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DEMOCRATIZATION, ENDOGENOUS MODERNIZATION, AND INTEGRATION: STRATEGIC CHOICES FOR LATIN AMERICA AND ECONOMIC RELATIONS WITH THE UNITED STATES

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DEMOCRATIZATION, ENDOGENOUS MODERNIZATION, AND INTEGRATION: STRATEGIC CHOICES FOR LATIN AMERICA AND ECONOMIC RELATIONS WITH THE UNITED STATES.*

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INTRODUCTION

This essay pursues two main goals: First, it draws attention to some of the major challenges which Latin America will have to face in the next decade. These include: imbalances in the domestic productive structure and accumulated social needs; the fact that the international market, which in the past encouraged and supported growth, is becoming--at least in the short- and medium-term--an obstacle to domestic economic dynamism; and the possible implications which industrial and technological restructuring under way in developed countries may have for Latin America. Second, the paper argues that the concepts of "democratization" and "endogenous modernization" constitute bases, starting from the present economic and political crisis, for articulating new development strategies which will make it possible to meet the grave challenges facing Latin American countries in the next decades. These developments hold important implications for the future of Latin American-United States' relations.

A necessary point of departure for this analysis is an understanding of the specific characteristics of the present international situation and, consequently, of relations between Latin America and the United States. Forecasting economic relations between the United States and Latin America is a significant intellectual challenge even in normal circumstances. If the task is approached with a minimun of rigor, it is necessary to formulate assumptions in at least the following five areas: (1) the domestic political-economic evolution of Latin American countries and the United States; (2) the foreseeable evolution of East-West relations, both in advanced capitalist states and among Latin American countries; (3) the evolution of the world economy; (4) the principal technological trends at the international level; and finally, (5) the impact of developments in each of these areas on economic relations between Latin America and the United States.

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*The opinions expressed in this article are the author's exclusive responsibility and do not compromise the institution in which he works in any way.

This intellectual challenge is now substantially more difficult due to the fact that the present situation constitutes, in each of the different aspects mentioned above, a point of inflection for trends experienced during the post World War II period. Under present circumstances, "extrapolation of trends" is an unsuitable methodological approach. In order to make projections, it is necessary to interpret, and in order to interpret, it is necessary to have a theory. But at present, in both politics and economics, perplexity and theoretical impotence have to a considerable extent replaced the credibility and consensus which at other times emanated from "accepted scientific proofs".

In the political field, this perplexity is expressed in the upsurge of alternative manifestos in which a vocation for social engineering predominates over political sensitivity. On the one hand, there are proposals which seek to reconstruct the social and political conditions prevailing in the golden decades of the nineteenth century, when a group of "Schumpeterian" businessmen led the transformation of economy and society. Other proposals invite European and American societies to emulate the "Japanese miracle," adding to it the technologies of the twenty-first century. Yet it is unlikely that it will be possible to dismantle the "welfare state" constructed over the last several decades so long as democratic practices remain in force. Neither is it easy to imagine a politico-cultural shift which would lead the workers of Ford, Renault, or Phillips to assemble every Monday morning in order to sing their respective firm's anthem--even if the ministries of Industry and Trade in each country were transformed into a copy of Japan's Ministry of Trade and Industry (MITI). History and comparative experiences are without a doubt a fertile source of inspiration for conceiving utopias, particularly in moments of crisis. But is is indispensable to incorporate into these discussions the cultural and political particularities of the societies in question. The "Manchesterian" and "Japanese-technological" utopias described above do not fully meet this requirement.

Nor is the future of East-West relations likely to present easy alternatives. From an optimistic perspective, recent developments suggest that the arms race will continue indefinitely. But from a pessimistic point of view, these same events mean that humanity may be approaching what could be its final mistake.

In the economic field, the increasingly somber vision provided by quantitative indicators is accentuated by the inability of available economic theory to provide a clear interpretation of what is happening and, consequently, plausible ways of overcoming the current crisis. Moreover, there is a widespread conviction that the international financial system requires modifications as substantial as those which national financial structures experienced in the 1930s. There is also a growing consensus that the international economic system is currently experiencing a transition toward a new technological-industrial pattern in which the relative weight of different sectors, countries, organizational frameworks, and productive modes is substantially modified. This panorama may explain the melancholy of

successive economic projections made by international organizations for the next decade. Recent trends suggest that the most pessimistic scenario may well be the most probable.

For the first time since 1945, the gross domestic product fell throughout Latin America in 1982. The majority of Latin American countries were unable to pay their external debt, regardless of the size of their domestic market, the availablity of oil and other natural resources, or their strategies for penetrating the international market. Zero-order economic growth has been predicted for the period 1981-1983. Latin America's population will grow by at least 10 percent during this period, further aggravating already high levels of urban and rural poverty. The domestic economic and social implications and international financial dimensions of these trends are obvious, and they explain why a consensus is beginning to emerge that Latin American countries should reformulate and significantly redefine the development strategy they have followed over the last several decades. At this juncture, the international crisis and the accumulation of domestic economic imbalances in different Latin American countries coverge.

If this discussion has accurately described the current international situation, it is obvious that future United States-Latin American economic relations can pose only limited and modest objectives. In addition to recognizing the fundamental perplexity of the current situation, this essay examines three dimensions of United States-Latin American economic relations: (1) the domestic economic challenges which gave rise to the development strategy Latin American countries have followed in the last several decades; (2) the outlook for the international economy, which played a positive role in Latin America's past growth but will constitute an important future restraint; and (2) the principal international technological trends. The conclusion synthesizes these foreign and domestic challenges, and it suggests directions for new development strategies. Democratization and endogenous modernization are possible axes for a new development strategy in Latin America.

LATIN AMERICA'S DISJOINTED INDUSTRIALIZATION AND THE PROBLEM OF ACCUMULATED SOCIAL NEEDS[1]

Latin America's industrialization has without doubt played a decisive role in the precarious and peculiar modernization of the region during the last several decades. This industrialization process differed from country to country according to the structure and orientation of the traditional exporting sector, the size and degree of heterogeneity in the domestic market, and the character of international economic ties. Industrialization began in some Latin American countries at the end of the nineteenth century; it intensified during the Great Depression and after World War II. From the 1930s through the 1950s the significance of industrialization extended well beyond particular sectors. To a considerable extent it constituted the center of gravity for development strategies.

Moreover, industrialization became the banner for various social movements which, despite national particularities, shared a commitment to modernize their countries (Aguirre Cerda in Chile, Cardenas in Mexico, Haya de la Torre in Peru, Peron in Argentina, and Vargas in Brazil).

Following this period of urbanization, the 1970s witnessed growing frustration with the consequences of industrialization. This in turn, has produced an inclination to address the deficiencies of industrialization by rejecting it entirely. In this sense, industrialization is passing from a privileged position to one of widespread re-examination. A better understanding of the specific characteristics of industrialization in Latin America helps explain this shift in perceptions.

In examining Latin America's past economic performance, three groups of countries reflect the heterogeneity of conditions and strategies in the region. They also constitute a basis on which to delineate central elements of the debate on future development strategies, particularly industrialization strategies. These groups of countries are: Brazil and Mexico; Argentina, Chile, and Uruguay; and the members of the Central America Common Market.[2]

During the past three decades Latin America has grown at a more rapid pace than the world economy as a whole (5.5 percent and 4.9 percent annual growth of gross national product (GNP), respectively, between 1950 and 1977), surpassing both the United States and Western Europe (3.6 percent and 4.3 percent respectively). Only Japan and the centrally planned economies experienced more dynamic growth (8.6 percent and 7.3 percent, respectively). However, when one considers population growth the region's relative position in terms of per capita output eroded significantly; its per capita growth rate over this same period was slower than that of the world economy as a whole (2.6 percent and 2.9 percent, respectively), and it lagged behind both Western Europe (3.6 percent) and Asia (2.7 percent). Rapid population growth is a peculiarity of Latin American development. Between 1950 and 1975 Latin America's population grew more rapidly than any other region in the world; it doubled in twenty-five years, whereas world population grew less than 60 percent, and that of the developed countries only slightly more than 30 percent. In 1963 Latin America's population was approximately 20 percent more than that of the United States; in 1979 this ratio had risen to 60 percent, and by 1995 the region's population is expected to be more than double that of the United States.

As in other areas, the industrial sector in Latin America has grown at a more rapid pace than the economy as a whole.[3] The relative weight of the manufacturing sector rose from 18 percent of the region's gross national product in 1950 to 24 percent in 1977, a level similar to the 25 percent observed in the United States. During this period of rapid expansion, in terms qualitatively similiar to industrialization processes in other regions, the industrial sector transformed

itself internally and modified other productive activities. It absorbed labor from the agricultural sector and contributed inputs and equipment for agricultural modernization; it encouraged the developments of service activities necessary for the production, marketing, and financing of industrial goods, which acted as a futher incentive to industrial expansion; it urbanized and modified the transportation and communications infrastructure and it influenced, both directly and indirectly, the orientation and growth of the public sector--directly through its physical and education infrastructure requirements and indirectly through the social transformation produced by economic growth (expressed in terms of development of trade unions, political parties, consumer organizations, and other social groups which influenced the expansion and orientation of the public sector.)

The industrialization process assumed different dimensions and forms in different countries in Latin America. Brazil and Mexico experienced the most rapid industrialization in the region (8.5 percent and 7.3 percent annual growth of industrial production, respectively, in comparison with 6.8 percent for the region as a whole). Argentina, Chile and Uruguay (4.1 percent, 3.7 percent and 2.7 percent, respectively) stand at the other extreme. These latter three countries--whose industrialization was initially advanced and later frustrated--generated 41 percent of Latin America's total industrial output in 1950, but in 1978 their share fell to 20.5 percent. Brazil and Mexico, large countries undergoing rapid industrialization, increased their share of Latin America's industrial output from 42.1 percent to 61.8 percent during the same period. Whereas in 1950 Brazil and Mexico generated an industrial output similiar to that of Argentina, Chile and Uruguay combined, in 1978 the industrial output of these latter countries represented only a third of that of Brazil and Mexico.

Argentina, Chile, and Uruguay are characterized by a significantly lower rate of demographic growth and a higher degree of urbanization than other Latin American countries. Consequently, a smaller proportion of their population is engaged in agricultural activities. Despite a slower rate of growth (which is also reflected in the fact that their investment coefficient was consistently lower than the regional average between 1960 and 1978), estimates for 1970 indicate that there was less poverty in these countries than in the rest of the region. Indeed, whereas some 26 percent of the region's total urban population was below the "poverty line" in 1970, the corresponding proportions for Argentina, Chile, and Uruguay were 5 percent, 12 percent, and 10 percent, respectively. Similarly, some 62 percent of Latin America's rural population was below the poverty line, while only 19 percent was in Argentina, 25 percent in Chile, and practically none in Uruguay.

The contrast between these three countries' premature development and then arrested industrialization, and Brazil and Mexico's post-World War II industrial dynamism is remarkable. Brazil, whose economic transformation and industrial modernization leads the region,

suffers from some of the most severe poverty in all of Latin America: 35 percent of Brazil's urban population is below the "poverty line", whereas the proportion is only 25 percent for the region as a whole. This proportion is 73 percent in rural Brazil, versus 62 percent for the region. In Mexico, the same poverty indicators are not far below the regional average. No matter how much Brazil and Mexico may have improved living conditions during the 1970's, it is clear that a significant percentage of the population has received little benefit from industrial modernization.

The economic dynamism of the small countries which comprise the Central American Common Market is striking. Between 1950 and 1978 their economic growth rate was higher than that of the region as a whole, and comparable to that of Brazil, Mexico, and Venezuela. Despite the reservations and qualifications which apply to GNP growth as an economic indicator, this fact does qualify somewhat the stereotypes which are generally held regarding Central America. The prevalence of such uniformed views in part accounts for the perplexity caused at the international level--and even in Latin America by recent social and political movements in Central America.

One manifestation of Central America's disjointed and precarious "modernization"--though, in the final analysis, still modernization--is the region's rapid process of urbanization. The region's urban population grew from 16 percent to 43 percent of the total population. In 1980, Nicaragua was the most urbanized (54 percent) country in the region. Costa Rica, the most urbanized country in Central America in ____ (26 percent, versus 16 percent for the region as a whole) also increased its urban population to 46 percent in 1980.

During the same period the proportion of economic output stemming from the primary sector in Central America dropped from 38 percent to 27 percent for the region as a whole. Secondary activities raised their share of regional output from 15 percent to 24 percent with the highest proportions being reached in Costa Rica (28 percent) and Nicaragua (27 percent). During this period of rapid industrial growth, there was also a significant increase in life expectancy, development of transportation and energy infrastructure, and a decline in illiteracy from 61 percent to 43 percent for the region as a whole. The most dramatic example was Costa Rica, where illiteracy fell to only 10 percent in 1975.

Growth, urbanization, and precaricus industrialization in Central America coexist with urban and rural marginality. These developments fostered the expansion of middle-class sectors tied to a burgeoning state bureaucracy and commerical and professional activities. They also produced a new urban bourgeoisie with interests in modern agro-industrial activities, industry, trade, banking, and real estate, as well as an industrial proletariat limited in size but well aware of both its relative leverage and the persistence of powerful agricultural interests in traditional export sectors. Central American society has thus undergone important changes in recent decades which were not reflected in national political struc-

tures. The contradiction between increasing social complexities, the magnitude of accumulated needs, and closed political structures (Costa Rica is the exception) called forth the symbiotic alliance between powerful economic groups and the armed forces. These tensions became increasingly intense over time, until they finally burst to the surface in the late 1970s.

In addition to relatively rapid industrialization, Latin America has experienced sectoral shifts within manufacturing activities which are apparently similar to those observed in developed countries including the increased importance of consumer durables, chemicals, and light engineering products. Thus Latin America formally reproduced those trends which proved functional to the transformation of production in developed countries, where the satisfaction of basic consumer needs for non-durable goods encouraged the expansion of durable goods industries and their increasing diversification; the scarcity of natural resources, combined with access to cheap oil, fostered the substitution of synthetic products for natural ones, which in turn stimulated the rapid growth of the chemical industry; the intensification of international competition and trade union pressure on wages encouraged automation and increased the demand for machines and equipment. Ironically, then Latin America--a region with significant unsatisfied basic needs, a generous endowment of natural resources and abundant and unemployed labor--has pursued an industrial pattern which was congruent with conditions prevailing in developed countries.

This development strategy is largely dysfunctional with respect to the needs and potentialities of Latin American countries. Among it's most striking consequences is income concentration, which has reached critical levels in the more advanced countries in the region. The most revealing cases in this regard are Brazil and Mexico, where economic dynamism, domestic market size and diversification of production reached their highest levels in the region. After three decades of rapid growth in these two countries (which will be difficult to reproduce in the future), the top 10 percent of the population controls five times the wealth of the lowest 40 percent. Indeed, the industrialization-urbanization process has raised the income of a significant proportion of the population, while holding a high proportion of the agricultural and marginal urban sectors at former income levels. Therefore, the distance between the two extremes has become wider. This may be due more to the specific characteristics of industrialization in these countries and its precarious articulation with the agricultural sector than to any inherent tendency of industrialization to concentrate income.

Rapid population growth and historically inequitable patterns of income distribution in Latin American countries have undoubtedly affected the results of the industrialization process. However, these factors do not themselves explain its essential characteristics. The discussion which follows attempts to explain why the effects of industrialization in Latin America have been so different from those in the advanced countries.

As noted above, Latin America's industry is precariously and asymmetrically linked to agriculture. In contrast to the industrialized countries' development pattern, the production of basic foodstuffs for the domestic market in Latin America--and the peasant population on which this production is based--has been subject to systematic political and economic neglect. With the exception of Argentina and Uruguay, (where the principal export products are also basic foodstuffs for domestic consumption), this has resulted in the systematic erosion of the foreign surplus generated by the agricultural sector and a growing external deficit in industrial machinery and other inputs required by the agricultural sector. This problem has coincided with an expanding external deficit in the industrial sector, in precisely those activities experiencing most rapid growth: automobiles, chemical products, and capital goods. These activities are all dominated by the firms, which in their home countries generated the trade surplus which advanced countries enjoy in these manufactured goods.

In addition to the problems associated with a precarious articulation between industry and agro-industry, energy programs in Latin America are often dysfunctional in terms of the resources available to the region. Although only one Latin American country has been a important oil exporter in the past several decades (Venezuela), the region has relied on this energy source to a greater extent than other areas of the world. In 1925, liquid fuels represented 13 percent of world sources, while in Latin America this proportion had already reached 57 percent. By the end of the 1960's the proportion had risen to 40 percent in the world, while in Latin America it exceeded 70 percent.

One of the clearest expressions of disarticulated economic structure and the absence of creative development strategies in Latin America is the relatively small size of the capital goods sector. Even though there is a significant production of capital goods in the larger countries, the "endogenious creativity" of such goods is minimal. The backwardness of the capital goods sector is largely responsible for the industrial sector's trade deficit and is the principal structural component of the current financial crisis. For Latin America as a whole, the capital goods and transportation equipment activities produced almost half of the manufacturing sector's external deficit in 1955; that proportion rose to 62 percent by the end of the 1970s. In the specific case of Mexico, the trade surplus generated by petroleum exports between 1978 and 1982 was less than the capital goods sector's trade deficit.

The backwardness of the capital goods industry is closely linked to the overall characteristics of Latin America's pattern of industrialization in recent decades. Indeed, a central element in Latin American countries' industrialization policies has been largescale but indiscriminate investment. This required a setting in which the cost of investment was as low as possible, which was achieved in part by encouraging capital goods imports. The objective of this policy was to encourage the production of non-durable consumer goods first,

and later the production of intermediate goods. But to do this, national production of machinery and equipment--which in its initial phase would have meant higher investment costs--was sacrificed. The available data show that the level of tariff protection granted to the capital goods industry is significantly lower throughout Latin America than that for other industrial activities.

This situation was further aggravated by the characteristics of demand and supply in the capital goods industry. On the demand side, it is useful to distinguish among public enterprises, the subsidiaries of transnational corporations, and private national firms. Public enterprises have been constrained in the acquisition of domestically manufactured capital goods by financial considerations. Public sector decentralized firms in much of Latin America run a deficit in their capital account, which is due to the structural fact that public enterprises' pricing policies are intended to subsidize the purchase of the goods and services they produce. This deficit in the capital account is balanced by access to international financing, which experience shows is often associated with the import of capital goods. Consequently, structural and financial elements have limited the public sector's opportunities to play a dynamic role in the promotion of locally-produced capital goods. This situation is fundamentally different from the role that public enterprises have played in the growth of the capital goods industry in developed countries, where there has been close commercial and technical collaborations between public enterprises' demand requirements and the supply of manufactured products by large private firms, often on the grounds of national interest. This has been the case, for example, in the energy, communications, and transportation sectors and the armaments industry. Such collaboration has been a central characteristic in the development of these industries.

The subsidiaries of transnational corporations are major consumers of capital goods in Latin American countries. Their acquisition of machinery and equipment generally corresponds to the corporation's global policy in this area. In certain cases the equipment and machinery they use is specially designed for them and patented by the user firm (for example, in the automobile, food processing, and pharma ceutical sectors). The importation of capital goods is one means of actually making direct investment in the host country. Moreover, because subsidiaries are often responsible for products in the final phase of the production cycle, the machinery and equipment required for their production are transferred from industrialized countries to developing nations. For reasons such as these, demand by subsidiaries of transnational corporations does not constitute a major incentive for the local production of capital goods, despite the fact that these firms represent a high proportion of total demand for such goods. This situation contrasts sharply with the role of such firms in their home countries.

Finally, because local firms are generally small- and medium-sized enterprises, the financing available to them for the acquisition of capital goods becomes a decisive factor in determing their demand

for such products. Financing arrangements offered by local manufacturers are generally significantly less attractive than those available on the international market. Thus domestic private firms' overall demand for locally-produced capital goods is substantially reduced.

On the supply side, it is also important to distinguish between national and foreign producers. Foreign producers initially exported capital goods to the Latin American market from manufacturing plants located in their home countries. As long as that possibility was open producers' motivation to establish manufacturing facilities in Latin American countries was limited, due to local industrial policies, the frequent absence of adequate technical infrastructure, and the fragmentation of limited local markets among a large number of international suppliers. However, as some Latin American markets began to close due to rising local protectionism and the decision by some firms to establish plants in the host country (usually expanding from the local repair installations which are indispensable in this sector), other firms felt compelled to safeguard their market position by making a similar move. These firms sought to limit the effects of this policy on their export market by producing locally only the simplest kinds and smallest sizes of equipment. For foreign producers, local manufactures made sense only when access to markets was at risk.

For national producers the capital goods sector constituted one of several investment opportunities. The factors mentioned above also meant that it was less profitable, more exposed to international competition, and focused on more demanding buyers encouraged by structural factors to make their purchases abroad. These considerations, combined with the apparently greater technological complexity of this sector, encouraged private national capital to seek investment opportunities in other sectors. The production of capital goods is thus of relatively marginal interest to firms whose main commitments are in other activities.

Even though limited market size in the smaller Latin American countries has constrained the manufacture of mass-produced capital goods, this is a minor factor in explaining the backwardness of capital goods production in the region. First, similar problems exist in countries whose domestic market is significantly larger than that of the smaller western European countries, which are major producers in the international capital goods market. Second, minimum plant size and economies of scale are relatively low for a wide range of non-serial capital goods activities established in different Latin American countries, including cement, iron and steel, petrochemical products, automobiles, synthetic fiber textiles, and various agro-industrial products. Third, regional industrial projects in small (Central America) and medium-sized (the Andean group) Latin American countries have larger economies of scale than those required by the majority of capital goods manufacturing processes.

Instead, the factors which explain the weak development of the capital goods sector in Latin Ameria have to do with the general pattern of industrialization and the structural and institutional

factors already mentioned. These factors channel potential demand toward other countries and discourage potential suppliers from undertaking local production. From this perspective, it is highly significant that the capital goods import coefficient increased during the period of rapid economic growth in Brazil and Mexico when official economic policy gave high priority to the development of this sector. Given the technological innovation which is associated with capital goods industry, the technological backwardness of many Latin American countries is to a large extent due to the failure to develop this sector. It is unlikely that this problem can be solved merely by formulating measures designed to encourage research and development activity at the level of the firm, and to regulate the transfer of technology from abroad. Rather, change must occur in those factors shaping the overall character of industrialization.

In addition to the growing external deficit generated by "disjointed" industrialization and the systematic erosion of the agricultural sector's surplus (which in countries such as Mexico has actually become a deficit), Latin America has suffered since 1973 from a huge bill for petroleum imports. This burden is associated with the productive structure, and thus with development strategy. It is aggravated by debt servicing obligations contracted in an effort to compensate for structural deficits and the financial drain associated with direct foreign investment. Ironically this investment has played a leading role in those rapidly growing industrial sectors, which define the domestic production profile. Its dynamism reflects the relative weakness of national industrial entrepreneurs.

The presence of foreign firms in national industry is not limited to Latin America. What is unique to the region is the magnitude of that presence: the inefficiency of the productive structure which foreign investment has shaped; and these firms' use of manufacturing processes which lack technological complexity. In short, foreign firms' local actions reflect little input by domestic actors. They are motivated principally by microeconomic considerations and a spirit of conquest. They are concentrated in the most dynamic economic activities sectors as they are in their home countries. However, the effects of their presence in Latin America are quite different. Whereas transnational firms are the main source of trade surplus in their home countries in Latin American host countries they often account for a large share of the nation's trade deficit.

There is a second important difference between these firms' performance in Latin America and in their home countries. When firms compete in industrialized countries on the basis of product differentiation, the "destruction" of existing commodities and its effects of the use of productive resources are off-set by the "creation" of new commodities, designs, production techniques, equipment, and marketing mechanisms. All these activities help maintain the dynamism of the productive process. The process of "creative destruction" described by Schumpeter is fully developed. The subsidiaries of these corporations operating in Latin America also employ new products, processes, equipment, and advertising techniques. However, with

very few exceptions (not including advertising), the "creative" phase of these activities is not carried out locally. Whereas the leading oligopolistic firms generate technological innovation in their home countries, in Latin America their subsidiaries utilize (and therefore amortize) research expenditures made several years before in their respective home country.

This argument does not overlook the existence of national private and public sector enterprises in Latin America which have shown that they possess all the "Schumpeterean attributes", including the potential for technological innovation. These groups exist, and some of them have become well-known internationally. The essential point is that their industrial initiatives have not been decisive, as they were in several southeast Asian countries, especially Japan.

This "finding" obviously does not explain the cause of this phenomenon. To do so would require a detailed analysis of the historical origins of different social formations in Latin America, as well as the role played by different social and economic agents in the formation and development of nation-states in the region. The weakness of the drive for industrialization refers specifically to the character of the "endogeneous nucleus" of Latin American industrialization. Different countries in the region have given priority to industrialization since the 1930s and 1940s; and the results achieved are well known. What has been lacking is a strong industrial vocation--effective leadership capable of developing an endogenous industrial potential so as to adapt, innovate, and compete internationally across a significant range of economic sectors. The fact that Latin Americans frequently blame the inadequacies of the industrialization process on transnational corporations overlooks the responsibility shared by the national business sector (public and private) and other social forces which in their formulation of domestic policies in different periods, have failed to establish effective bases for Latin American industrialization.

One characteristic of Latin American industrialization is the high tariff protection accorded to industrial activities. In Japan, the country which has achieved the most notable success in post-war industrialization, high protective barriers fostered a learning process by national business groups linked with the state. Industrial strategy focused on those chemical and light engineering activites which enjoyed dynamic growth in demand. Imports were first replaced by local products. Then, as innovations were made, Japan undertook selective integration of national industry and prepared to penetrate international markets. Its targeted export markets included the United States, the main source of technological inspiration. In other words, protection served an industrialization strategy oriented toward the future conquest of the international market; it was a "learning" protectionism. In Latin America on the other hand, domestic protection sheltered an indiscriminate, small-scale reproduction of industries found in advanced countries. These activities were disjointed in their capital goods components. Moreover, they were led by subsidiaries of transnational firms whose perspective was alien to local conditions, and whose innovations not only were made

principally in their home countries, but were also of limited utility beyond their own narrow requirements. This might be called "frivolous" protectionism.

It is obvious, then, that domestic protectionism also cannot explain differences in industrialization patterns betwen Latin America and countries such as Japan. Although they shared high levels of protection, these two strategies differed substantially in terms of their conceptualization of industrialization, the agents which led the process, and the application of selectivity and temporal perspectives. The weakness of Latin American industrialization is due to a more complex set of factors. High indiscriminate tariff protection and the large-scale presence of transnational corporations reflect the weakness of the national business sector, rather than causing the inefficiency which characterizes this group. The elimination of protectionist barriers will not in and of itself produce efficiency.

The level of domestic protection in Latin America has largely been determined by the rate of profitability obtainable in activities not exposed to international trade, such as construction trade, and finance. The most powerful private national business groups concentrated their investments in these activities. When they sought to diversify into industry, it was pefectly "rational" for them to seek equally high profit margins. This would explain the paradoxial situation that industrial sectors, whose leading firms were transnational enterprises (which one could hardly justify protecting by the "infant industry" criterion), for decades enjoyed high, indiscriminate levels of protection. Excessive protection encouraged the fragmentation of the productive structure and subsequently became necessary to guarantee its survival. Thus it is understandable that economies sheltered by "frivolous protection" failed to produce industrial exports in proportion to growth in total output.

It follows that an analysis of Latin America's present financial crisis must consider both external factors (examined in more detail in the following section) and the structural characteristics of the industrialization strategy followed to date. Specifically, the weakness of the external sector is closely linked to the dominant pattern of industrialization: the precaricus leadership of the automobile industry, plus shortcomings in the production of capital goods; the asymmetrical relationship between industry and agriculture; and disfuctional patterns of energy use. These factors explain the external deficit and, consequently, the cause of external indebtedness. Overcoming these external weaknesses will necessarily require the transformation of the industrial sector, its relationship with agriculture, the pattern of energy consumption, and the financing mechanisms on which it is based.

Thus the pattern of Latin American industrialization--far from being a temporarily distorted image of industrialization in developed countries--suffers from serious limitations. It does not address the needs of a large share of the population, and it is incapable of taking full advantage of creative opportunities and abundant natural

resources. The neo-liberal response by southern cone countries is a compulsive search for a "Manchesterian utopia." It seeks to address the problems of Latin American industrialization by questioning its existence, withdrawing to an international division of labor in which Latin American countries would be resigned to simple export of natural resources. Not only does this approach fail to resolve accumulated social needs, it intensifies them by structurally discouraging national creativity.

THE INTERNATIONAL MARKET AND LATIN AMERICA: A SOURCE OF PAST DYNAMISM AND FUTURE CONSTRAINT

There is little doubt that the transformation of production in Latin American countries--especially in those whose rapid growth permitted them to penetrate industrialized countries' markets for manufactured goods in the 1960s and early 1970s--contributed to the expansion in global industrial production (at an average rate of 6.1 percent) between 1950 and 1975. This transformation also contributed to the growth in international trade (8.8 percent per year) and even more accelerated increase in direct investment (slightly over 10 percent per year) during the same period. These developments were soon followed by the internationalization of financing activities and, after 1974, by the recycling of "petro dollar" surpluses. These shifts in financing made it possible to prolong the economic dynamism of Latin American countries beyond what growth in the industrialized countries, international trade, and domestic savings would have allowed. Necessary domestic structural reforms were replaced by external indebtedness.

The magnitude of Latin America's contemporay financial crisis an the desperate search for short-term solutions have apparently reduced analysts' interest in understanding the link betwen the erosion of the industrial dynamism of the 1950s and 1960s and the crisis of the 1970s. The first section of this essay examined some of the structural factors which tied the development strategy pursued in Latin America in recent decades to current imbalances in the foreign trade sector. This section discusses the relationship between the "exhaustion" of developed countries' industrialization process in the late 1970s and the economic crisis of the 1970s.[4]

Among those factors explaining the developed countries' rapid industrial growth in the post-World War II period, the most important were; the availability of a technology stock produced between the 1920s and World War II; the influence which the United States' model of consumption and industrial organization exerted on the other developed countries; the availability of a skilled labor force and business capacity which, despite the partial physical destruction of their industrial assets, remained present in these countries (especially in Japan and West Germany); the "pull" factor which the spread of consumer durable goods and the substitution of synthetic products for natural ones projected throughout the industrial system; the response of the capital goods sector, which incorporated, multiplied, and

diffused technical progress throughout the whole productive apparatus; access to energy sources whose already low relative price actually declined duing this period; and the modernization of the agricultural sector and its integration into the industrial structure. During these decades of rapid economic growth the "growth-technical progress-international trade-growth" cycle acquired particular dynamism. This had an especially invigorating effect on the capital goods sector.

These countries' loss of economic dynamism in the late 1960s was due to the weakening of the factors discussed above, as well as to the appearance of obstacles or barriers caused by that growth. For example, labor scarcities begin to appear in the 1960s as a result of rapid economic growth. This situation strengthened the position of trade unions, whose national unity was further favored by international detente and the fact that wages had begun to rise more rapidly than productivity. Although with differing intensity, all the industrialized countries experienced this shift.

The imitative spread of consumer durable goods and automobiles also began to show the inevitable signs of market saturation. Pessimistic predictions concerning the future consumption of automobiles stand in marked contrast to the dynamic forecasts of the earlier period. Similar changes occurred with the replacement of natural products by synthetic ones. Together with the increasing relative weights of wages and taxes (associated with public sector expansion during the period of rapid growth), the market saturation of those sectors which sparked the industrialization process produced declining profits. This pressure intensified due to technological change which, accompanied by modifications in the sectoral structure of industry, was expressed in a fall in output-capital ratios.

From the moment at which economic dynamism began to slow, productivity growth also declined. This situation varied in intensity from one country to another, but the same trend appeared in several industrialized states after 1969. This tendency, plus the fact that the sectoral heterogeneity of industrial productivity is greater than the range of wages, reinforced the trend toward wage increases rising more rapidly than productivity. This fueled inflationary pressures. The slowdown in economic growth and the drop in productivity caused increased idle capacity and discouraged innovation, thereby consolidating the trend. These tendencies and the precaricus outlook for future growth encouraged the appearance of protectionist pressures, which reduced the stimulating impact of international trade and its feedback effect on growth. The brief 1971-1973 recover of the international economy did not produce any significant change in these structural factors. However, it did produce an additional harmful effect in the form of speculation in commodity prices, which exerted further pressure on profit rates and the inflationary process.

In the financial area, the rapid industrial growth of the earlier period was accompanied by growing indebtedness on the part of households, firms and governments. Individual consumers' indeb-

tedness was to some extent associated with the greater burden of acquiring consumer durables such as automobiles and housing. It was therefore a reflection of a transformation in the industrial structure. For firms, increasing indebtedness stemmed from both demand and supply factors. Declining output-capital ratios produced additional needs for financial resources in order to create a compensating expansion in capacity. At the same time, declining profitability also made it necessary to rely on external sources of financing. This change in firms' financial structure became apparent throughout the industrialized countries as external financing assumed an increasingly prominent role. Along with labor legislation and trade union pressures for job stability, this made firms' cost structure more rigid by increasing the proportion of fixed costs, for interest payments and remunerations did not decline as output fell. In those sectors characterized by an oligopolistic ownership structure (such as the leading industrial activities), cost pressures were transferred to prices. Furthermore, wage increases in these activities served as a reference point for other sectors. These factors further intensified the inflationary process.

Public sector indebtedness was associated with increasing social demands to neutralize somewhat the backwardness of less favored groups, sectors, and regions, which had been accentuated during the period of rapid economic growth. Borrowing also took place due to an increase in the already high capital-output ratio that characterizes public sector investments. The ability of leading industrial, commercial, and financial activities to avoid significant fiscal pressures through sectoral diversification and internationalization constituted an additional source of inflationary pressure.

The general phenomenon of growing indebtedness encouraged the rapid internationalization of private banking, led by major United States' banks and later followed by European and Japanese financial institutions. This trend started in the late 1960s, and it led to the creation of the Eurodollar market outside government control. By 1978 this market already represented some US$ 860 billion. In addition to its clear implications for the autonomy and effectiveness of different national governments' monetary and fiscal policies the existence of such massive resources encouraged speculative processes such as those aftecting commodity prices between 1971 and 1973, which became more pronounced as inflation rates climbed. Thus the quadrupling of oil prices in 1973, undoubtedly had a signifcant impact, but it in fact reinforced and intensified pressures which had already surfaced.

This discussion suggests that the exhaustion of the developed countries' industrial model contributed substantially to present global stagflation. The growth in international liquidity associated with the explosive expansion of the United States' balance of payments deficit and increasing global indebtedness (which originated both in the transformation of the real economy the speculation which arose as a consequence of recession) intensified the inflationary process.

The relative economic weight of different industrialized countries also shifted in the course of these two decades of rapid growth. Perhaps the most significant aspect of this shift was the erosion of the United States' position and the rise of Japan and Europe a phenomenon which also held important for United States-Latin American bilateral relations. Indeed, there has been a notable decline in the relative weight of bilateral economic exchanges in the United States and Latin America's foreign economic relations, especially in trade, direct investment, and external financing. This trend toward diversification of Latin America's foreign economic relations acquired more intensity the farther away the country was from the United States (the extreme case being Brazil and the southern cone countries of Argentina, Chile, and Uruguay). It reflected the diversification of Latin America's productive structure, as well as the diversification of the region's international political relations and the strengthening of intraregional ties.[5] Furthermore, the erosion of the United States' relative position in growth and international trade vis-a-vis western Europe and Japan, from the 1950s through the early 1970s contributed to the development of Latin America's economic relations with developed countries. This was also the period in which Latin America began to expand its economic ties with the socialist countries, although these exchanges remained at a relatively low level.[6]

The industrialized countries' partial economic recovery in 1975-1978 attenuated somewhat the fears of an international depression similar to that of the 1930s. However, the second oil shock in early 1979 resulted in prolonged recession, whose impact on developing country exporters of manufactured goods has been especially damaging. The World Bank's outlook for developing countries in the 1980s is summarized in a single sentence: "For developing countries, the most salient features of an unfavorable international outlook for the 1980s are less aid, continued weakness in commodity prices, deteriorating export opportunities, and poor prospects for commercial borrowing."[7] This view is based on the recent behavior of the international economy, the outlook for growth in industrialized countries, the level of indebtedness reached by developing countries, the lending limits and country concentration of private banks' portfolios, and the implications of these factors for growth in the developing countries.

This section examines probable future economic trends in those countries with a relatively high degree of industrialization, which the International Monetary Fund (IMF) describes as "major exporters of manufactures", this includes Brazil and Argentina in Latin America.* There are two main reasons for focusing on these countries. First, future economic projections for them are more favorable than for other oil-importing countries in Latin America; in this sense they constitute borderline cases, below which one would expect to find the other countries. Second, Brazil and Argentina have pursued furthest the

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*This definition would also apply conceptually to Mexico. However, the IMF classifies Mexico as a "net oil exporter."

development strategy adopted by other countries in the region. Thus they illustrate the external restraints which other countries may face if they continue these same policies without introducing significant modifications.

As a basis for this discussion it is useful to summarize basic data concerning recent international economic trends:[8]

(1) The financial surplus generated by oil-exporting countries from 1979 to date corresponds roughly to non-oil producing developing countries' deficit. With the exception of 1980 (in which their current account deficit reached US $45 billion), industrialized countries managed to balance their current account;

(2) The principal exporters of manufactured goods account for more than one-third of the current account deficit of non-oil-producing developing countries. Since 1978 the terms of trade for exporters of manufactured goods have been systematically negative, due to the combined effects of the post-1979 increase in oil prices and declining prices for all agricultural commodities and mining exports. Similarly, the volume of developing country exports has fallen since 1978 due to a slowdown in international trade and the growth of Protectionism in industrialized countries.[9] Imports from industrialized countries also decreased dramatically after 1980 as a result of external constraints on domestic economic growth;

(3) From 1977 to 1982 the external debt of "major exporters of manufactures rose from US$ 83 billion to US$ 194 billion, and external debt as a share of gross national product rose from 19.5 percent to 24.9 percent. Debt servicing obligations (interest payments and amortization) as a share of total exports of goods and services rose from 13.5 percent in 1977 to 20.1 percent in 1982. What is more important, interest payments as a share of exports nearly doubled, rising from 4.2 percent to 8.0 percent. This change is largely due to the fact that interest rates doubled between 1978 and 1981.

(4) An important characteristic of this group of developing countries is that their external financing comes principally from private international banks. In 1973 private banks provided 54 percent of the countries' external borrowing, while in 1982 this share had grown to 68 percent. Private banks' increasing importance as a source of financing for developing countries balance-of-payments deficits was accompanied by a reduction in maturity periods and a rise in interest rates, which were incompatible with the terms of maturity or profitability rates required of investments in developing countries. For example, of the US $200 billion in oil-importing countries' external debt held by private banks in 1979, nearly 70 percent were loans with maturity terms of three years or less. As the international recession continued, developing countries increasingly used bank loans to cover emergency imports of oil and foodstuffs, to finance budget deficits, and above all, to repay outstanding debt. By 1985 as much as two-thirds of total new borrowing will be used to cover existing external debt.

For all these reasons, it is clear that international trade and finance no longer constitute positive supports for Latin America's economic growth. To the contrary, during the 1980s the international market is likely to constitute an important constraint for domestic growth, for necessary transformations in the productive structure, and for the satisfaction of accumulated basic social needs which were postponed or ignored during the preceding period of rapid growth. For this reason it is useful to examine 1982 IMF projections for economic growth in industrialized countries and its implications for developing countries.[10]

The basic IMF hypothesis is that those developing countries with a strong external imbalance (which is the case for the majority of Latin American countries) will suffer restrictive growth polices. The assumptions implicit in this forecast are summarized as:

> With respect to policies, a crucial assumption is that countries that are confronted with serious external imbalances will implement comprehensive programs of adjustment. Most such programs will have to include fiscal reform leading to a reduction in excessively high rates of growth of the monetary aggregates; adoption of realistic exchange rate, combined with a change in domestic prices so that they reflect world market prices; and attenuation of government controls and regulations, including more realistic pricing policies by official marketing agencies, and interest rates that are allowed to reflect real rates of return.[11]

Based on these assumptions regarding domestic policy and likely international economic conditions, the IMF projects two probable scenarios for developing countries which are major exporters of manufactured goods.* In scenario A (the intermediate hypothesis), during the period from 1984 to 1986 these countries will experience a -0.5 percent per year decline in the terms of trade. The current account deficit will rise from US$ 32 billion in 1982 to US $37 billion in 1986. Domestic economic growth will average 5.0 percent per year between 1984 and 1986. In scenario B (the pessimistic hypothesis, but the more likely outcome these countries will experience a -1.0 percent per year decline in the terms of trade during 1984-1986, and the current account deficit will rise to US $56 billion. Domestic economic growth will average only 4.5 percent per year. Although the growth rates projected in these scenarios are well below historic levels in these countries (8.1 percent per year in 1968-1972 and 5.9 percent per year in 1973-1978), they may still be too high given the IMF's assumptions regarding restrictive domestic economic policy.[12]

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*The IMF study summarized here also offers a third "optimistic" scenario. However, the IMF judges that these countries' actual performance will fall somewhere between scenarios A and B.

Even to obtain the results summarized in these two scenarios, other important conditions will be necessary. The IMF's assumptions in this regard reveal well the constraints the international economy is likely to impose on developing countries

> (1) "Real interest rates in international financial markets are gradually reduced, bringing the three-month London interbank rate to about 2% in real terms by 1986; (2) oil prices are assumed to stay constant in real terms at their 1983 projected levels; (3) the trade restrictiveness of the industrial countries powered the exports of the non-oil developing countries is assumed to remain about the same as it is now; (4) official development assistance is projected to be maintained in real terms from 1981 through 1986.[13]

Thus even in the most favorable foreseeable circumstances (Scenario A), the prospects for developing countries' economic growth during the 1980s are gloomy. If actual events more closely approximate Scenario B, the international financial system will hardly be in any condition to provide the stimulus necessary for developing countries growth. The IMF study concludes tersely "In the circumstances which are characterized by Scenario B, the possibility of an adequate response by the market to the financing needs of the developing countries would become problematic."[14] Prolonged recession is likely to lead to greatly increased social tensions in some Latin American countries, where expectations produced during the period of rapid growth clash with an economic recession which has already lasted several years and which, according to these IMF projections, may well persist for several more.

By the mid-1970s, external financial imbalances had reached significant levels in several Latin American countries. The recycling of "petro dollar" surpluses after 1975 made it possible to neutralize--and to some extent ignore--the structural factors producing this imbalance. However, these imbalances resurfaced in unprecedented magnitudes in 1980 and become particularly severe in 1981-1982. The convergence of external and internal factors in 1982 produced a decline in gross national product per capita in nineteen Latin American countries. The following 1982 data capture the severity of Latin America's economic crisis.[15] A decline of 1 percent in regional GNP and 3.3 percent in per capita GNP; a significant increase in the rate of inflation, reaching a regional average of 80 percent per year; a balance-of-payments deficit of US $14 billion despite the existence of a US $800 million trade surplus (reversing a 1981 trade deficit) which was achieved even though there was a 6.0 percent drop in terms of trade. The balance-of-payments deficit chiefly reflected the enormous growth in net payments of interest and profits, which exceeded US $34 billion--almost double the level recorded only two years earlier. This financial outflow contrasted sharply with the dramatic decline in net capital flows into the region, which fell from US $42 billion in 1981 to US $19.2 billion in 1982.

Those countries which in recent years "opened" their economy to the international market, experienced unprecedented drops in productive activity. Economic output in Argentina, after falling 6.0 percent in 1981, declined by approximately 5 percent in 1982. In Chile, economic output fell by 13 percent in 1982. Uruguay, which had experienced a slight drop in GNP in 1981, saw ouput fall 9.5 percent in 1982. Although Brazil and Mexico had not pursued such "economic opening" policies, they also suffered. Brazil's GNP fell by 2.0 percent in 1982, and Mexico's four-year period of sustained growth (an 8.0 percent annual average increase in GNP) was brought to a halt. Both Brazil and Mexico saw a virtual collapse of their foreign trade sector, which may provoke far-reaching changes in the strategy followed in the next several years.

Economic factors combined with political and military tension to produce a substantial crop in economic production in those countries belonging to the Central America Common Market, the most extreme case was Costa Rica, where a 3.6 percent decline in GNP in 1981 was followed by a further 6.0 percent fall in 1982. El Salvador has experienced a steady decline in GNP since 1979: -1.5 percent in 1979, -9.6 percent in 1980, -9.5 percent in 1981, and -4.5 percent in 1982. Output per capita in El Salvador declined by approximately 40 percent over this same period.

Studies by the U.N. Economic Commission for Latin America indicate that, in order to absorb growth in the labor force and gradually decrease existing levels of unemployment, Latin America must sustain a growth rate of approximately 7.0 percent per year during the next decade. Under the most optimistic cireumstances, it is likely that unemployment will become much more severe throughout the region. What will happen if future developments are closer to Scenario B, described above? One possibility would be that shortfalls in external financing will force a drastic slowdown in the pace of domestic economic growth. Latin American countries may also attempt to ease the external burden by suspending debt servicing. Alternatively, access to additional resources through the IMF might make it possible to renegotiate external indebtedness. Developments to date suggest that increased efforts will be made to expand IMF resources so as to allow it to respond adequately to an emergeney. Although this strategy would hypothetically safeguard the interests of creditors, it obviously does not respond to the domestic challenges facing developing countries.

Given the accumulated social needs in Latin America, the expectations produced in the period of rapid economic growth, the need to absorb imbalances in domestic production, and the challenges posed by technological-industrial restructuring in developed countries, priority should be granted to those measures which stimulate economic growth in the region. One should not underestimate the dynamic effect which Latin American growth 1975-1980 had on the United States. Indeed, the United States' current account surplus with Latin America rose from US $1.5 billion in 1970 to US $3.4 billion in 1975, US $15.6 billion in 1980, and US $21.5 billion in 1981.[16]

There is general agreement in international circles that recent United States' economic policy has intensified the 1981-1983 recession, and that world economic recovery is to some extent dependent on modifications in that policy. Latin America would particularly benefit from strong growth in the United States. Approximately one-third of the region's foreign trade is linked to the United States, and this proportion increases significantly the further north one goes in Latin America. However, the analysis set forth in the first two sections of this essay demonstrates that world economic recovery is a necessary but not sufficient condition for overcoming Latin America's domestic production imbalances and accumulated social needs. The linear prolongation of conventional development strategies which a dynamic international economy might make possible, would only delay necessary modifications in Latin America's pattern of development. Significant economic and political reforms remain an unavoidable national responsibility.

TECHNOLOGICAL-INDUSTRIAL RESTRUCTURING IN ADVANCED COUNTRIES: CHALLENGES AND OPPORTUNITIES FOR LATIN AMERICA

The speed and effectivenss with which industrialized countries adapted to Post-1973 energy conditions is an important, but partial, reflection of a more complex process of profound technological-industrial restructuring now underway. In 1982 the major industrialized countries used 16 percent less energy and 26 percent less oil per unit of output than in 1973.[17] The political will to adapt to a challenge of this magnitude, combined with the flexibility to modify social behavior and innovate technologically, reveals the importance of endogeneous creative capacity.

The particular political and social value which industrialized countries give to scientific and technological activities in the context of rapid change is clearly reflected in the following statement by the Organization for Economic Cooperation and Development (OECD):

> Far more than previously, the policies of the OECD governments towards science and technology now flow from economic, foreign and social policy concerns. Inflation, unemployment, lack of economic growth, the necessity for adjustment policies, the inexorably rising costs of energy imports, uncertain availability of crucial raw materials: such problems largely determined the policy-agendas of most governments. Current developments in science and technology policies have to be understood principally as the attempt to harness the potential of research to the challenge which these problems pose.[18]

Quite apart from institutional and rhetorical differences in the emphasis placed on public sector intervention, the industrialized countries have systematically attempted to develop and incorporate the most advanced technology into national production as a means of responding to crisis conditions. There is a consensus that comparative

advantages in international trade during the next several decades will be based on precisely this kind of "voluntarist" and "interventionist" action at the national level,[19]

The technological-industrial shift implied by this approach is particularly apparent in energy and leading technological sectors. However, it also has major implications for the production of a wide range of goods and services:[20]

Comsumer durable goods

These products include mainly automobile and electric household appliances, which have been the basis for expanding consumption in both industrialized nations and developing areas such as Latin America. This sector has undergone significant technological change due to a range of factors which appeared in industrialized countries in the 1970s: a tendency toward saturation of demand for traditional products, growing concern with environmental problems, a sharp rise in energy prices, competition from developing countries, labor pressures to increase job satisfaction and opportunities for the large-scale application of technological innovations from electronics and computing. In the manufacture of automobiles, these developments have produced a restructuring of production arrangements on an international scale: increasing automation (including the use of robots) at the plant level; the introduction of lighter materials, new designs, and electronic controls; a rise in energy efficiency; the search for new fuels; and a reduction in pollutants. The production of electric household appliances (as well as electronic games), which was previously relatively labor-intensive, has become more capital-intensive due to increased automation. This shift was prompted largely by increasing competition from newly industrialized countries.

Intermediate Goods

Intermediate goods include a wide range of materials used in the manufacturing process, such as cement, iron and steel, basic petrochemicals, paper, and glass. This sector grew rapidly during the 1950s and 1960s (particularly chemical products), which made it possible to take advantage of economies of scale. Low costs for energy and other raw materials permitted the introduction of major innovations in both products and production processes (again, especially in chemicals). However, this situation changed dramatically in the 1970s. In addition to slower general economic growth, the sector was shaken by price increases for energy and other raw materials, pressures by environmentalists, and competition from several developing countries where large basic processing projects based on the availability of abundant natural resources had began to mature. Further innovations in this sector are likely to be concentrated on marginal improvements in products, the search for new product applications, and marginal increases in the efficiency of the overall production process such as (saving energy and reducing pollution).

Principal attention has turned to the search for alternative energy sources, such as coal, natural gas, agricultural and urban waste, and various agricultural products. Recent developments in the nuclear energy field also point in this direction.

Technical innovations in these continuous production manufacturing activities is also moving toward the development of sophisticated, technology-intensive products which incorporate higher value-added. In the iron and steel industry, the shift toward the production of specially steel is now well-advanced. In the chemical industry, emphasis is now placed on pharmaceuticals, pesticides, and other sophisticated chemical products.

Capital Goods

In the near future it is likely that wage pressure as a stimulas to technological innovation in industrial countries will be replaced by intensified export competition from other developed countries, and in some cases from semi-industrialized countries. Pressures to reduce the role of labor in the production process will thus persist. However, changing energy conditions and technology constrain somewhat the introduction of major modifications in the design of capital goods and complex plants. Thus issues such as energy efficiency, safety measures, and environmental effects (including noise pollution) have become decisive features in determing the competitiveness of capital goods.

Technological change has also had a major impact on the capital goods sector. For example, in the machine tools industry there is a steady trend toward the introduction of digital controls. This control format originated in the aerospace industry's production requirements, and then spread to machine tools in general. The prospects for using computing techniques for industrial design, including the manufacture of capital goods and operational control of integrated processes, machine tools, and entire plants, now appears to be much closer to reality than to science fiction.

The direct application of science and technology to manufacturing in the capital and intermediate goods sectors lays the basis for further diffusion of technological innovation to the production of more general goods and services. For example, the rapid increase in agricultural productivity is due to a significant degree to innovations in the chemical industry and in the manufacture of agricultural machinery. Innovations in communications, computing, and electronics, have greatly affected financial transactions and commercial and public administration. Such developments are also likely to have growing impact on education and health. The decreasing cost of communications materials will also produce changes in personal transportation, and they may open up new possibilities for the geographical decentralization of production. Such a shift toward a new technological-industrial model is the most visible expression of deeper transformative processes which may well affect the global functioning of society.

Bio-sciences and bio-technology

Some observers argue that the innovative potential of biotechnology is comparable to that of micro-electronics. In agriculture, for example, the bio-sciences have already made it possible to shift the focus of research from fertilizers to the process of fertilization. Agriculture is likely to shift increasingly from reliance on conventional chemistry to the use of plant physiology, molecular biology, and genetical engineering. In the pharmaceutical field, significant progress has been made in understanding the causes of illnesses, thus permitting greater emphasis on preventive rather than corrective medicine. In the health field in general, the application of micro-electronics to analysis and the design of instruments will complement the contribution of bio-technology to understanding and preventing illnesses.

The Latin American Response to Technological Restructuring in Industrialized Countries

These developments hold important implications for Latin America. First, given the prospects for a relatively long period of slow economic growth, industrialized countries are undertaking a transitition toward a new model of industrial technology which may lead to a new growth cycle. Latin American countries will thus face an international context which offers them little stimulus for growth in the short- and medium-term. Indeed, policies undertaken by governments of the industrialized countries to strengthen their relative position in this transition process may create a new ranking in the international political economy which further disadvantages developing countries. However, long-term technological change in the industrialized countries may also allow Latin American nations to create a new productive structure on an international scale. National productive structures will need to be transformed if they are not to become obsolete. Some of those industries which are most important in Latin American countries (such as automobiles, petrochemicals, and capital goods) are precisely those sectors in which major technological transformations may take place at the international level in the years ahead.

Second, these changes underline the decisive importance of regional cooperation to incorporate up-to-date projections of future technological change in international negotiations in different industrial sectors. Unless this occurs, Latin American countries may only acquire equipment and production processes which are already outmoded in industrialized countries--as has sometimes been the case in the past. Such errors in the development of Latin America's leading industrial sectors would seriously affect national growth in the decades ahead.

Some of the highly labor-intensive activities in which Latin American countries have concentrated their industrial export efforts may experience significant changes over the next several years as

labor costs rise. Industries such as textiles, clothing, and electronic parts may become much less competitive. Thus it is clear that Latin America must make a major effort to develop advanced technology industries. This is an area in which regional cooperation can be extremely valuable. However, the fields in which technological innovation can be most appropriately applied in Latin America may differ from those in industrialized countries, reflecting the regions own needs and resources.

Which are the most appropriate areas for future development in Latin America? Here it is useful to distinguish among three different fields: (1) the whole range of advanced technologies along which future technological-industrial restructuring at the international level will occur; (2) those areas in which some Latin American countries have succeeded in developing advanced industrial activities with sufficient "critical mass" and close enough integration with the productive apparatus to enjoy some degree of international competitiveness; and finally (3) those areas in Latin America which are clearly backward in both scientific-technological infrastructure and their integration with the productive apparatus as a whole.

Because advanced technologies represent the long-term basis for international comparative economic advantage, Latin America cannot completely ignore developments in these activites. Moreover, it would be extremely short-sighted to do so, because scientific-technological change will affect not only international trade, but also the forms in which society and the satisfaction of its needs are organized.

Although there is widespread international agreement on the importance of incorporating science and technology into productive activity, countries differ widely in their reasons for sharing this conviction. In the United States, the Soviet Union, and to a lesser extent in Great Britain, France, and China, military and geopolitical considerations clearly play a significant role but in Japan, it is the almost total lack of natural resources which makes international competitiveness in the manufacturing sector the basic element of survival. Japan has concentrated on translating progress in advanced science and technology into new products, processes, and production techniques which strengthen its international position in consumer durables and capital goods. In India, the historic trauma of successive conquests by external powers produced a strong emphasis on military self-sufficiency, especially nuclear energy and weapons production. Among East European countries, labor shortages and low labor productivity complement military considerations and a desire to compete in the international market as motivating factors.

Latin America must consider carefully its strategic options in science and advanced technology. Considerations such as natural resource and labor shortages are not relevant; fortunately, geopolitical factors are for the moment limited to very few cases; and although international competitiveness in manufacturing is a generally shared goal, the weakness of national industrialists and transnational corporations' dominance in the industrial sector constitute significant

long-term obstacles to achieving it. Under these circumstances it is pointless to attempt to reproduce in Latin America the "Japanese model", which stresses the incorporation of science and technology in the development of new products, processes, and techniques destined for individual consumption and international trade. Latin America must clearly undertake sustained effort to strengthen national industrial businesses in both the public and private sectors, to rationalize productive structures of different industrial sectors, and to modernize technology for national industry and raise its international competitiveness.

However, these efforts do not imply that international competitiveness must be the only goal toward which advanced technologies and society in general are focused. In Latin America, the linkage between advanced technologies and society must rest on a different central axis than in the industrialized countries. It must take into account the following considerations: accumulated social needs in basic services such as education, health care, transportation, communications, housing, and food; the existence of relatively solid institutional experience and an institutional infrastructure which attempts to address these needs within each country; and the fact that the need to satisfy these demands with limited budgetary resources requires a dramatic increase in productivity in different economic sectors. Because the demand for basic social services is essentially satisfied in industrialized countries, increased productivity necessarily results in higher unemployment, with its consequent socio-political effects. Thus efforts to incorporate advanced technologies into the productive apparatus concentrate on individual consumer goods which can be traded on the international services, rather than on basic social services. Latin American efforts to apply advanced technology to basic services would place it in a vanguard position internationally. This would open up an enormous potential for cooperation with other developing countries, with far-reaching implications in international politics and economies.

These considerations suggest that Latin America's most viable future strategic option lies in the application of advanced technologies to the provision of basic social services. The development of a scientific, technological, engineering, and production apparatus should be based on a dynamic nucleus of national firms--including both public and private firms and joint ventures with transnational corporations. This strategy would involve projects such as the application of genetic engineering techniques to health care provisions and food production, and expanding the use of mass media in education, both in pedagogical method and in context. The fact that more than half of Latin America's population is under fifteen years of age represents an enormous challenge. But at the same time, it offers a potential for learning and creativity which may be particularly relevant in this period of transition toward a new technological-industrial model at the international level. It is for this reason that the education-science-technology trilogy acquires particular significance. It is vital to utilize advances in science and technology to structure an educational process which is compatible

in content and technique with national particularities, and which simultaneously accelerate the diffusion of technical' knowledge and scientific methods throughout society.

The development of computer software, large-scale instruction in programming methods in both urban and rural areas, the use of information processing equipment designed and produced locally in accordance with national requirements (such as low costs, simplicity, compatibility with a democratic educational process), and a national job training program would all be part of this new educational effort. Such a policy would serve multiple goals. For example, it would: constitute a powerful motivation for a predominantly young population; expand the educational training process; increase productivity; and develop an industrial-technological capacity in which some Latin American countries could take an international lead in some specific applications.

In the health care sector, the use of electronic medical equipment and information processing systems is just beginning at the international level. Given Latin American countries' specific conditions (public health systems with varying degrees of coverage and the limited availability of trained medical personnel), it is necessary to define a specific functional strategy which, on the one hand, makes it possible to utilize advances in electronic medical equipment for communications and computing so as to increase the efficiency of the health system and, on the other hand, favors national development of the corresponding "hardware".

Due to Latin America's geographical size and the degree of national economic integration induced it public sector initiatives, a number of complex industrial systems are already in place in communications, transportation, petroleum and petrochemicals, the generation and distribution of electricity, aviation, railroads and subways, and telecommunications. Although these systems differ in their specific requirements, they share requirements for "hardware" and "software" capable of regulating and controlling complex operational systems (including the training process for operating personnel). The magnitude of this demand, the accumulated institutional experience in these different sectors, as well as the technological opportunities open in these activities are all factors which suggest that this area be given high priority in the development of technological-industrial capacity. These complex industrial systems offer an opportunity to develop an integrated program for national producers of advanced electronic goods. At the same time, efforts should be made to conceive and implement an extensive "software" development program linked to the design and production of industrial equipment. International experience suggests that the boundary between "hardware" and "software" is becoming increasingly blurred; country's progress in one field ultimately requires expertise in the other as well.

There are also areas in which Latin American countries should emphasize the development of consolidated technologies. Agronomy, some energy-linked activities, and civil engineering are possible

drastically erode the international competitiveness of some sectors in different Latin American economies. Latin America's particular model of development and industrializtion is to a large extent inherited from the Great Depression of the 1930s. However, the above considerations suggest that the present crisis will require important modifications in this development strategy. A new approach is necessary to respond to domestic and international conditions in the years ahead.

In Latin America's recent political evolution, two aspirations have become increasingly generalized: democratization and modernization. These two ideas constitute a basis for the elaboration of a new development strategy. The intensity and form in which these aspirations are expressed differ throughout the region, but they provide an axis on which to base a variety of specific development proposals. In those Latin American countries in which authoritariansim and political exclusion represent a historic constant, as well as in those in which long-established democratic political arrangements have been recently interrupted, one now perceives a deep appreciation for those forms of social organization which make it possible to address societal aspirations and anxieties through democratic processes.

A similar change has taken place in views concerning modernization. In recent years some Latin American countries have experienced an initially attractive process of "showcase modernization", in which tradionally austere societies entered into sudden and indiscriminate contact wtih "modern" goods and services developed and produced in other contexts. These goods and services were imported to replace "inefficient" local production, which disappeared when exposed to international competition curing a recessionary period when "dumping" practices and subsidies were the norm. The "showcase modernity" supplanted the irrationality of pre-existing domestic production with an even more irrational import structure, which quickly led to increased unemployment, a deeline in the previously accumulated technological capacity, and unsustainable demands for external financing.

Consequently, endogenous modernization should be the key point of reference in a future development strategy. Efforts should be made to integrate scientific and technological advances into national productive structures so as to achieve real assimilation. This will require the political will to achieve high rates of growth that reinforce the search for equity. Large-scale labor training programs will also be necessary to produce this kind of modernization.

The alternative for Latin America is passive insertion in the international economy in accordance with developed countries' needs. This is also "modernization." However, "modernization" of this kind is transplanted physically to Latin American countries without being incorporated in domestic productive structures. It does not enrich or promote national capacity for technological innovation. It is an alien "modernity" whose internal dynamics are determined by distant and often unknown actors and objectives, which are frequently opposed to Latin American countries' national interests. Instead of "showcase modernity", Latin America requires a development strategy which makes its population a decisive factor in its own destiny.

candidates. All of these activities evidence a sound technological base, some integration with productive structures, and some indication of international competitiveness. Future developments in these areas should concentrate on reinforcing the existing technological base and increasing the application of technology to production, although through different institutional mechanisms in each case. In the agricultural sector, the link between research activity and production requires expanded activity by regional and national development banks in order to integrate agriculture and industry more closely. In the energy sector (a captive market served mainly by public enterprises in Latin American countries), technological change should focus on the development of specialized activities, perhaps in joint ventures with transnational engineering; firms with access to advanced technologies. This would then be a basis for diffusing technological innovation to the productive apparatus as a whole. In all three fields--agronomy, civil engineering, and energy products--systematic efforts should be made to tie domestic the developments to international level. In doing so, consideration should be given to Latin American countries' international policies and their economic and commercial linkages to the world market.

As noted in the first section of this essay, Latin America's greatest technical backwardness is in the industrial sector. Within this sector, future development strategy should give top priority to foodstuffs, chemicals, and capital goods. There are all areas in which linkages between the productive apparatus and the technological infrastructure are extremely weak. This problem is especially severe because these are priority sectors for long-term economic development. In each of these areas, it will be necessary to formulate local, regional, and national programs for scientific-technological infrastructure development. Such programs should take into account the scientific infrastructure already available, the extent of involvement by national businessmen, and the potential support which private firms might receive from public enterprises which are either suppliers or major users in these sectors. It is essential that the preparation of these sectoral technological development programs (which would specify priorities, necessary resources, and appropriate institutional mechanisms) include active participation by businessmen, users, suppliers, academic experts, engineering firms, and officials from the different governmental agencies relevant to the activity under consideration.

CONCLUSIONS

Over the next several years Latin American Countries must confront a series of challenges: (1) imbalances in domestic productive structures and accumulated social needs, which were postponed in the period of rapid economic growth but which are now surfacing; (2) an international economy which in the past constituted a stimulus for domestic growth, but which at least in the short- and medium-term will constitute an obstacle to domestic economic dynamism; and (3) industrial and technological restructuring in developed countries, which may

From this perspective it is clear that Latin America's strategic options are not--as it is sometimes fallaciously asserted--to either encourage exports or promote import substitution. The real options are very different: either to create an endogenous nucleus capable of sustaining the technological dynamism necessary to penetrate succesfully the international market, or to surrender to external agents the responsibility for determining Latin America's present and future productive structure. This latter alternative involved the export of natural resources for as long as they are in demand or until they are exhausted, and the manufacture of out-dated products which by definition hold little opportunity for future growth.

Given future constraints posed by the international economy and the need to formulate new development strategies, it is likely that the concept and practice of regional economic integration will acquire much greater importance in Latin America. Recent political and economic changes in the region open up opportunities for regional collaboration which closed political regimes fear due to their concern that gross-national contacts would encourage social unrest. Authoritarian regimes' inherent insecurity causes them to disstrust initiatives for regional cooperation which expand interchanges among national societies, even when these include national business communities. The legitimacy of democratic governments emerging now and in the next several years, together with their will to develop human and natural resources, should make it possible to foster cooperation programs in areas such as health care, education, transportation and communications infrastructure, energy, international marketing, and applied scientific and technological research.

This does not deny the limitations and obstacles which exist to regional economic integration. However, the purpose here is to emphasize those implications which democratization and endogenous modernization may hold for future regional cooperation. The problems encountered by different integration processes in Latin America since the 1960s largely reflect the limitations of national development strategies adopted in the past. Endogenous modernization, by diversifying the productive structure and stimulating domestic creativity, creates opportunities for regional cooperation which are limited by productive structures oriented toward the export of raw materials.

The debate on new development strategies in Latin America should address a number of important issues. First, future development proposals must combine growth, efficiency, and creativity. The lack of attention to creativity in past development strategies has resulted in development patterns dysfunctional to Latin American needs and capabilities. Second more attention must be given to required changes in national productive structures, both within the industrial sector itself (such as modifications in business leadership and the degree of integration) and in relations between industry and agriculture, industry and the energy sector, and industry and finance. Third, there must be closer coordination between national planning and the market, in order to make sectoral strategies more compatible with

the decentralization of day-to-day decisions. Finally, more emphasis must be devoted to the character of the social base which sustains a new development strategy.

Including creativity as an essential component of efficiency is a specific functional requirement of the political perspective articulated above. If meeting popular needs were not an important goal in Latin America, simply importing products, techniques, organizational methods, patterns of food consumption, and models of education, health, housing, communication, and recreation would be sufficient. The historical record shows that Latin America can grow without developing its own creative potential. However, the inevitable result is that a high proportion of popular needs and aspirations are sacrificed, postponed, or repressed. A development strategy devoted to the exportation of raw materials and the importation of "showcase modernity" obviously does not need to emphasize creativity; indeed, it would seek to root out those expressions of national creativity which might question the underlying premises of the mode. Thus the importance of creativity in future development approaches reflects both the need to overcome accumulated social needs and the process of technological transition now under way in industrialized countries. Microprocessors, genetic engineering, laser rays, optical fibers and new energy sources are the basis for future comparative economic advantages. Moreover, these new technologies offer innovative ways of addressing problems as fundamental as mass education, nutrition, cultural integration and development, the decentralization of decision-making, and the industrialization of agriculture. In those countries which succeed in restructing and reinforcing an endogenous capacity for technological innovation, a young, adaptive, and inquisitive population can become the basis for the progressive transformation of both the economy and the society.

The goal of economic growth must also be part of Latin America's future development strategy. Growth is, of course, an essential requirement for addressing the region's accumulated social needs. However, growth is also required for the development of creativity. As long as the productive system expands, it is possible for it to transform itself by developing new products, processes, techniques and by experimenting with new ways of organizing production and the labor force. As previously noted, growth does not always contribute to the development of creativity. For that to occur, specific attention must be given to the "content" of economic growth--the role of different actors in the productive process and their linkages with society at large.

Assuming that democratization and endogenous modernization become the basis for achieving Latin American development goals, the future character of United States-Latin American economic relations depends in large part on the extent to which United States' policies support this strategy. The history of the United States' own economic transformation suggests that it would support a Latin American development strategy based on values which are the very core of its own

success. However, if future United States' foreign policy toward Latin America identifies itself with strategies which combine authoritarianism and "showcase modernity" (as has occured in the past), the medium- and long-term result is likely to be gradual economic and political separation between Latin America and the United States. This is likely to occur despite the heterogeneity of conditions in Latin America and possible short-term increases in financial and commercial transactions with the United States. United States policy toward Latin America must comprehend that the region's social tensions are of predominatly domestic origin, and that they primarily derive from social and economic structures which do not correspond to the needs and aspirations of large sectors of the population. United States' policies toward the region should reflect those values which inspire the United States' own society and polity. Policies which support authoritarian regimes and "showcase modernity" are ethically questionable and politically risky in both domestic and international terms. Moreover, the continuation of such policies will only aggravate the challenges which the international economy and accumulated domestic social needs pose for Latin America--with the risk that the political conflicts now raging in Central America will spill over into the larger and more complex nations in the region.

At the same time, the United States should appreciate the dynamic affect which Latin America can produce if its future development strategy is articulated in terms of values such as democratization and endogenous modernization. With a population which will soon be twice that of the United States, Latin America has the potential to contribute significantly to world economic growth. Conversely, the United States is in a position to make an enormous contribution to Latin America's future economic, scientific, technological, and cultural development. The net transfer of resources necessary would very probably be less than those military expenditures required if social and political conflicts in the region intensify sharply.

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