Precision instruments	61.5	-	98.5	76.6	-	23.8	5.9 <sup>b</sup>	-	-
Watches	61.5	-	98.5	76.6	-	23.8	5.9 <sup>b</sup>	-	-
Game Machines	-	36.7	-	73.2	-	27.5 <sup>c</sup>	6.8 <sup>b</sup>	-	20.8

<sup>a</sup>Differential measured as average annual wage in source-country over the equivalent in US. -

<sup>b</sup>1979. - <sup>c</sup>ISIC 382 instead of 3825 used. - <sup>d</sup>ISIC 384 instead of 3843 used. - <sup>e</sup>For total manu-  
facturing sector, 1978.

Source: United Nations (1983), International Labor Organization (1983).

Table III.9 - Productivity in Major Industries of Selected Countries Relative to United States  
(1980)

Commodity Groups	Japan	Mexi- ko	Germa- ny	Cana- da	Malay- sia	Singa- pore	Phil- ippines	Tai- wan	Hong Kong
Metals	81.0	206.4	81.5	81.5	-	-	-	12.7 <sup>b</sup>	-
Wearing apparel & other textile products	-	271.9	-	-	-	-	13.3 <sup>c</sup>	-	35.4
Heavy machinery, non-electric	85.3	779.0	78.3	75.6	-	-	-	-	-
Office machines & parts	-	116.8	-	63.1	-	35.7 <sup>d</sup>	7.3 <sup>c,d</sup>	-	54.7
Electric household appli- ances, incl. phonographic & sound-amplifying equipment	74.6	117.8	-	81.6	13.4 <sup>c</sup>	27.8	-	-	53.4
Equipment for emitting & receiving TV & radio signals	74.6	117.8	-	81.6	13.4 <sup>c</sup>	27.8	-	-	53.4
Electric & electronic compo- nents, incl. semiconductors	-	139.8	-	77.4	14.6 <sup>c</sup>	29.6	13.2 <sup>c</sup>	-	79.3
Motor vehicles & parts	91.2	123.1	86.2 <sup>e</sup>	-	-	-	-	-	-
Precision instruments	53.2	n.a.	81.6	55.8	-	21.2	7.9 <sup>c</sup>	-	-
Watches	53.2	n.a.	81.6	55.8	-	21.2	7.9 <sup>c</sup>	-	-
Game Machines	-	116.8	-	63.1	-	35.7 <sup>d</sup>	7.3 <sup>c,d</sup>	-	54.7

<sup>a</sup>Differential measured as average annual wage in source-country over the equivalent in US. -  
<sup>b</sup>1979. - <sup>c</sup>ISIC 382 instead of 3825 used. - <sup>d</sup>ISIC 384 instead of 3843 used. - <sup>e</sup>For total manu-  
facturing sector, 1978.

Source: United Nations (1983), International Labor Organization (1983).

Given this information, one possible type of strategy was examined, where relatively undistorted areas are delineated from an otherwise distorted economy (i.e. free zones) as a first step towards liberalizing the entire economy. It was determined that these zones were successful in attracting large amounts of investments in basically labor-intensive industries (e.g. electronics) and engendering employment as well as in noticeably increasing exports to industrialized countries. While caveats were raised with respect to the degree to which such zones were subsidized and to the extent they were possibly used as an alibi not to liberalize economies any further, those cases where free zones proved to be successful in having production structured in line with assumed comparative advantages and/or in developing linkages with the domestic economy were interpreted as meaning that the approach is generally viable. Particular reference was made to the importance of offshore processing by industrialized countries in connection with these zones but also as concerns the impact of relative labor costs on the competitive position of a country.

What remains to be clarified is whether large developing countries with rather distorted economies can institute a relatively efficient incentive/price system so as to

- allow factors of production to be combined in a manner in line with their relative abundance and
- ensure that access to the necessary technology, foreign intermediary inputs, to foreign exchange and to financing facilities is given.

All this is intended to produce exports which can successfully compete in world markets. If such a system can be instituted in a country which has otherwise performed extremely poorly in foreign markets, then the foundation upon which the above evidence rests would be strengthened.

Such a case in point does exist as can be seen in Box 4 which describes the success Bangladesh has had in efficiently producing

Box 4

Getting Richer with Rags or

Why the Emperor's New Clothes Could Be Made in Bangladesh<sup>1</sup>

There are but few other countries whose per capita income lies below Bangladesh's and even fewer who have received more development assistance over the years. With average per capita income growth rates just slightly above zero and with real exports expanding not noticeably faster, the difference between growth, stagnation and contraction is measured to the right of the decimal point. In particular the heavy dependency on jute and jute products (see Table III.10), the world demand for which decreased noticeably in the 1965-83 period<sup>2</sup>, meant that economic structures had to be shifted to more profitable areas, if the country was to profit from foreign impulses. Recalling the terminology (from Asian Drama) characterizing inflexibility as a trait of underdevelopment, and knowing that binding financial constraints as well as heavily restricted capital/foreign exchange markets leave almost no room for manoeuvring, a dramatic export increase could not be expected.

Table III.10 - Structure of Bangladesh Exports: 1974-1985

	1974/75	1977/78	1980/81	1981/82	1982/83	1983/84	1984/85
1) Jute	2.53	5.19	7.93	7.88	10.11	11.64	13.96
% of total	82.7	70.0	68.4	63.6	62.6	58.5	57.9
2) Leather	.22	.68	.93	1.26	1.38	2.09	1.78
3) Garments	-	.001	.05	.14	.26	.77	3.00
4) Fish/prawns	.02	.29	.65	1.06	1.70	1.92	2.28
Total (bill taka)	3.06	7.41	11.60	12.39	16.16	19.90	24.10

Source: Own calculations based on national statistics.

<sup>1</sup> The title is adapted from a book by Morawetz (Why the Emperor's New Clothes are Not Made in Colombia (1981)) in which he examined the reasons for the quick rise and fall of the garments industry in the 1970's.

<sup>2</sup> World exports of raw jute (SITC 264) decreased by about 25% in this period.

Nonetheless and despite trends in the past there was such a strong surge in garments exports in the last three years that they accounted for 12.5% of total exports in 1984/85 (against slightly over 1% in 1981/82). Although the actual dollar amount in 1984/85 was about 110 million, Bangladesh was slapped with MFA quotas by Great Britain, France, the United States and Canada in the course of 1985<sup>1</sup>. While it is true that the success of garment exports to the United States was very impressive as can be seen in the sizeable increase in shares in Table III.11 (particularly relative to the development of the other suppliers), the swiftness of the action by the US and especially the small size of the quotas (e.g. the quota size for men's shirts was just 50% larger than the quotas applied by Great Britain and France alone) did not seem justified given the actual level on exports from Bangladesh. Given the method of quota calculation it meant that several hundred thousand dozens of garments would be stuck in the pipeline. The sharp reduction in the shares of clothing coming from Bangladesh into the US - in the case of category 334 almost to zero (Table III.11) - demonstrates how hard the quotas bit.

The basis for this surprising development path is three-fold. First of all in the second half of the 70's South Korean businessmen ventured to Bangladesh to assist in transferring the necessary technology to be able to produce and export MFA products. The number of domestic companies profitting from this advice remained small, but within the garment exporting community there developed a definite awareness of the issues at stake. This already brings the discussion to the second point namely the endogenous desire to obtain knowledge and then determine how it can be put to its best use<sup>2</sup>.

The final point embodies the switch in incentive policies during the start of the 80's, when bonded warehouses and drawback schemes were instituted. In particular the bonded warehouses were used extensively in this connection as they minimized bureaucratic difficulties and hence costs.

It thus did not take very long before this mixture catalyzed and garment firms were founded, whereby the South Korean links proved to be very effective. Not only did they continue to provide the technical assistance, knowhow and management methods, they provided the necessary textile inputs and purchased the finished garments as well. By doing so the Bangladesh firms were even relieved of the difficult marketing problems. Given such a smooth functioning interface between domestic production and foreign sales, entrepreneurs came to the fore and by the summer of 1985 almost 750 firms had been sanctioned, 465 of them were in produc-

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<sup>1</sup> The reason for the quotas was not because of the actual amount, but rather because of the high growth rate (i.e. a surge).

<sup>2</sup> The development of informative trade journals in Bangladesh is one indication of this.

Table III.11 - Selected US Clothing Imports by Category<sup>a</sup> and Country (%)

Category	334	340	347	348
Country/ Period	Cotton Coats MB <sup>b</sup>	Cotton Shirts MB <sup>b</sup>	Cotton Trousers MB <sup>b</sup>	Cotton Trousers WGI <sup>c</sup>
Bangladesh				
1983 - Year	1.4	0.6	0.2	0.1
1984 - Year	2.6	2.8	1.6	1.0
1985 - Jan.-Aug./Year	7.9/5.2	9.0/6.3	7.2/6.1	4.8/4.5
1986 - Jan.-Mar.	0.1	1.2	5.8	3.9
Hong Kong				
1983 - Year	16.9	35.1	33.1	40.0
1984 - Year	16.2	28.1	24.3	33.6
1985 - Jan.-Aug./Year	12.9/14.1	20.7/22.0	23.4/23.9	30.8/34.1
1986 - Jan.-Mar.	13.9	24.0	17.6	25.7
China, P.R.				
1983 - Year	21.7	11.0	17.3	16.0
1984 - Year	14.7	7.3	11.0	9.0
1985 - Jan.-Aug./Year	15.8/13.9	7.0/5.3	7.2/5.9	5.2/4.6
1986 - Jan.-Mar.	14.5	4.1	11.7	13.1
Taiwan				
1983 - Year	5.7	10.5	6.7	5.9
1984 - Year	4.1	7.5	5.3	4.8
1985 - Jan.-Aug./Year	3.0/3.6	6.0/6.3	7.0/6.7	5.0/5.0
1986 - Jan.-Mar.	4.5	6.6	5.1	3.2
Korea, R.				
1983 - Year	4.5	2.9	1.9	1.7
1984 - Year	3.9	2.1	1.9	1.3
1985 - Jan.-Aug./Year	4.2/3.8	1.4/1.6	1.7/2.0	1.1/1.1
1986 - Jan.-Mar.	3.8	2.2	3.5	1.1

<sup>a</sup>U.S. tariff categories relevant for trade studies; as concerns the abbreviations. - <sup>b</sup>MB = men and boys. - <sup>c</sup>WGI = women, girls and infants.

Source: Own calculations based on U.S. Department of Commerce (1985, 1986).

tion employing about 140,000 persons<sup>1</sup>. With an estimated US\$ 70 million invested, a garment industry had been created in a country many believed would only be able to survive with increasingly larger aid transfers.

That the entire process worked so well is attributable to the above-mentioned factors plus the simple fact that an ample (relatively price inelastic) supply of labor existed, which could be easily tapped and quickly trained. Thus not only were employer's search costs close to zero there was also no need to fear that wage pressures would become a problem (at least not in the short-run). Likewise the lack of minimum wages above productivity levels meant that the factor intensity of production could be aligned with relative factor scarcities. Finally productivity levels turned out to be surprisingly high, whereby absenteeism proved to be a non-problem and incentive payments (to the extent they were offered) were readily accepted. All in all the entire operation - after only a brief gestation period - now competitively produces garments for world markets or emperors should they desire.

Bangladesh's (state run/regulated) textile industry, however, remains totally incompetitive as landed prices of foreign textiles are below those of locally produced companies<sup>2</sup>. But seeing how fast production structures can change there is reason to assume that it can be done again if the consequences are drawn from the above scenario. The immediate incentives are already there for sure - the textiles could serve as inputs into the rapidly expanding garment industry.

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<sup>1</sup> Beyond this trade journals developed and a directory of textile/garment producers has already gone into its 3rd edition.

<sup>2</sup> Should quality differences be taken into consideration, the difference would be larger.



clothing and exporting then to (mainly) industrialized countries. To contend that such success was only possible because of the existence of the MFA and thus the necessity of certain industrializing countries to export textiles in order to keep the utilization rate in their own textile mills up to acceptable levels (e.g. Korea), is incorrect. More than likely a country like Korea, which has been allocated certain quotas within the MFA agreements, has tried to hold on to these quotas as long as possible, not knowing what happens when they move into other areas of clothing or textile production. Therefore they continue to produce in the assigned quota areas and attempt to profit from whatever rents they might be able to extract from their position. However, had MFA not existed and access to industrialized markets was not otherwise restricted, Korea would have had to shift those areas of production, where they no longer had comparative advantages, out of the country at a far earlier point in time, if they wanted to remain competitive in world markets. Thus the MFA can be assumed to have actually delayed the setting up of production in Bangladesh, rather than promoting it.

It should nevertheless be stressed that the fact that Bangladesh was successful in this export area is attributable mainly to the adaptability, flexibility and general entrepreneurial traits exhibited together with essential policy measures and the existence of labor which could be efficiently tapped. Since the role of Korea (or any other more advanced industrializing country) in this process can best be described as one of a catalyst, the experience of Bangladesh is relevant for other industrializing countries where a more rapid expansion of exports would help increase growth and thereby reduce financial constraints which have become more severe in recent years.

#### IV. Capital Costs

##### 1. Introduction

As in the case of labor costs, the impact of factor market distortions on the demand for and supply of capital as well as the implications for export performance, can only be approached in an eclectic manner. While it is true that information on a wide spectrum of aspects - from interest rates and incentives through depreciation allowances and tax rates - is readily available, these measures are at best very rough indicators and little information exists on their actual relevance or the extent to which they are applied. If this describes the general state of affairs, the situation becomes increasingly difficult when attempting to differentiate between industrialized and industrializing countries and even more so when sectoral or subsectoral disaggregations are attempted.

In making an attempt to estimate the cost of capital, a per unit output formulation is in line with the analysis carried out here. The per unit costs of capital are determined by the unit price of capital and the degree of utilization of capital in the production process. Since - as mentioned above - the unit price of capital itself is influenced by a variety of factors (i.e. by exchange rates, tariff rates, financial and fiscal subsidies as well as by depreciation allowances)<sup>1</sup> and these vary widely over

<sup>1</sup> The cost to a plant of holding capital stock for a period cannot be obtained directly, but must be imputed from indirect sources, assuming that plants aim at maximizing the present value of their net revenue after taxes. The cost of owning one unit of productive capital stock for a year (where the unit is defined as a dollar's worth of imported capital) has two components: The cost of purchasing the capital equipment, and the opportunity cost of owning it. The implicit cost to a firm  $i$  of owning on a dollar's worth of imported capital for one year ( $P_i$ ) is given by:

$$P_i = Z (1 + T_i) (1 - g_i) (r_i + d_i)$$

where:

$Z$  = exchange rate applicable to imports of capital goods

$T_i$  = tariff rate on capital goods imported by firm  $i$

$g_i$  = subsidy to capital through differential income tax provisions to firm  $i$  (corporate income tax)

$r_i$  = annual real interest rate, including subsidies, facing firm  $i$

$d_i$  = annual rate of real depreciation of machinery, buildings, and so forth of firm  $i$

countries and even industries within countries, relatively sound data just at a highly aggregated level is hard to come by. Aggravating the situation are differences in the degree of capital utilization which itself influenced by a variety of factors like the day-shift/night shift wage differentials, capital intensity, scale of production, market structure, management, level of protection, location, age of plant, proportion of women in work force, consumer behaviour and other more qualitative determinants.

In an attempt to shed at least some light on the factors which engender differences in per unit costs of capital, be it between or among developing and industrialized countries, the ramifications of policy-imposed capital market distortions on the price of capital in developing countries and movements in the degree of capital utilization in industrialized countries are discussed in the next two sections. This is followed by two case studies; the first being an international comparison of production costs in primary textiles (Box 7), and the second aiming at the basic intent of this section, namely yielding evidence on the interaction between production costs, factor intensity and export performance, whereby Brazil is used as an example (Box 8).

## 2. Policy Imposed Capital Market Distortions

Analogous to the discussion of labor market distortions, with respect to relative costs of employing labor and capital (chapter III), there are three principal channels through which capital costs can be affected by policies in the capital market. First, the trade regime may be administered in ways that affect the relative costs of capital equipment to different users. Second, there may be interest rate subsidies and credit rationing that can affect the relative costs of labour and capital to different industries. Finally, the tax structure and special schemes for depreciation allowances can effect the relative profitability of labor-intensive and capital-intensive techniques.

Although there are always market imperfections due to information costs, transaction costs and other frictions associated with the process of economic growth, direct and indirect interventions into capital markets have played a major role in developing countries in comparison to industrialized economies. The relevant question is whether there have been any significant shifts in policies in the last twenty years thus systematically influencing the price of capital and thereby factor proportions between industries and countries. Of course, only major policy measures can be identified and correlated here to judge the direction in which they might have influenced the relative use of capital and labor in export activities. In turn, this could have been a significant factor in determining international competitiveness of products produced for the world market.

Especially under import substitution regimes which prevailed in most of the developing countries up to the mid - sixties and still are working in many of these economies, a variety of mechanisms can be identified through which the foreign exchange and trade regimes affect the overall capital cost relative to labor cost and also the relative capital cost to different industries. Perhaps the most important one is the use of a different (and lower) exchange rate for imports of machinery and equipment than for other imports. Very often this arises in the context of currency overvaluation, when most imports are subject to high tariff rates while capital goods imports enter on low rates of duty or even duty free. The implicit subsidization of imports of capital equipment can have different effects on the cost of using capital for those receiving import permits, depending on the allocation mechanism, the extent to which domestic capital goods industries are protected and the range of such goods. Implicit subsidization of capital goods imports has often tended to favour certain types of firms, namely large-scale and state-run firms in the organized sector of the economy. Although it may be that import substitution tends to offset the higher costs of production of those goods entailed by their comparative disadvantage it nonetheless can constitute an implicit subsidy both for capital-using industries and for the choice of capital-intensive technique.

In developing countries, the problem of low income and slow growth rates have been associated with a shortage of physical capital. To be specific capital scarcity encompasses two aspects, that is to say a country may lack physical capital, but it may also lack, or be unable to mobilize, the monetary resources to finance that capital. Many government policies in LDCs are designed to promote fixed capital formation so as to increase the stock of physical capital. Yet, apparently to ensure that finance is cheaply available, such policies are frequently accompanied by government regulation of interest rates in official financial markets. Since banks are often the sole official providers of credit to industry, these additional financial policies boil down to government regulation of bank interest rates which are then administered at artificial (i.e. mostly below equilibrium) levels (Table IV.1). In addition foreign borrowing was often cheapened by overvalued exchange rates.

The implications of such interest rate distortions for the export activities of the developing countries can be summarized as follows:

- the relatively high capital intensity of production, fostered by low interest rate policies especially in the seventies, may have resulted in a deterioration of competitiveness of exportables on world markets. This seems to have happened in most Latin American countries but also in the African development region and to a lesser extent in Asian countries (Table AIV.1);
- lower rates of interest have favoured imported investment goods. This was an incentive to decrease the share of domestically originating inputs and to apply a labor saving technology which was inappropriate given the abundance of unskilled labor in most of the industrializing countries. Excess capacities and a protection structure which provided additional shelter to the scarce factor, capital, were the inevitable consequences.

Table IV.1 - Real Rates of Interest<sup>a</sup> in Selected Countries, 1965-1982

Countries <sup>b</sup>	Rank in 1965	1965	1970	1973	1978	1982
<u>Industrializing Countries</u>						
1. Taiwan	(12)	10.7	5.3	-3.3	4.5	1.4 <sup>c</sup>
2. Korea, R.	(19)	2.8	4.5	8.2	0.9	-8.1 <sup>e</sup>
3. Brazil	(3)	-54.7	-2.5	5.4	19.6 <sup>d</sup>	20.3 <sup>d</sup>
4. Singapore	(6)	3.5	4.3	-5.1	4.3	2.4 <sup>c</sup>
5. Hong Kong	(4)	n.a.	n.a.	n.a.	n.a.	n.a.
6. China, P.R.	(2)	n.a.	n.a.	n.a.	n.a.	n.a.
7. Mexico	(7)	n.a.	n.a.	n.a.	-5.4	-51.8
8. Malaysia	(5)	4.8	3.9	-4.2	1.4	0.1 <sup>e</sup>
9. India	(1)	-4.3	0.7	-12.0	3.3	-4.6 <sup>e</sup>
10. Thailand	(14)	6.6	6.8	-8.8	-0.2	-8.4 <sup>e</sup>
11. Turkey	(16)	n.a.	n.a.	-12.8	27.6	17.2
12. Indonesia	(15)	n.a. <sup>i</sup>	11.5	-15.2	0.9	-9.5 <sup>e</sup>
13. Argentina	(8)	-24.4 <sup>i</sup>	-5.5	-45.2	-35.1	n.a.
14. Philippines	(9)	-3.0	-6.5	-6.3	4.7	-4.6 <sup>e</sup>
15. Pakistan	(11)	-2.8	0.6	-17.1	2.2	-2.4 <sup>e</sup>
16. Colombia <sup>f</sup>	(13)	4.3	-7.0	-6.8	n.a.	n.a.
17. Morocco <sup>f</sup>	(17)	-2.6 <sup>g</sup>	1.9	-0.7	1.4	5.5
18. Ivory Coast <sup>f</sup>	(18)	0.9	-5.5	n.a.	-7.5	2.1
19. Tunisia <sup>f</sup>	(21)	n.a.	n.a.	n.a.	n.a.	n.a.
20. Egypt <sup>f</sup>	(10)	n.a. <sup>h</sup>	n.a.	n.a. <sup>k</sup>	-4.5	-0.3
21. Kenya	(20)	0.6 <sup>h</sup>	2.1	-3.9 <sup>k</sup>	-7.6	-10.5
<u>Industrialized Countries</u>						
Germany, F.R.		3.9	4.9	2.3	3.1	4.6 <sup>h</sup>
Japan		2.0 <sup>c</sup>	-0.4	-4.4	2.3	5.6 <sup>h</sup>
United Kingdom		1.9	2.8	1.6	4.2	6.2 <sup>h</sup>
United States		1.9	3.6	-0.4	0.5	5.5 <sup>h</sup>

Table IV.1 continued

	1965	1970	1973	1978	1982
<u>Other Countries</u>					
in					
<u>Latin America<sup>b</sup></u>					
Peru	-6.9 <sup>c</sup>	2.0	-2.5	-26.3 <sup>d</sup>	-9.6 <sup>d</sup>
Uruguay	-80.6 <sup>c</sup>	-2.0	-9.0	47.2 <sup>d</sup>	n.a.
<u>Asia<sup>b</sup></u>					
Burma	-13.3	0.4	-20.9	16.4	9.7 <sup>c</sup>
Nepal	-5.0	-9.0	-4.2	4.0	-3.4 <sup>e</sup>
Sri Lanka	2.6	-1.6	-5.1	-1.9	-9.0 <sup>e</sup>
<u>Africa<sup>f</sup></u>					
Botswana	n.a. <sup>f</sup>	n.a.	n.a.	-4.2	-1.8
Cameroon	-2.8 <sup>f</sup>	-2.5	n.a.	-1.3	-10.1
Cape Verde	n.a.	n.a.	n.a.	-6.8	n.a. <sup>h</sup>
Gambia	n.a.	n.a.	n.a.	-5.2	-2.1 <sup>h</sup>
Ghana	-10.1 <sup>g</sup>	0.5	-4.5	-61.1	-111.4 <sup>h</sup>
Lesotho	n.a.	n.a.	n.a.	-2.7	6.4 <sup>h</sup>
Liberia	n.a.	n.a.	n.a.	-0.3	7.5 <sup>h</sup>
Nigeria	n.a.	2.8 <sup>g</sup>	-13.0 <sup>g</sup>	-13.3	0.3 <sup>h</sup>
Senegal	n.a.	1.8	n.a.	2.0	-3.6 <sup>h</sup>
Sierra Leone	-0.3	-2.0	n.a.	-3.9	-56.6 <sup>h</sup>
<u>Industrialized Countries</u>					
France	2.6	2.2	1.0	-0.1	4.6 <sup>h</sup>
Italy	2.4	5.1	-3.5	1.6	3.3 <sup>h</sup>

<sup>a</sup>Nominal interest rate as indicated minus yearly (actual) change of the consumer price index. - <sup>b</sup>Real rates of interest on 12-month time deposits. - <sup>c</sup>1981. - <sup>d</sup>Real rates of interest on 6-month time deposits. - <sup>e</sup>1980. - <sup>f</sup>Real rates of interest on savings deposits. - <sup>g</sup>1963. - <sup>h</sup>1983- <sup>i</sup>Real rates of interest on 6-month time deposits. - <sup>k</sup>Real rates on yields of public bonds. - <sup>l</sup>1966.

Source: Fischer (1982); Hanson, Neal (1984); IMF (1984); Wai (1972); Agarwal, Dippl, Langhammer (1985); Fischer (1986); Various National Statistics.

Lending rates, which in real terms were lower than the rates of return on the majority of projects requiring capital, additionally resulted in a crowding out of viable projects because of credit rationing. Thus, export diversification strategies have been impeded by wasting scarce resources. Instead of the market the administration has taken decisions on the allocation of the funds which might have been misleading because of distorted price signals. Although the inflow of equity capital for new export oriented and labor-intensive branches and the promotion of domestic savings are widely accepted targets for developing countries, just the opposite has happened. The inward-looking industries, as well as the relatively capital/import intensive ones, mostly financed through subsidized loans raised on local financial markets, received strong incentives from low interest rate policies in a number of developing countries. While some developing countries seem to have been aware of this incompatibility between interest subsidization and import diversification strategies and have started to liberalize their financial markets (efforts in this direction have been undertaken for instance in Taiwan, South Korea, Indonesia - see Table AIV.2 - and more recently in Turkey) most of the developing countries still impose high taxes on their exports through an inappropriate level of interest.

The effect of tax incentives on capital costs is straight-forward. Fiscal incentives, reducing taxes otherwise applied to various types of business income (such as tax holidays lasting several years, reduction of income or profit tax, tax exemptions or ceilings, loss-carry-forward provisions, allowances for accelerated depreciation, etc.) can also influence the choice of techniques. Perhaps the most notable for industrializing countries concerned tax holidays granted to firms in "priority" (or pioneer) industries. Because tax holidays are granted to non-labor returns only, these measures, which are generally intended to encourage the development of particular industries without regard to the choice of techniques within them increased incentives for using capital-intensive techniques.



Little empirical work has been undertaken to estimate the magnitude of capital market distortions or their influence on the on using capital used in production in developing countries. About the only piece of relatively systematic evidence is from twelve countries covered in the National Bureau Project on Alternative Trade Strategies and Employment<sup>1</sup>.

According to these studies exchange rate overvaluation, coupled with the reluctance of policymakers to tax imports of capital goods in a similar fashion to that of other imported goods, has been a significant factor in contributing to low capital costs under import substitution regimes; the subsidy implicit in the pricing of capital goods were estimated to be in the range of 30-40 p.c. For countries which fostered export promotion the picture is different. Undervaluation of capital goods was generally avoided by fairly realistically valued currencies.

In contrast to trade regimes, under which import substitution countries have lowered costs of imported capital equipment more than export promotion countries, the provision of low-interest loans to certain industries and credit rationing has been a feature of all countries. The implicit subsidy involved appears to have been substantial (exceeding the estimated magnitude of cost reduction with currency overvaluation in some cases) and constituted a major source of underpricing of capital services. In countries with more outward looking development strategies implicit domestic capital subsidies such as low-interest loans or preferential loans have been destined largely for some of the sectors associated with their export promotion drive (see Box 5 for Korea and Box 6 for Brazil).

While tax incentives for investment obviously have not played a significant role for investment decisions in developing countries (Galenson, 1984) either an overvalued exchange rate or availabi-

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<sup>1</sup> A synthesis and conclusions of these studies can be found in Krueger (1983).

lity of credit at below-market borrowing rates worked in the direction to induce lower capital costs and provided together with rising labor costs (resulting mostly from minimum wages and social legislation) strong incentives for use of capital-intensive production.

Box 5

Export Financing in Korea

Given the severe imbalance in Korea's external trade since the Korean War the government established an export-support financing system at the beginning of the sixties. This scheme offered preferential treatment in both the loan amount and the interest rate. Generally the scheme distinguished between short-term and long-term financing differentiating between various types of credit and specifying those eligible to obtain funds. Short-term financing in most loan types was extended for a period of three months and its main objective was to provide working capital for export production. The main objective of long-term financing was to convert existing industrial capacities suitable for export production as well as the importation of capital equipment required in export activities. These loans had an maturity up to 5 years and they were subsidized to a lesser degree than short-term finance.

Since the introduction of the scheme the largest share of the funds provided was short-term. This predominance of short-term loans stemmed from (a) the greater importance of operating capital (compared to investment capital), and (b) the greater importance of pre-shipment financing of exports over post-shipment financing of exports (Rhee, 1985, p. 93). As can be seen from Table IV.2 short-term finance as a share in total export credit declined continuously during the sixties but the lowest values it ever reached were still about 60 p.c. during the first half of the seventies. Measured as a share of total commodity exports short-term credit amounted to 16.6 p.c. on average of the period 1965 to 1970; between 1971 and 1978 this share was 17.0 p.c. on the average. Taking into account also long-term finance total export credit outstanding was 22.1 p.c. and 27.7 p.c., respectively of commodity exports on average of these subperiods. As a share in manufactured exports total export credit rose from 24.1 p.c. in 1965 to 46.5 p.c. in 1981.

Exports credits could be obtained at highly subsidized interest rates, especially in the period between the second half of the sixties and the early seventies. In the case of short-term financing the interest rate on these loans was just one-quarter of that of ordinary bank loans with similar maturity. In the mid-seventies this ratio had risen to one-half. Since the introduction of the export-support financing scheme also a considerable incentive was given to the commercial banks for granting export credits by offering them lower rediscount rates at the Bank of Korea. While the interest rate subsidy for exporters has been phased out in mid-1982, the incentive to the commercial banks remained in effect.

Within the total system of incentives provided to exporters, the interest rate subsidies on export credit played a substantial role. According to the calculations of Suh (1981) interest rate subsidies as a percentage of total export subsidies were highest

Table IV.2 - Export Financing in Korea, 1961-1978 (p.c.)

Year	Short-term credit on total export credit	Short-term credit on total commodity exports	Total export credit on total commodity exports	Total export credit on manufactured exports <sup>a</sup>	Interest rate subsidies on total export subsidies <sup>b</sup>	Short-term interest rate subsidy on total interest rate subsidy	Ratio of interest on short-term export credit to Central Bank loans <sup>c</sup>
1961	100.0	15.8	15.8	104.0	11.3	100.0	0.79
1962	100.0	24.9	24.9	135.1	5.0	100.0	0.72
1963	100.0	23.7	23.7	75.0	10.0	100.0	0.54
1964	93.3	9.7	10.4	24.2	7.6	97.1	0.50
1965	88.4	11.1	12.6	24.1	7.5	92.4	0.36
1966	81.5	7.2	8.8	15.4	9.1	88.4	0.25
1967	81.9	19.2	23.4	35.4	13.6	84.9	0.23
1968	68.8	18.6	27.0	36.6	14.4	76.4	0.23
1969	73.9	21.4	28.9	38.4	14.7	75.6	0.25
1970	69.2	22.1	32.0	42.6	15.4	75.1	0.25
1971	58.4	21.6	36.9	46.5	15.0	65.6	0.26
1972	59.7	16.8	28.1	36.0	9.4	66.3	0.34
1973	58.9	17.3	29.4	37.6	6.2	77.4	0.43
1974	59.2	20.1	34.0	45.5	7.0	73.2	0.57
1975	61.5	18.8	30.6	39.8	11.8	71.5	0.49
1976	65.2	15.6	23.9	28.9	11.6	68.7	0.45
1977	63.9	11.7	18.3	22.7	n.a.	n.a.	0.50
1978	70.8	14.4	20.3	24.3	n.a.	n.a.	0.49

<sup>a</sup>Defined as SITC 5 to 8 - (67 + 68). - <sup>b</sup>Including the export dollar. - n.a. = not available.

Sources: Suh (1981), Rhee (1985), UN, Yearbook of International Trade Statistics, various issues.

during the late sixties/early seventies (14.6 p.c. on the average between 1967 and 1971, see Table IV.2). Thereafter they declined in importance, amounting to 9.2 p.c. on the average of 1972 to 1976. Nevertheless, it could be shown that these subsidies were a significant determinant in explaining Korea's export performance at least in the period from 1965 to 1976 (Suh, 1981).

## Box 6

### Export Financing in Brazil

The Central Bank of Brazil currently operates two programs for the export financing of manufactured goods. With the Fund for Export Financing (FINEX) manufactured exports in the pre- and post-shipment stages are financed. FINEX financing is long-term financing with maturities running from three to eight years. Since 1972 it was by far the most important fund within the export financing operations of CACEX, the Foreign Trade Department of the Central Bank; in the early eighties the share of FINEX-finance in total CACEX export financing amounted to nearly 80 p.c. (Table IV.3). The rapid increase of FINEX in total CACEX export financing in 1972 coincides with the introduction of another export promotion scheme (BEFIEEX) in that year. BEFIEEX provides a package of enterprise-specific fiscal incentives for manufactured exports and it is highly concentrated in a few sectors (transport equipment, metals and machinery). The FINEX finance system had also a high concentration in a very few sectors; about 50 p.c. and 20 p.c. of the pre-shipment credits were concentrated in shipbuilding and railroad equipment, respectively, at the beginning of the eighties (World Bank, 1983, p. 63). A similar concentration was found also in the case of post-shipment finance: the main beneficiaries of these credits were in the sectors "car and road building equipment" (36 p.c.) and "construction equipment (13 p.c.). In all other cases no sector got more than 5 p.c. of FINEX post-shipment export credit (World Bank, 1983, p. 65).

Available information on FINEX export financing suggests that its main objective was to provide post-shipment credit. On the average from 1978 to 1980 FINEX-finance for sales (buyer's and supplier's credits) amounted to 78.3 p.c. of its total export credits outstanding while the share of working capital loans was just 16.1 p.c. (World Bank, 1983, p. 64). However, there is another main export credit program run by the Central Bank, Resolution 674, which aims at providing working capital loans for the production of manufactured exports. Exporters are entitled on the basis of their exports in the previous year or on their export commitments subscribed for the current year to receive working capital loans as a certain proportion of these exports (between 12 p.c. and 40 p.c. at the beginning of the eighties). On the average of 1975 to 1981 export credits under Resolution 674 amounted to 85 p.c. of the credit volume provided by CACEX. Neither loan amounts nor maturity (one year) have been related to actual financial needs and time periods of production. Rather the conceded percentage reflect government priorities and the desire to promote certain exports (World Bank, 1983, p. 65-66).

Export credits under the Brazilian export financing scheme have been heavily subsidized. In 1981 the interest rate on FINEX credits was 7.5 p.c. and 40 p.c. in the case of export credits under Resolution 674, while the Treasury Bill Rate - as a proxy for the short-term money market rate - was 88.7 p.c. In any case, given an inflation rate of 105.6 p.c. in 1981 the real interest

rate paid on export credits was highly negative. Within the total system of export incentives provided interest rate subsidies became of greater importance in the second half of the seventies. On the average from 1976 to 1978 they amounted to 14.9 p.c. of the total subsidies while between 1968 and 1975 the average rate was 6.7 p.c. (see Table IV.3).

As Table IV.3 shows total export credit financing has reached considerable importance in financing manufactured exports since the mid-seventies. In 1976 and 1977 total outstanding export credit as a percentage of manufactured exports amounted to over 100 p.c.; since then it has declined to 64.2 p.c. in 1981. Nevertheless, these percentages are considerable higher if compared with those in Korea and in the mid-sixties where this share since the beginning of the export drive never was above 50 p.c. Referring to short-term credit supply to the industry export financing has increased from 7 p.c. to 14 p.c. between 1975 and 1980. For the industrial sector as a whole this share seems to be small but given the high concentration of export credits it might have been substantial for specific sectors.

Table IV.3 - Export Financing in Brazil, 1970 - 1982

	Total CACEX credit out- standing	FINEX credit as p.c. of CACEX credit	Central Bank export credit	Total export credit outstanding as p.c. of				Interest rate sub- sidy as p.c. of total exp. susidies
	(1000 Cr-\$)	(p.c.)	(1000 Cr-\$)	total export		manuf. export <sup>a</sup>		
1970	657.948	17.1	-	5.2		53.0		7.5
1971	784.945	23.3	-	5.1		37.5		8.8
1972	976.396	53.7	-	4.1		24.4		8.0
1973	1.217.713	57.2	-	3.2		18.0		7.1
1974	2.113.258	69.5	-	3.9		17.6		6.1
1975	5.345.000	71.8	5.940.000	7.6	16.0	32.5	68.7	8.9
1976	13.020.000	60.1	10.995.000	12.0	22.2	58.0	107.0	13.1
1977	23.547.143	54.0	18.580.000	13.7	24.6	59.9	107.1	17.2
1978	32.695.000	62.3	27.905.000	14.3	26.5	48.1	89.2	14.4
1979	60.605.000	66.7	42.010.000	14.8	25.0	45.2	76.6	n.a.
1980	123.050.000	78.2	74.245.000	11.6	18.6	35.3	56.6	n.a.
1981	237.616.887	78.4	246.000.000	11.0	22.3	31.5	64.2	n.a.
1982	425.560.889	76.7	n.a.	11.8	n.a.	35.3	n.a.	n.a.

<sup>a</sup>SITC 5 to 8 - (67 + 68). - n.a. = not available.

Source: World Bank (1983).



### 3. Degree of Capital Utilization

The per unit costs of capital can also be significantly affected by the degree of capital utilization<sup>1</sup>. An increase in the utilization of equipment in manufacturing in the form of longer working hours per year and per unit of equipment may result (among other factors) from better management and/or from increased weekly hours attributable to additional shift work. The decision of a firm to use shift work or otherwise to lengthen its normal operating hours of capital depends on certain microeconomic considerations as well as on certain institutional and social factors. The greater the capital intensity of production, for instance, the greater the incentive to use shift work. Running extra shifts, however, may extend increases in marginal costs, the most important of which is labor, for which premiums are ordinarily paid for work on second or third shifts. Shift work is encouraged when the price of capital is high in relation to the price of labor, and the use of it depends also on the ease with which capital can be substituted for labor in response to a decline in the relative price of capital.

Unfortunately no comparable data are available to show either whether capital utilization was generally lower in industrializing or in industrialized countries nor if there have been any significant shifts in the degree of relative idleness of certain industries in the last twenty years. For instance, as a GATT (1966) study of textiles in 1964 suggested such developing economies as those of Hongkong and Taiwan used their capital equipment for longer hours annually than any of the industrialized countries. Further, a comparison of the degree of capital utilization

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<sup>1</sup> Although this is also true for the degree of capacity utilization, which tended to be lower in developing countries with import-substitution strategies than in economies with other trade regimes (Donges, Müller-Ohlsen, 1978, pp. 78-80), the unintended idleness of production capacities may be seen as mainly determined by short-term (demand) factors.

in textiles for Israel and the Philippines - also covered by the GATT study - with more recent data (Bautista et al., 1981) does not show any significant difference in the machine time worked during the years 1964 and 1972, respectively. Another comparison of the degree of capital utilization in spinning and weaving for 1981 (Table IV.4), however, still demonstrates substantial differences in the operating hours per year. Despite the variance in data variability, the available empirical evidence for industrializing countries clearly indicates that variability in levels of utilization are large and that there is considerable variation both between industries and within a given industry<sup>1</sup>.

Recent estimates for the USA reveal that the average annual rate of increase in the work week of capital between 1929 and 1976 was about 0.47 p.c. (Foss, 1984, p. 12). While from 1948 to the end of the 1950s, weekly hours changed relatively little, the rate of increase accelerated in the 1960s and then slowed down. The rise in weekly hours worked by plants thus has augmented a substantial increase in the stock of manufacturing capital; from 1948 to 1976 the lengthening in plant hours on an annual basis was about 12 p.c. of the annual increase in the stock of capital. The longer workweek appears to be a response to the increased capital intensity of production in the postwar years, relative price trends favoring the substitution of capital for labor and the desire on the part of the management to use capital more efficiently through multiple-shift work. This trend to multiple shifts was accompanied by - and was itself a cause of - the trend in manufacturing production away from small firms towards large firms. The process was also fostered in the USA by decreasing late-shift wage differentials in relation to straight-time wages over the past twenty years, which might reflect a changed attitude by labor toward working at night or a reduction in the real cost of

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<sup>1</sup> For an overview of empirical studies on the degree of capital utilization in developing countries see Winston (1984).

Table IV.4 - Degree of Capital Utilization in Spinning and Weaving for Selected Countries, 1981

Degree of Capital Utilization	Brazil	Germany	India	Japan	Korea	USA
Shifts per day	3	3	3	3	3	3
Operating hours per year	6 750	5 800	8 400	6 242	8 200	6 000

Source: ITMF (1981).

night work because of improved transportation and improved amenities available in factories. However, one has also to stress that the increase in the utilization of equipment in manufacturing in the form of longer hours per year and per unit of equipment was - according to the estimates made by Foss (1984) - much more due to better management than to increased weekly hours attributable to additional shift work.

While empirical evidence for an increasing degree of capital utilization in the last two decades could also be found for Japan (Hayes, 1981) recent empirical estimates for the Federal Republic of Germany led to the result that the average weekly working hours for fixed capital in the manufacturing sector have been decreasing between 1960 and 1984 from 67 to 61 hours per week (Schmidt, 1986a and b). Obviously the trend to shorten the weekly working hours for labor could not fully be compensated by increased mechanization and automatisations of the production process. The enforced removal of capital-intensive production lines from some European to Asian industrializing countries could thus at least partly be explained by efforts to maintain the international competitiveness, because capital can be more intensively used in these countries due to a greater flexibility in combining it with labor.

Although the findings of an increasing degree of capital utilization in the US-manufacturing sector over the last three decades cannot be generalized for all industrialized countries the future of shift work in those economies will heavily depend on the legislation to place restrictions on night work as well as on the trend of technological change. While, for instance, the development of large mainframe computers provided a strong incentive to economize on such capital through shift work, that incentive to economize is greatly lessened with the development of minicomputers. On the other side, robots, although still representing a tiny share in the capital stock of industrialized countries, have the potential for increasing shift work because they will greatly reduce the wage differential that must be paid for evening and night work. However, whether the trend of technological change will continue to be capital using and labor saving, as it seems to have been in the past, remains to be seen.

For industrializing countries the persistence of high real interest rates in the last few years have sharply increased the costs of capital. Increased levels of capital utilization could therefore be a potentially promising way to soften the harsh effects of rising real interest rates which have been about three times higher thus far in the 1980s than they were in the decade of the 1960s. A higher degree of capital utilization in these countries would not only allow existing capital stocks to serve as a substitute for new capital investment but also increase the productivity of new capital as it is installed.

Box 7

Production Costs, Factor Intensity and Export Performance:  
The Case of Brazil

According to Table II.1 Brazil could keep its export performance position among industrializing countries between 1965 and 1983 despite of a relatively dramatic increase in physical capital intensity of exported goods. The observation contradicts with Standard (Heckscher-Ohlin) trade theory which predicts a negative relationship between capital intensity, whether human or physical, and exports in a capital-poor and labor-rich country like Brazil. While policy imposed distortions both in capital and labor markets together with the development approach pursued may have favoured the establishment of capital-intensive industries, commercial policies could not be identified as the main determinant of the relative successful export performance of the Brazilian economy; it has been stated that the role of the export incentive system in the seventies has been little more than to neutralize the average disincentives provided by an overvalued exchange rate and the level of domestic protection (World Bank, 1983).

An alternative hypothesis relating capital intensity to export performance can be derived from industrial economics. If scale economies are a decisive factor in the allocation of output between foreign and domestic markets one would expect this factor to be more important, *ceteris paribus*, the more capital-intensive the techniques of production employed by the firm. Since investment in physical plant and equipment tend to be indivisible or "lumpy" a firm operating with capital-intensive techniques will tend to require a larger market to reduce average costs to a minimum.

Looking to the characteristics of the exporting firms in Brazil there is scattered evidence that a reduction of per unit costs of output by realizing economies of scale was achieved through expanding export activities: In fact, Brazilians manufactured exports have been concentrated in a relatively small number of big (frequently foreign owned) firms in highly concentrated industries using more physical capital per employee and experiencing higher factor productivity growth than non-exporting firms (Silber, 1983). Although export participation increased less than proportional with firm size because big firms sold a higher proportion in the domestic market than smaller ones this effect could be more than compensated when the firm was located in a concentrated industry. Confronted with a recession in the domestic market, for instance, these firms increased their exports to benefit further from low per unit production costs by being able to realize economies of scale. The findings that much of Brazilian manufactured exports have originated from foreign owned firms was found to be consistent with the fact that multinationals have a better knowledge of foreign market conditions, better distributional channels, service and sale organization which reduce the otherwise high fixed costs domestic firms are usually confronted with before starting with export activities (CEPAL, 1985).

## V. Summary and Concluding Remarks

At the outset of the preceding four sections it was stated that evidence was to be yielded on the interconnection between distortions in factor markets and performance in world trade. After noting where forecasts - made in the past - of today or the future did or will go wrong, i.e. by neglecting or underestimating the effectiveness of prices in allocating resources and serving as a signal to entrepreneurs (be they private or public)<sup>1</sup> where investments are relatively lucrative, evidence was presented on where distortions led to a poorer economic performance or where their removal produced positive economic benefits. While the results are not unequivocal in the sense that indisputable facts have been presented for the entire sample of countries, there was nonetheless no general evidence that a greater involvement by the state in influencing relative factor prices leads to a better performance in export markets.

As a matter of fact one of those countries long upheld as a prime example of how to develop quickly and efficiently with an open economy and relatively undistorted factor markets, Singapore, has clearly been experiencing the feedback of its own policies "to go against the market". That is to say, in 1979 the Government commenced policies to raise wages faster than (average) productivity so as to squeeze out those industries with low productivity levels<sup>2</sup>. It was felt that such industries should not remain in the City-State, where high-tech establishments were supposed to chart the future course of the economy.

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<sup>1</sup> It would be incorrect to assume that just because a company is state-run it follows different entrepreneurial principles than a private one - it is just a matter of ensuring that the same incentive structure exists.

<sup>2</sup> This policy also included specific reductions in the use of foreign laborers, since they were usually employed in the highly labor-intensive industries.

The above policy (along with other influences) resulted in a rapid shift in relative unit labor costs to the disadvantage of Singapore. This verdict is easily deduced from Table V.1. Thus having worked their way through the system the increased labor costs not only led to exports becoming less competitive, investment also fell off and GDP fell in 1985 for the first time in over 20 years<sup>1</sup>. The current outlook for 1986 is hardly any more encouraging as GDP is expected to decline still further. Although official reactions so far have been towards providing additional incentives and reducing taxes, it remains to be seen whether more sweeping reforms will instill the degree of flexibility into the system which Hong Kong still possess. Or rather whether the productivity increases are forthcoming to the same degree as in the case of Korea, which was even able to increase its competitive position over time.

Table V.1 - Singapore's Unit Labor Costs<sup>a</sup> Relative to Asian Competitors and Selected Industrialized Countries

	1980	1981	1982	1983	% Change exports 84/85
Singapore	100	100	100	100	- 5.1
United Kingdom	235	204	163	132	+ 7.4
Japan	135	132	111	107	+ 3.3
United States	131	128	122	109	- 2.2
Hong Kong	119	106	123	91	+ 6.6
Taiwan	110	113	98	88	+ 0.8
South Korea	85	75	72	68	+ 3.6

<sup>a</sup>Manufacturing

Source: Own calculations based on Far Eastern Economic Review, March 27, 1986 and GATT.

<sup>1</sup> Employment in construction and manufacturing suffered a decrease of almost 20%. Together the two sectors account for about one third of total employment in Singapore.

The problems encountered by Singapore's strategy to force a speedy restructuring of its economy according to a preconceived development path instead of merely ensuring that it can efficiently fulfill its potential role in the international division of labor, highlights the central issues surrounding the functioning of factor markets in light of changing or rather more rapidly changing comparative advantages. Drawing on the evidence presented earlier, Singapore's current tribulations should not be surprising but rather expected.

If, as in the case of Panama with its (per labor code) tightly restricted labor market, demand by the private sector for labor has been reduced to but a minor contribution<sup>1</sup>, then structural adjustment will occur via more capital intensive methods. What this implies for exports of manufacturers (assuming other countries do not intervene in labor markets to the same degree) is that they will become less competitive and more capital intensive. Knowing that Panama as well as many other developing countries do not have the same ease of access to capital they had before, this path is limited by financial constraints. To the degree that foreign capital cannot be attracted in the form of direct investment<sup>2</sup>, then investments will be reduced, activities shifted into labor intensive areas with lower skill levels dominated (e.g. personal services) or rather into areas where the impact of the regulations has been softened with government approval (i.e. in the offshore banking sector). Outside official activities the underground economy - free of policy-imposed distortions - will of course profit, but it can hardly be expected that the underground economy will be able to assume the role in foreign trade, which the official economy would. Given the impact of the Labor Code on growth, investment and exports to date

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<sup>1</sup> It should be remembered that 75% of the growth of employment in Panama from the early seventies to the mid-eighties was accounted for by the public sector.

<sup>2</sup> With measures like the Labor Code companies politely decline to invest, realizing how large the potential financial risk can become. That is, they critically evaluated the impact of not being able to flexibly adjust employment levels to production needs without effecting payments, which increase with seniority.



(see Panama Box) and in light of increasing employment problems, policymakers already have and will be forced to make decisions to loosen key regulations in order to be better prepared to react to shifts in world demand and production patterns.

Although this is concluded from Panama's experience, there are indications from numerous other countries, that distortions in factor markets are being reduced or at least increased attention is being given to their impact<sup>1</sup>. Thus minimum wages in Latin America and Africa have become subjected to benign neglect and not raised, extended or controlled to the extent this was done earlier. Likewise, policymakers are becoming aware of the impact of interest rate distortions and attempted in various countries to allow the scarcity of capital to better reflect the rate of interest charged and (in particular) given.

Unfortunately not all countries are blessed by the locational advantages which have contributed to Panama's relatively prosperous level of development and in the past veiled-over the underlying problems. It is therefore all the more necessary for countries like Bangladesh, which are blessed neither by locational advantages nor by natural resources and are on the bottom rungs of the development ladder, to realize how essential it is for factor markets to remain relatively undistorted and to allow entrepreneurs to tap the comparative advantages of the country. Although Bangladesh's economy is quite distorted they are already in the fortunate position of having learned what benefits can be forthcoming by allowing an industry (in this case the clothing industry) to efficiently produce for world markets. That they were successful was attested to by the quotas several industrialized countries - in particular the United States - imposed upon them.

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<sup>1</sup> Even in Taiwan efforts are being made to have labor laws changed to allow more flexibility.

Although there can be no doubt that Bangladesh's comparative advantages are in labor-intensive areas of production, there is a certain amount of hesitancy among some economists to recommend proceeding along a continuum known as a development path. First of all the above reaction by industrialized countries is interpreted as meaning that labor-intensive exports will be up against increased protectionism from developed countries. Secondly, the types of products manufactured usually contain only a nominal share of inputs from the domestic economy (i.e. basically wages) and thus are seen as providing but few impulses in the form of linkages. Third, production techniques for such items are in the process of shifting away from using low-skilled labor to incorporating robots and computer assisted assembly. All this means that such industries or rather even trade with industrialized countries leads down a path which does little to help a country increase the welfare of its citizens.

While it does seem to be true that protectionism has become a greater problem over the last years, generally speaking the share of developing countries's exports in consumption of industrialized countries has nonetheless been steadily increasing over time. Protectionism, as a matter of fact, even seems to have back-fired on those nations, which attempted to keep an efficient allocation resources from occurring. That is, those countries continually subjected to protectionistic measures, became more flexible and adept at shifting to different lines of production. Thus Hong Kong, which was recently hit particularly hard by new domestic content rules imposed upon them by the United States, has in the meantime restructured production and can now produce the same articles of clothing more competitively<sup>1</sup>.

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<sup>1</sup> The rule in essence barred clothing from being exported to the US from Hong Kong if it mainly consisted of components produced elsewhere and assembled in Hong Kong. This effectively barred the use of having some items e.g. produced in China to be sewn together in Hong Kong. The clothing industry (among other things) purchased automatic knitting machines to do the job and can now carry out the entire process at lower costs in Hong Kong (Asian Wall Street Journal, Jan. 3/4, 1986).

The fact that an allocation of factors of production in line with their relative scarcities can result in export industries with only low shares of domestic content, is not a disadvantage per se. It merely expresses the understandable condition that at low levels of development the necessary capital and human capital inputs are not available from domestic sources and that a strategy to rapidly generate them would imply using financial resources which could otherwise be put to more efficient use. In essence the argument against relying on such industries represents Singapore's attempt "to go against the market", the implications of which were explained above.

For sure there were many other countries which attempted to institute and carry out policies aimed specifically at increasing the domestic content of exports and moving up-market to less labor-intensive products. India and Brazil are two prominent but differing examples of such countries. Brazil, for instance, exhibited a strong export performance and a shift in factor intensities towards physical and human capital industries. India revealed the same shift but had a poor export performance. Aside from the fact that Brazil achieved a sizeable share of success by harnessing the exports of multinational corporations (in capital-intensive areas) they continued to export in labor-intensive areas as evidenced by their performance in manufacturing shoes<sup>1</sup>.

India, on the other hand, did not encourage foreign direct investments and made access to foreign inputs difficult. Its top position among the textile exporters in 1965 shrank to an also-ran in 1983, no doubt to a large degree due to lack of access to foreign machinery inputs. Thus while India may have succeeded in creating relatively high domestic contents in the products they produce the export performance does not bespeak of being compe-

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<sup>1</sup> From position 42 among all countries exporting shoes to the world in 1965 to number 10 in 1973, number 7 in 1978 and number 4 in 1983 Brazil built up a competitive, labor-intensive shoe industry by opening up access to duty-free imported inputs, loans and other export incentives (see Box 6).

titive in international markets. It would not be incorrect to state that they traded off the additional income they could have received by allowing labor and capital (plus foreign inputs) to be combined in an efficient manner for lower income but higher domestic content levels.

The final point concerning the impact of new technologies is not without a grain of salt, but to conclude therefrom that inefficient methods (i.e. not in line with factor intensities) of production should be instituted would hardly be correct. For sure the textile and now also the clothing industries have been engaged in major technological advances in recent years. Furthermore the highly labor-intensive electronic assembly industries are moving towards elimination of many tedious, low-skill, labor-intensive processes by using smart robots. However, the past has shown that although such leaps in technology cause temporary economic difficulties, the longer term has always accommodated the leaps without difficulty. It would therefore contradict all prior experience to assume that the present phase of applying computer technology to an ever increasing spectrum of production processes is a step in a new direction. Although such a major shift cannot be excluded, at present - and in the near future - at least this "danger" is not apparent.

Since the above evidence underlines the importance of maintaining a competitive position in foreign trade via allowing factors of production to be paid relative to their abundance in an economy, it is concluded that recent major advances in technology are best countered by ensuring that increased flexibility is promoted. If changes are occurring more rapidly now, then economies which attempt to nail down certain wage relationships or are intent on moving in one predetermined direction will find their economic well-being suffering, as world trade flows bypass them. By continually interacting with impulses from abroad and efficiently taking advantage of economic opportunities the validity of pessimistic forecasts made today about tomorrow will be just as wrong as they were shown to be in the past.

## APPENDIX I

### Indices of Effective Changes in Nominal and Real Exchange Rates and Exchange Restrictions

#### Background and Relevance

With the passing of the gold standard or rather the Bretton Woods System and concomitantly with the dawning of more flexible exchange rate adjustments, effective (i.e. weighted) changes in the value of a country's currency vis-à-vis the world or its trading partners became difficult to judge. Although this problem already always existed under fixed exchange rates, when inflation differentials caused real exchange rates to shift from officially pegged rates, it wasn't until discussion in the course of the sixties about mitigating/solving or reacting to balance of payments disequilibria generated the framework for indices of effective exchange rate changes (Hirsch, Higgins, 1970)<sup>1</sup>. The index was intended to "illustrate one particular influence - that emanating from exchange rate changes - on international competitiveness" (Hirsch, Higgins, p. 458). Later elaborations extended the concept to interface exchange rate changes with reaction parameters for individual countries within an exchange rate model in order to attempt to measure the total impact of such shifts after they interacted with the domestic and international economies (Artus, Rhomberg, 1973). Basically, however, most indices used today incorporate only the exchange rate changes with a weighting scheme and - in the case of real exchange rate changes - price indices.

Given the prime aim of such an index, namely to illustrate changes in international competitiveness, it is an essential link

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<sup>1</sup> For an overview of the problems connected with such indices, particularly as concerns their purpose, areas of use and interpretation, see Rhomberg (1976) and Maciejewski (1983).

in interpreting developments in domestic markets and comparing them with those in international markets. That is, an exchange rate which - in real terms - is allowed to appreciate by not adjusting for domestic price increases relative to other countries, will make exportables less and less competitive even if domestic factor markets have allowed relative scarcities to be reflected in relative prices. Hence performance in world trade will - *ceteris paribus* - be negatively influenced.

However, information about effective changes of real exchange rates per se is not always sufficient to allow domestic price developments to be related or correctly related to export trends. That is to say, the degree to which access to foreign exchange is restricted, complicated or even made more costly, can very well serve as a detriment to expanding exports (see e.g. comments in text on export financing). Although entrepreneurs often find ways of avoiding many such regulations, neither the time and resources invested in such activities nor the solution itself can be considered to be efficient and thus beneficial in permitting a country to tap its economic potential. Table AI.1 provides an overview of major types of measures which can act as such barriers.

### Method

The effective real exchange rate changes (ERERC)<sup>1</sup> used in this paper have been calculated by applying the formula on the page 86. It is similar to most other straight-forward ERERC formulas, differing basically in the weighting scheme (shares in world trade are used) and in delineating between exports and imports. The advantage of the former - as opposed to using only bilateral weights - is that the change in the total competitive position vis-à-vis all actual and potential trading partners is picked up. That is, the change in the relative prices is not limited to

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<sup>1</sup> Calculations for effective changes in the nominal exchange rate are much performed without price indices.

Table AI.1 - Overview<sup>a</sup> of Important Exchange Rate, Trade and Transaction Regulations/Restrictions: 1965-1984

Regulation/ Restriction	Special Rates for Capital/Invisibles	Import Rate Differ- ent from Export	More than One Rate for		Restrictions on Transactions:		Import Surcharges	Advance Import Deposits	Surrender of Export Receipts
			Imports	Exports	Current	Capital			
Year	65 70 75 80 84	65 70 75 80 84	65 70 75 80 84	65 70 75 80 84	65 70 75 80 84	65 70 75 80 84	65 70 75 80 84	65 70 75 80 84	65 70 75 80 84
Countries <sup>b</sup>									
Industrializing Countries									
1. Taiwan (12)					• • • • •	• • • • •	• • • • •	• • • • •	• • • • •
2. Korea, R. (19)					• • • • •	• • • • •	• • • • •	• • • • •	• • • • •
3. Brazil (3)	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •
4. Singapore (6)						• • • • •	• • • • •		• • • • •
5. Hong Kong (4)	•	•	•	•					
6. China, P.R. (2)					• • • • •	• • • • •		•	• • • • •
7. Mexico (7)		•	•	•	•	•	• • • • •	•	•
8. Malaysia (5)						• • • • •	• • • • •		• • • • •
9. India (1)					• • • • •	• • • • •	• • • • •		• • • • •
10. Thailand (14)						• • • • •	• • • • •		• • • • •
11. Turkey (16)	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •
12. Indonesia (15)	•	• • • • •	• • • • •	• • • • •		• • • • •	• • • • •	• • • • •	• • • • •
13. Argentina (8)	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •
14. Philippines (9)		• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •
15. Pakistan (11)	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •
16. Colombia (13)	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •
17. Morocco (17)		• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •
18. Ivory Coast (18)					• • • • •	• • • • •			• • • • •
19. Tunisia (21)		• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •		• • • • •
20. Egypt (10)	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •
21. Kenya (20)		• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •
Industrialized Countries									
Germany, F.R.					•	• • • • •		•	• • • • •
Japan									
United Kingdom	• • • • •				• • • • •	• • • • •			• • • • •
United States									

<sup>a</sup>A dot, i.e. a • - indicates presence of regulation/restriction in given year. - <sup>b</sup>The ranking of the industrializing countries is determined by value of manufactured exports in 1983. The number in ( ) is the ranking in 1965.

Source: IMF (a).

$ER^j ? = ER^j$

$$\begin{aligned}
 & \xleftarrow{\Lambda_1} \xrightarrow{\Lambda_2} \xleftarrow{B_1} \xrightarrow{B_2} \\
 & \left[ \begin{aligned} & \left( \frac{ER_{t+n}^j}{p_{t+n}^j} - \frac{ER_t^j}{p_t^j} \right) \cdot \frac{EX^j}{EX^j + IM^j} \\ & + \sum_{j=1}^m \left( \frac{ER_{t+n}^j}{p_{t+n}^j} - \frac{ER_t^j}{p_t^j} \right) \cdot \frac{EX^j}{EX^j + IM^j} \end{aligned} \right]
 \end{aligned}$$

exp  
 $\frac{1}{c} \cdot \frac{p_i^j}{p_i}$

imp.  
 $e \cdot \frac{p_i^j}{p_i}$



given trading partners (i.e. bilateral trade shares). The latter does justice to the simple fact that, e.g. after a devaluation, the price for exports - expressed in foreign currency units per domestic currency unit - decreases less than the price for imports - expressed as the reciprocal of the above. 2

The symbols in the formula represent the following variables:

$ERERC^i$  = effective real exchange rate changes for country i  
between time t and t + n vis-à-vis countries  
j = 1 ... m

ER = exchange rate

IM = total world imports<sup>1</sup>

$IM^i$   
 $IM^j$  = total imports<sup>1</sup> for countries i and j

EX = total world exports<sup>1</sup>

$EX^i$   
 $EX^j$  = total exports<sup>1</sup> for countries i and j

$p^i$   
 $p^j$  = export or consumer price index for country i and j.

The first part of the expression -  $A_1$  - represents the ERERC for exports of country i; the second part of the expression -  $B_1$  - represents the ERERC for the imports of country i.  $A_2$  and  $B_2$  are the export and import shares respectively for country i (% of sum of exports plus imports) with which both parts are weighted to produce ERERC for total foreign trade.

The 73 countries used in the calculations with the real exchange rates are listed on page 88. The results of the calculations see Table AI.2.

<sup>1</sup> Average for years 1970 and 1971.

The data has been taken from IMF International Financial Statistics. The base year from which all exchange rate changes were calculated is 1970.

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List of Countries in ERERC

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Industrialized Countries

Australia	France	Japan	Sweden
Austria	Germany, F.R.	Netherlands	Switzerland
Belgium + Lux.	Greece	Norway	United Kingdom
Canada	Ireland	Portugal	United States
Denmark	Israel	Spain	Yugoslavia
Finland	Italy		

Developing Countries

Algeria	Egypt	Kuwait	Saudi Arabia
Argentina	El Salvador	Liberia	Senegal
Bangladesh	Gambia	Malaysia	Singapore
Barbados	Ghana	Mexico	Sri Lanka
Bolivia	Guatemala	Morocco	Taiwan
Brazil	Honduras	Nicaragua	Tanzania, U. Rep.
Burkina Faso	Hong Kong	Niger	Thailand
Cameroon	India	Nigeria	Togo
Chile	Indonesia	Pakistan	Tunisia
Colombia	Ivory Coast	Panama	Turkey
Congo	Jamaica	Paraguay	Uruguay
Costa Rica	Kenya	Peru	Venezuela
Ecuador	Korea, Rep.	Philippines	

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Table A I.2 - Effective Changes in Nominal and Real Exchanges Rates<sup>a</sup> vis-à-vis 1970 for Selected Industrializing and Industrialized Countries: 1965-1983

Countries <sup>b</sup>	Nominal			Real Consumer Price Based			Real Export Price Based		
	1965	1973	1983	1965	1973	1983	1965	1973	1983
Industrializing Countries									
1. Taiwan (12)	- 3.42	9.49	63.49	4.93	-15.33	17.82	0.02	- 0.63	-12.84
2. Korea, R. (19)	11.63	-43.96	117.14	23.50	-34.73	-15.02	- 4.58	-10.42	-24.43
3. Brazil (3)	-	-	-	-13.06	-17.36	-61.14	0.98	6.55	-22.52
4. Singapore (6)	- 3.57	8.48	133.83	19.18	10.92	10.67	10.32	2.91	17.52
5. Hong Kong (4)	2.25	2.49	34.10	11.14	8.97	- 6.32	- 3.74	11.33	2.63
6. China, P.R. (2)	-	-	-	-	-	-	-	-	-
7. Mexico (7)	- 3.60	-14.74	-557.12	6.50	-12.31	-37.71	- 6.45	- 3.05	- 8.27
8. Malaysia (5)	- 3.51	8.70	100.36	19.69	4.13	1.80	19.66	11.03	24.95
9. India (1)	43.18	-17.55	-30.93	42.22	-12.06	-27.92	13.04	- 2.87	-18.81
10. Thailand (14)	- 3.58	-13.75	34.61	12.12	-13.53	1.35	5.80	8.32	-12.82
11. Turkey (16)	20.73	-37.72	-1119.86	24.36	-14.75	-48.75	12.93	7.33	-17.79
12. Indonesia (15) <sup>c</sup>	-	-	-	-232.34	-19.67	-10.89	-55.19	22.32	149.32
13. Argentina (8)	-	-	-	6.46	6.29	-17.11	- 4.26	40.46	-335.38
14. Philippines (9)	38.40	-28.60	-77.61	41.28	-10.29	- 6.29	- 3.15	- 8.96	-54.39
15. Pakistan (11)	- 3.55	-109.78	-107.03	2.88	-88.13	-71.90	5.41	7.80	-11.08
16. Colombia (13)	54.50	-41.22	-254.12	36.65	-18.53	9.03	-47.57	20.63	224.70
17. Morocco (17)	- 3.53	6.93	4.34	23.33	- 0.71	-28.18	14.75	10.84	- 1.79
18. Ivory Coast (18)	8.51	8.56	7.29	12.90	- 1.81	1.65	-14.23	- 0.91	-24.50
19. Tunisia (21)	- 3.57	8.23	13.04	9.90	1.14	-42.86	- 3.90	14.57	55.32
20. Egypt (10)	- 3.46	- 5.11	- 9.99	8.16	-15.33	-22.11	5.70	0.56	16.24
21. Kenya (20)	- 3.57	-12.51	-45.05	17.17	-13.19	-10.97	4.05	-10.72	6.15
Industrialized Countries									
Germany, F.R.	-24.12	20.92	147.84	6.82	18.21	- 1.34	- 8.51	10.86	-11.35
Japan	- 3.59	16.11	161.02	0.76	18.39	43.08	2.59	1.38	- 7.02
United Kingdom	13.55	-13.05	-10.82	22.40	- 6.94	5.71	- 1.15	-11.50	1.35
United States	- 4.10	-16.77	72.37	6.32	-23.82	- 8.69	- 6.02	-14.31	1.35

<sup>a</sup>A minus (-) sign indicates a devaluation. All changes vis-à-vis 1970. - <sup>b</sup>The ranking of industrializing countries is determined by value of exports in 1983. The number in ( ) represents the rank in 1965; for method and procedures see Appendix I. - <sup>c</sup>Data for 1966.

Source: Own calculations based on data from IMF.

## APPENDIX II

### The Factor Intensity of Exports - Background and Method

#### Background

The degree to which countries specialize in the production of goods in line with their posited comparative advantages is a key issue in international trade theory, because it determines whether the factors of production (assuming they are otherwise not influenced) are being efficiently allocated. Roughly speaking, an industrializing country, with no major supplies of natural resources and with labor more plentiful than capital, would be expected to specialize in labor-intensive methods of production. A high income country, on the other hand, would - given a relatively more abundant supply of capital than labor - be expected to concentrate on more capital-intensive methods of production. In the course of development (and simplifying international trade theory) production in a given country is perceived shifting to a more intensive use of factors of production whose relative supply increases and relative prices become more attractive. Hence, as wages increase due to a strong demand for labor, higher skills become sought after and more capital and/or human capital methods of production are installed. This is a never ending process, which basically describes the development path for industrializing as well as for industrialized countries (i.e. the development path is assumed to be a continuum). Although - as explained here - those cases where raw materials or highly research/technology intensive products are concerned have been neglected, their inclusion in essence merely broadens the concept factors of production, without changing the basic principles. It can be generally stated that most trade between market or mixed economies in the real world today follows such principles<sup>1</sup>.

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<sup>1</sup> One crucial condition in this framework is that between countries the relative position of an industry's factor intensity does not shift from being capital-intensive in one country to being labor intensive in another (i.e. factor reversals are excluded). Should such events occur it is often assumed that policy influences can be held responsible (such condition induce so-called policy-induced goods).

Given the above stated relevance in determining whether a country has allowed production to be efficiently structured, economists have invested considerable resources in attempting to analyze trade flows with respect to their factor intensity. From the first straightforward attempt by Leontief (1953), through Lary's (1968) extensive analysis of the proper approach to the most recent literature (see for instance Lee, 1986), the problem of how to measure the factor intensity of foreign trade is a key issue. Since many countries do not have data which allow factor intensities to be calculated from direct (and also indirect) factor inputs, substitutes must be found. The availability of the data has led many to resort to using value added per employee for physical capital intensity (as a substitute for physical capital assets per employee) and wages per employee for human capital intensity (as a substitute for more explicit skill indicators) - both based on Lary's analysis. Since often even such data is not available for the period under considerations, proxies of factor intensities for individual industries are drawn from a specific country where it is felt that factor prices and hence factor intensities roughly reflect factor endowments. The latter approach assures that the information on the crucial factor intensity side of the issue is on a strong statistical foundation - only the weighting scheme need be devised. This is usually based on the structure of trade and can be calculated relatively easily.

#### Method

The calculations on the factor intensity of exports presented in this paper are based on data from the 1980 US survey of manufactures. While the use of such data from a highly industrialized country hardly seems like an appropriate approach to determine whether the exports of a fledgling industrializing country correspond to its hypothesized comparative advantages, the method (as noted above) is legitimate, given adherence to some basic

conditions in mainstream international trade theory<sup>1</sup>. In this connection it is important to realize that the United States can be considered to be a relatively open country, where relative factor intensities are roughly in line with posited levels.

Although indigeneous factor intensities from each country would allow a direct read-out of the actual factor intensity for each individual country, such data unfortunately do not exist for all countries in the sample. Assuming the above assumption about the openness of the US, it was decided against drawing factor intensities from an industrializing country, where the impact of specific industrialization policies could more severely distort factor intensities from levels reflecting the factor endowment in the country. In using the US data it must thus be noted that the calculated factor intensities of exports only reflect the relative factor intensities based on the (e.g. industrial) structure of exports - no information about the actual (absolute) factor intensity of exports is revealed. This means that although the policy-induced shifts into certain (e.g. capital-intensive) sectors will be picked up, the actual induced factor intensities will not. Nonetheless the former bit of information is sufficient for this study.

To ensure that reality does not differ significantly from hypothesized relationships, factor intensities by industry from indigeneous data were calculated for Malaysia, the Philippines, Singapore and Taiwan (around 1973). The ensuing results were correlated (i.e. using Pearson correlation coefficients) with US data from the same period of time (i.e. 1973) and it was determined that - generally speaking - a highly significant correlation of at least .75 was engendered for at least one of the functional forms (see Appendix Table AII.1). With these results in mind it seems quite reasonable to assume that factor intensities from United States data sufficiently reflect "true" factor intensities in industrializing countries.

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<sup>1</sup> In other studies India, Japan and the Benelux countries have been used.

Table AII.1 - Pearson Correlation Coefficients between US Capital Intensities and Capital Intensities of Selected Asian Countries<sup>a</sup>

	Capital Intensities Based on Indigeneous Data			
	Malaysia	Philippines	Singapore	Taiwan
US Capital Intensities:				
Simple form	.869	.719	.861	.774
Log form	.816	.815	.808	.744

<sup>a</sup>US, Singapore and Malaysian data from 1973; Taiwan is from 1976 and the Philippines from 1975.

Source: Own calculations based on national sources.

The two indicators used - physical capital intensity (capital assets/employee - CAPINT) and human capital intensity (wages/employee - HCINT) - are in line with standard procedures. Although some adjustments have to be made to the US data to make it comparable with standard ISIC definitions, the disaggregated level of the data permitted this without difficulty (see Table AII.2). The indices were calculated for a year towards the beginning of the period 1965-1983 (i.e. 1968) and for one towards the end (i.e. 1980). The factor intensity indicators were then multiplied with the export shares of the 28 industries (excluding 353 and 354 - see Table AIII.2) in total exports of the 28 industries. These factor intensities were then rebased relative to the United States to allow conclusions to be drawn about relative performance over time. Although primarily 1980 figures were used throughout the study, the 1968 figures portray almost the same pattern and can be supplied upon request. The basic reason for applying the 1980 data was its relevance for current trends.

<sup>1</sup> As noted in Section II in the text, SITC data were converted into ISIC data for all countries. The authors are fully aware of the problems associated with using data run through a SITC-ISIC concordance. The results throughout the study are thus interpreted with caution.

Table AII.2 - Factor Intensities of US Manufacturing Industries: 1968 and 1980

ISIC Code and Description	Physical Capital Intensity <sup>b</sup> CAPINT		Human Capital Intensity <sup>c</sup> HCINT	
	1968	1980	1968	1980
311/				
312 Food Manufacturing	12351	27831	6303	14629
313 Beverage Industries	19379	57543	7226	18371
314 Tobacco Manufactures	11733	41586	5351	18017
321 Textile Manufactures	8917	20353	5057	11326
322 Clothing	1662	3575	4434	8687
323 Leather Prods. Ex Footwear	3408	6969	5076	10268
324 Footwear	1613	4096	4549	8919
331 Wood, Cork Prods.	9063	23143	5469	12758
332 Furniture, Fixtures	4179	9401	5448	11267
341 Paper, Paper Prods.	25872	65619	7387	18138
342 Printing, Publishing etc.	8291	16304	7334	14919
351 Industrial Chemicals	61145	134188	8659	21371
352 Other Chemical Prods.	23803	39952	7862	18353
353 Petroleum Refined	120998	319777	9579	26709
354 Petrol, Coal Prods.	19106	133400	7618	18667
355 Rubber Prods.	13080	32026	7602	16841
356 Plastic Prods. N.E.S.	10154	25528	6052	13228
361 Pottery, China, Earthenware	11573	60444	6020	16162
362 Glass, Glass Prods.	15473	40918	7031	17212
369 Nonmetal Mineral Prods.	23662	37497	7092	16089
371 Basic Iron, Steel Inds.	32627	69007	8439	22758
372 Nonferrous Metal Inds.	21547	51109	7786	19166
380 Cutlery, Tools, Hardware	9314	18359	7103	15731
381 Metal Prods. Ex Machinery	9066	21084	7323	16277
382 Machinery Ex Electrical	10488	21842	7980	18500
383 Elect. Machinery, Supplies	6804	17971	7333	16532
384 Transport Equipment	8993	25768	8909	21933
385 Precision, Optical Equip.	8151	19196	7505	17325
390 Other Manufactures	5204	12688	5710	12527
Average	12407	29710	7097	16387

<sup>a</sup>The reader is referred to the respective UN publication for complete industry description. <sup>b</sup>Fixed assets/employee in US\$. - <sup>c</sup>Wages/employees in US\$.

Source: Own calculations based on US Department of Commerce (1972, Table 1; 1982a, Tables 2 and 5; 1982b, Table 2).



Table AII.3 - Factor Intensity<sup>a</sup> of Non-oil Manufactured Exports to the World from Selected Industrializing and Industrialized Countries: 1965-1983

Countries <sup>b</sup>	Physical Capital Intensity <sup>c</sup>				Human Capital Intensity <sup>d</sup>			
	1965	1973	1983	% Change 65-83	1965	1973	1983	% Change 65-83
Industrializing Countries								
1. Taiwan (12)	96.6	73.3	80.4	-16.7	86.9	83.9	88.2	+1.5
2. Korea, R. (19)	103.1	82.2	87.7	-14.9	88.4	86.1	93.1	+5.3
3. Brazil (3)	109.6	106.2	124.0	+13.1	89.1	88.3	97.7	+9.7
4. Singapore (6)	119.7	105.3	89.8	-25.0	95.5	95.6	96.4	+1.0
5. Hong Kong (4)	73.5	67.7	64.2	-12.6	83.2	83.4	85.7	+3.0
6. China, P.R. (2)	96.2	93.4	91.8	-4.6	86.2	84.9	85.7	-0.6
7. Mexico (7)	113.2	104.2	99.9	-11.7	92.4	94.3	96.9	+4.9
8. Malaysia (5)	155.4	134.9	99.5	-36.0	102.6	96.7	94.4	-8.0
9. India (1)	93.5	96.6	114.1	+22.0	80.0	83.0	88.1	+10.1
10. Thailand (14)	115.6	109.6	96.7	-16.3	90.0	89.1	88.5	-1.7
11. Turkey (16)	95.0	97.4	110.5	+16.3	87.0	85.0	90.8	+4.4
12. Indonesia (15)	149.9	133.2	125.1	-16.6	99.3	96.9	98.0	-1.3
13. Argentina (8)	97.0	96.9	103.2	+6.4	86.3	90.5	90.3	+4.7
14. Philippines (9)	93.6	100.9	87.2	-6.9	85.3	89.1	88.3	+3.5
15. Pakistan (11)	73.2	106.8	84.5	+15.4	71.7	79.3	76.9	+7.3
16. Colombia (13)	88.3	98.3	93.4	+5.8	85.5	86.6	88.1	+3.1
17. Morocco (17)	108.2	97.9	124.0	+14.6	90.8	87.5	93.0	+2.4
18. Ivory Coast (18)	86.2	87.2	88.9	+3.2	85.9	86.1	86.1	+0.3
19. Tunisia (21)	126.1	126.1	113.3	-10.2	92.8	94.8	90.7	-2.3
20. Egypt (10)	91.5	95.1	108.6	+18.7	75.6	78.8	82.7	+9.4
21. Kenya (20)	100.4	103.1	94.7	-5.7	85.9	87.1	88.4	+2.9
Industrialized Countries								
Germany, F.R.	109.1	107.9	105.3	-3.5	101.1	100.4	100.4	-0.7
Japan	109.7	106.3	93.4	-14.9	97.7	101.1	99.7	+2.1
United Kingdom	106.8	109.6	108.6	+1.7	99.9	100.0	101.0	+1.2
United States	100.0	97.5	96.3	-3.7	100.0	100.6	101.2	+1.2

<sup>a</sup> For method of calculation see Appendix II. Following these calculations the actual factor intensities in US\$ were - for the year 1965 - expressed in % of the 1965 factor intensity for the United States. That is, the year 1965 represents the factor intensity of exports of a given country relative to the United States. The values for the years 1973 and 1983 are all relative to 1965 so that the development of each country can be individually followed over time. - <sup>b</sup> The number in ( ) represents the ranking within the same set of countries in 1965. The ranking in this table is determined by the total value of non-oil manufactured exports in 1983. - <sup>c</sup> 1980 capital assets/employee; in 1,000s of US dollars. - <sup>d</sup> 1980 wages/employee; in 1,000s of US dollars.

Source: Own calculations based on trade data from UNCTAD and factor intensity data from the US Department of Commerce (1982a and 1982b).

Table AII.4 - Factor Intensity<sup>a</sup> of Non-oil Manufactured Exports to Industrialized Countries from Selected Industrializing and Industrialized Countries: 1965-1983

Countries <sup>b</sup>		Physical Capital Intensity <sup>c</sup>				Human Capital Intensity <sup>d</sup>			
		1965	1973	1983	% Change 65-83	1965	1973	1983	% Change 65-83
Industrializing Countries									
1. Taiwan	(12)	79.2	67.2	73.9	-6.7	83.3	83.2	87.5	+5.0
2. Korea, R.	(19)	91.4	77.3	80.4	-12.0	84.1	85.4	91.5	+8.8
3. Brazil	(3)	107.3	107.8	120.4	+12.2	87.9	87.8	96.0	+9.2
4. Singapore	(6)	146.6	93.6	79.0	-46.1	96.4	94.6	96.5	+0.1
5. Hong Kong	(4)	68.3	64.5	61.0	-10.7	82.1	83.1	85.4	+4.5
6. China, P.R.	(2)	98.4	82.9	88.8	-9.7	86.9	80.0	84.8	-2.4
7. Mexico	(7)	111.0	100.9	94.4	-15.0	92.2	94.2	96.6	+4.8
8. Malaysia	(5)	157.1	122.6	91.9	-41.5	104.2	95.6	95.6	-8.3
9. India	(1)	93.5	97.8	115.7	+23.8	79.0	81.0	86.5	+9.5
10. Thailand	(14)	133.4	109.7	98.5	-26.1	92.7	90.3	89.1	-3.8
11. Turkey	(16)	95.7	97.5	94.8	-0.9	88.3	85.9	84.8	-4.0
12. Indonesia	(15)	147.9	116.2	129.4	-12.5	98.4	95.3	100.8	+0.4
13. Argentina	(8)	94.4	91.2	102.5	+0.2	86.1	86.7	90.5	+5.2
14. Philippines	(9)	93.0	100.2	85.4	-8.1	85.6	89.4	88.3	+3.1
15. Pakistan	(11)	61.4	82.8	80.9	+31.7	69.4	74.9	75.9	+9.4
16. Colombia	(13)	84.6	92.8	90.4	+6.9	85.1	84.9	87.6	+3.0
17. Morocco	(17)	109.9	92.5	101.6	-7.6	92.0	86.9	89.0	-3.2
18. Ivory Coast	(18)	85.1	85.1	84.7	-0.4	85.9	85.4	84.9	-1.2
19. Tunisia	(21)	117.5	120.4	91.6	-22.1	91.4	93.9	87.0	-4.9
20. Egypt	(10)	81.9	86.5	105.7	+29.1	76.2	74.7	84.0	+10.3
21. Kenya	(20)	83.8	82.1	82.2	-2.0	83.4	83.3	84.4	+1.2
Industrialized Countries									
Germany, F.R.		106.6	104.9	102.9	-3.4	101.1	100.3	100.4	-0.7
Japan		105.5	93.8	82.6	-21.7	99.9	99.8	100.8	+0.9
United Kingdom		106.8	108.9	107.6	+0.7	99.9	99.8	100.8	+0.9
United States		100.0	96.5	96.3	-3.8	100.0	100.6	101.9	+1.9

<sup>a</sup> For method of calculation see Appendix II. Following these calculations the actual factor intensities in US\$ were - for the year 1965 - expressed in % of the 1965 factor intensity for the United States. That is, the year 1965 represents the factor intensity of exports of a given country relative to the United States. The values for the years 1973 and 1983 are all relative to 1965 so that the development of each country can be individually followed over time. - <sup>b</sup> The ranking of the industrializing countries is determined by value of manufactured exports in 1983. The number in ( ) is ranking in 1965. - <sup>c</sup> Capital assets per employee (1,000 US\$) from 1980 US data. - <sup>d</sup> Wages per employee (1,000 US\$) from 1980 US data.

Source: Own calculations based on trade data from UNCTAD and factor intensity data from US Department of Commerce (1982a and 1982b).

Table A III. 1 - Overview of Types of Free Economic Activity Zones

Type of Zone	Specifics (1); Delineation (2a); Application (2b); Expected impact (3); Examples (4)
Duty/tax free areas, free ports, bonded warehouses	<ol style="list-style-type: none"> <li>1. Tariffs, import taxes and indirect taxes not applied.</li> <li>2a. Locational delineation.</li> <li>2b. Applies to goods entering domestic custom area or entering entering with a delay.</li> <li>3. Serves transshipment/storage and processing/manufacturing of goods.</li> <li>4. Free port in Hamburg, bonded warehouses in Bangladesh and Malaysia, free trade zones in U.S. and other similar facilities in many countries.</li> </ol>
Duty/tax free sales	<ol style="list-style-type: none"> <li>1. Tariffs and indirect taxes eliminated.</li> <li>2a. Delineation based on object of economic activity.</li> <li>2b. Applies to persons living abroad and/or going abroad.</li> <li>3. Increases domestic sales and - to the extent the domestic goods are concerned - domestic production.</li> <li>4. Duty free shops at airports or in special stores (e.g., Philippines), rebates for tourists at borders.</li> </ol>
Free banking zones	<ol style="list-style-type: none"> <li>1. Elimination of minimum reserves requirements, interest rate regulations, exchange controls, etc.</li> <li>2a. Delineation based on object of economic activity.</li> <li>2b. Applies to foreign customers or to customers accessing foreign markets.</li> <li>3. Increases international competitive position of domestic banks or makes country more attractive for foreign investments.</li> <li>4. Euromarket banks, i.e., Luxembourg, London, New York, Panama.</li> </ol>
Free insurance zones	<ol style="list-style-type: none"> <li>1. Elimination of restrictive, state-imposed insurance regulations.</li> <li>2a. Delineation based on object of economic activity.</li> <li>2b. Applies to foreign customers.</li> <li>3. Increases international competitive position of domestic insurance companies.</li> <li>4. Lloyds of London, New York Free Insurance Zone.</li> </ol>
Free trade zones; export processing zones	<ol style="list-style-type: none"> <li>1. Elimination of tariffs, direct/indirect taxes, distortions export in factor/financial markets and bureaucratic red tape.</li> <li>2a. Locational delineation.</li> <li>2b. Applies to production of products to be exported.</li> <li>3. Promotes economic development of a country via increased employment/labour incomes, technology/know-how transfer and demand for domestic inputs.</li> <li>4. Bangladesh, Shannon (Ireland), Malaysia, South Korea, Sri Lanka.</li> </ol>
Free economic activity zones	<ol style="list-style-type: none"> <li>1. Elimination of taxes, tariffs, important distortions.</li> <li>2a. Locational delineation.</li> <li>2b. Applies to all research development, production and end-use activities in a zone.</li> <li>3. Promotes economic development in an otherwise distorted economy.</li> <li>4. The closest example would be Hong Kong.</li> </ol>

Source: Spinanger (1985).

Table AIV.1 - Price Distortions<sup>a</sup> and Export Growth of Selected Developing Countries in the 1970s

Countries by Region	Growth Rate of Export Volume (p.c., p.a)	Factor Capital	Pricing Labour	Exchange Rate	Composite Distortion Index
Asia					
Korea	23.0	M	L	L	1.57
Thailand	11.8	L	L	L	1.43
Indonesia	8.7	M	L	L	1.86
Malaysia	7.4	M	M	L	1.57
Philippines	7.0	M	L	L	1.57
India	3.7	M	M	L	1.86
Pakistan	1.2	L	M	M	1.86
Bangladesh	-1.9	H	H	L	2.57
Sri Lanka	-2.4	M	H	L	1.86
Latin America					
Mexico	13.4	H	M	L	1.86
Chile	10.9	H	L	H	2.43
Argentina	9.3	H	H	H	2.43
Brazil	7.5	H	L	L	1.86
Uruguay	4.8	H	L	H	2.29
Peru	3.9	H	M	L	2.29
Colombia	1.9	M	L	L	1.71
Bolivia	-1.6	H	L	H	2.29
Jamaica	-6.8	H	H	M	2.29
Africa					
Malawi	5.7	M	L	L	1.14
Tunisia	4.8	M	L	L	1.57
Ivory Coast	4.6	M	H	L	2.14
Nigeria	2.6	H	M	H	2.71
Cameroon	2.5	M	M	L	1.57
Senegal	1.2	M	M	M	2.29
Egypt	-0.7	M	H	L	1.86
Kenya	-1.0	M	M	L	1.71
Ethiopia	-1.7	L	L	L	1.86
Tanzania	-7.3	H	H	L	2.57
Ghana	-8.4	H	M	H	2.86
Near and Middle East					
Turkey	1.7	H	M	L	2.14

<sup>a</sup>H = High, M = Medium, L = Low. - <sup>b</sup>Includes also indices for other distortions in foreign exchange and product pricing.

Source: Agarwala (1983).

Table AIV.2 - Pricing of Bank Credit, Loan Restrictions and Exchange Controls in Selected Asian Countries  
with Steps Towards Financial Liberalization

Country	Pricing of Bank Credit	Credit Allocation/Preferential Lending	Exchange Rate Controls
South Korea	- Lending rates still fixed by govt. but from Nov. 84 rates may be set within a narrow range (10 % - 11.5 %)	- Preferential credit allocation by banks stopped Nov. 84, but preferential rediscounting still available from Central Bank.	- Exchange controls remain in force. Capital flows highly restricted.
Taiwan	- Legal maximum lending rates set by Bankers' Ass. of Taipei (floors and ceilings; "Prime rate" system of March 85 permitted 5 big banks to vary lending rate within narrow range.	- Central Bank offers extensive preferential accommodation for export financing, etc.	- NT \$ not convertible for residents. Exchange controls remain in force, capital flows restricted.
Hong Kong	-	-	-
Malaysia	- Oct. 78: Bank lending rates freed, except to priority sectors; Nov 83: Base lending rate introduced.	- Annual guidelines for founding priority sectors still enforced; 1984 (1982): 31 % (51 %) of loans to priority sectors.	-
Singapore	- July 75: Bank lending rates freed from fixing by Ass. of Banks	- 1974 -75 = Selective credit controls directives on loan growth and sectoral allocation abolished 1975	- June 78 = Exchange control abolished
Thailand	- Legal interest rate ceilings still apply; Jan. 83. = Bank lending ceiling lowered for first time (to 17,5 % from 19 %); March 83: "Prime rate" introduced for overdrafts at more favourable rates; 1984: Preferential lending rates apply to priority sectors	- Banks of Thailand supplies concessionary credit (e.g. for foreign exports; 1983/84 = Bank credit growth restricted to 18 %.	- Foreign exchange control largely in abeyance.
	-	- June 83: Credit ceilings on all commercial banks (State, private, national and foreign) lifted.	-

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