

INT-2093

Distr.
INTERNAL

LC/IN.85
6 April 1990

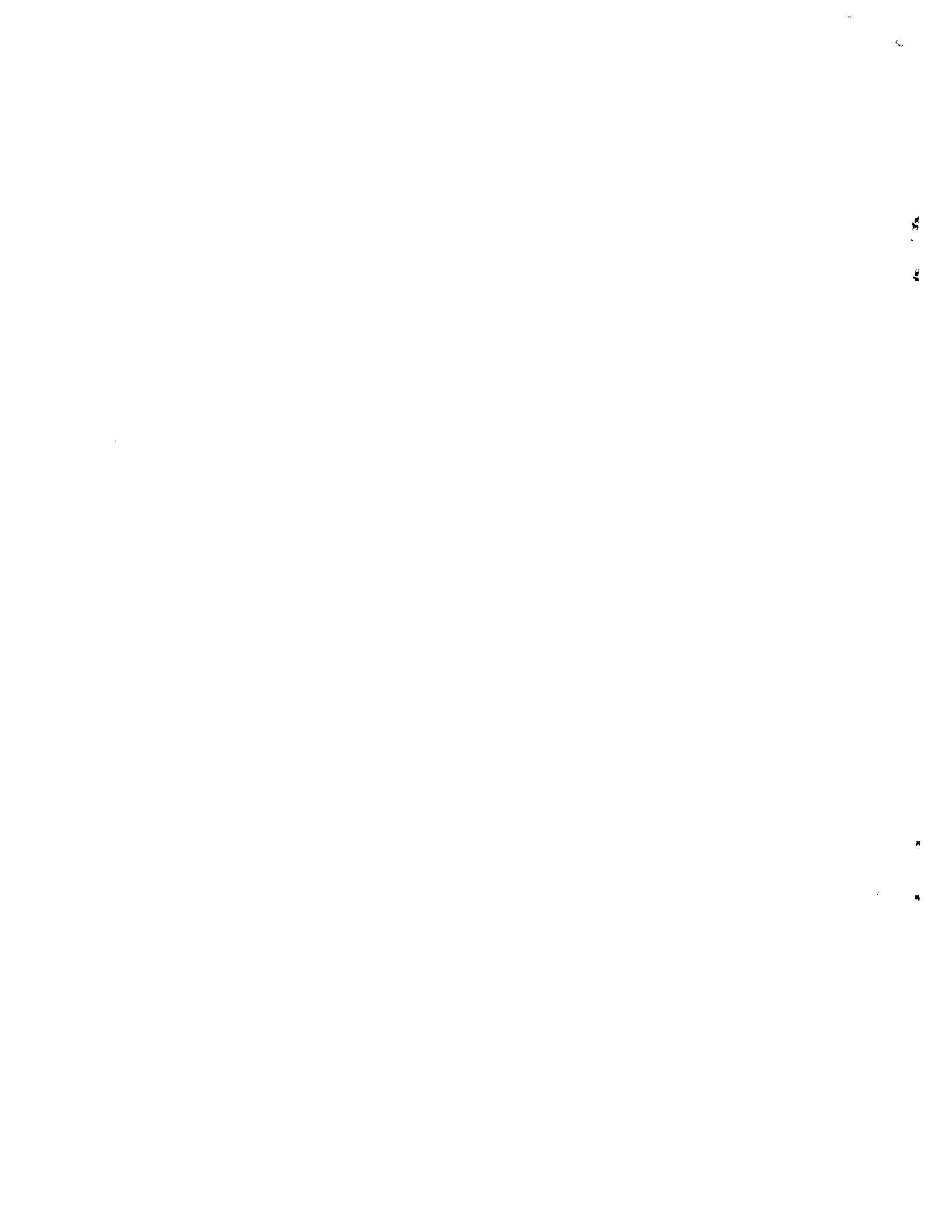
ORIGINAL: ENGLISH

ECLAC
Economic Commission for Latin America and the Caribbean

INSTITUTIONAL CONSIDERATIONS AND PORT INVESTMENTS: RECENT
EXPERIENCE IN LATIN AMERICA AND THE CARIBBEAN

This document was prepared for presentation at the Pacem In Mari-
bus XVIII Meeting, to be held at Rotterdam, the Netherlands, from
27 to 31 August 1990.

90-4-459



CONTENTS

	Page
I. INTRODUCTION: A COMPOSITE LATIN AMERICAN AND CARIBBEAN PORT	1
A. OPERATIONAL ENVIRONMENT	1
1. Location and physical infrastructures	1
2. Institutional considerations	2
3. Operational environment	3
B. COMMERCIAL IMPACT	3
II. INFRASTRUCTURAL CONSIDERATIONS	4
A. CARRIER ACCESS	4
B. SPECIALIZED TERMINALS	6
C. FINANCING	8
III. INSTITUTIONAL CONSIDERATIONS	11
A. ORGANIZATIONAL FRAGMENTATION	12
B. THE ENGINEERING-INFRASTRUCTURAL FOCUS	14
C. THE PRIVATE SECTOR IN PORTS	15
IV. ESTABLISHMENT OF A COMMERCIAL PORT INSTITUTIONAL STRUCTURE: THE EXPERIENCE OF CHILE	17
V. CONCLUSIONS	20

I. INTRODUCTION: A COMPOSITE LATIN AMERICAN AND CARIBBEAN PORT

A. OPERATIONAL ENVIRONMENT

1. Location and physical infrastructures. The composite Latin American and Caribbean port was utilized by explorers during the sixteenth century because of its natural harbor, ready access to fresh water, wood for vessel repairs and food. The accumulation of sedimentation in the harbor and access channel was a minor concern until large-scale vessels began to call in the 1970s. Since that time, dredging services are required with increasing frequency, but water depths remain around 30 feet and are less than those required by such vessels.

The port is surrounded by a city and without sufficient space for any major expansion. The time for navigating a merchant ship between the pilot station and the port is seven hours. Another location five-hours closer to the ocean has been identified for a new port, but pressures from commercial interests in the city, the maritime authority and dockworker unions have nullified all efforts to undertake its construction. The feasibility studies prepared for the new port have shown that for a general cargo vessel with 4 000 tons of cargo the new port would be 71% (286-167/167) more productive than the old port without any change in tons handled per dockworker hour.

PORT PRODUCTIVITY AND DISTANCE FROM THE OCEAN

	TIME	DOCKWORKER	TOTAL	TONS/PORT	TONS/DOCKWORKER
	IN/OUT	TIME	TIME	HOOR	HOOR
PORTS					
old	7 7	10	24	167	400
new	2 2	10	14	286	400

Source: Based on information provided to ECLAC by ports and shipping lines.

The fact that the old port is seven hours navigation from the ocean is not, by itself, a disqualification. There are many ports of other regions with long access channels which successfully handle international trade, but the additional costs of the extended passage must be offset by competitive port charges, high productivity, specialized terminals and efficient inland distribution systems.

A substantial part of the port infrastructure was constructed at the beginning of the century for the export of bulk commodities and the import of manufactured goods. With increasing industrialization of the country, however, the port infrastructure has been expanded and specialized general cargo facilities were constructed in the latter part of the 1950s. All cargo-handling equipment operates at very slow, uneconomic loading rates in comparison with that utilized by ports of other regions. Much of the handling equipment for general cargoes is

not in use. The reason is due to purchases of a wide variety of equipment from different manufacturers which complicates the training of personnel for repair and maintenance services, and which inflates the budget for spare parts. A gantry crane is utilized for loading and discharge of containers, but handling rates are substantially less than its design capacity.

Rail lines connect producing areas and ports. A schematic map of rail routes and terminals between the port and major producing and population centers would seem to indicate the existence of an intermodal transport system. However, the rail infrastructure is in an advanced state of disrepair and is not competitive with road transport. On the other hand, road carriers have an adequate transport infrastructure, but utilize a monopolistic pricing structure through strong unions.

2. Institutional considerations. The institutional environment of the port is the result of an accumulation of policies by various governments. Port activities of dockworkers, banks, ships' agents, truckers, freight forwarders, Customs agents, port authorities, national Customs administrations and other groups are interdependent, but carried out in an inefficient and unnecessarily complicated manner. Notwithstanding the need to coordinate the execution of their individual tasks, they have no common communication links nor central coordinating body. This has resulted in an average port storage time for goods of 45 days. Port labor unions are one of the better organized groups within the port and they exercise monopoly control over their own activities and indirectly influence those of many other groups. User groups have begun to express their dissatisfaction with docklabor's monopoly control of cargo-handling and storage operations. Port labor representatives seek to justify their monopoly by indicating that it is necessary in order to provide them with a large enough volume of cargo so as to reach scale economies with new equipment.

For many years, the country has required its ports to assume many non-commercial obligations. This led to an over-staffing of ports, inefficiencies and a waste of resources. Frequent changes in port management resulted in an abdication to labor of its planning responsibilities. Labor, in turn, is not adequately trained to perform these functions effectively. From a simple comparison of container handling rates, for instance, labor productivity is from 20% to 40% of that found in the average port of an industrialized country. With the adoption of export-oriented macroeconomic policies, there is a growing recognition that the value of ports is based on their contribution to the competitiveness of a country's foreign trade in international markets.

3. Operational environment. The port director received his position as a political appointment and views it as part of a public service career that might lead him to others of greater

distinction. The operation of the port largely depends on the leaders of dockworkers' unions, but there are a number of persons within the national port authority with years of valuable experience. These persons are seldom utilized by the director to control port operations. Rather, the director relies on union leaders so as to avoid labor conflicts and, as a consequence, usually responds to their demands for higher wages, better working conditions and more social benefits.

The wages of dockworkers consume almost all revenue generated by the port, which all but precludes the possibility of modernizing installations and purchasing new cargo-handling equipment from earnings. To respond to the needs of ship operators, private companies such as ship's agents and freight forwarders have begun to purchase modern equipment to load and discharge vessels as well as to move cargoes between vessels and port warehouses. Due to the sophisticated nature of this equipment and its high cost, these companies are unwilling to permit its operation by union dockworkers. Instead, they utilize their own personnel to operate the equipment and charge vessel operators for the service. Port users are faced with two sets of dockworkers, one formal and the other informal, and must pay for both.

B. COMMERCIAL IMPACT

The situation at the port was described by the minister of transport as difficult and, at times, chaotic, with excessive bureaucratic requirements and an overdimensioned work force which is militant, without incentives and has been on strike 189 times since 1987. The overall impact of this environment is to create a very expensive port with extremely low productivity. As an illustration, a general cargo vessel of 8 500 GRT calls at the port to discharge 2 000 metric tons of general cargo from three cargo holds and 50TEU, and to load 300 metric tons of general cargo and 50TEU. The following table summarizes the costs and time needed for such operations in two ports --the composite Latin American and Caribbean port and another in North Europe.

COST AND TIME SUMMARY FOR CARGO OPERATIONS IN PORT

	DAYS	CARGO COSTS	VESSEL COSTS	DOCKWORKER MAN DAYS
Composite port	8	US\$50 000	US\$40 000	540
N Europe port	2	US\$25 000	US\$10 000	180

Source: Based on information provided to ECLAC by ports and shipping lines.

The composite port works only two shifts of five hours each per day and assigns 15 men to each cargo hold, for a total of 90 dockworkers per day. The vessel at this port requires six working days to carry out discharge and loading operations, but must

remain in port over a weekend for a total of eight days. In contrast, the North European port operates three shifts of eight hours each per day and assigns 10 men to each cargo hold, for a total 90 dockworkers per day, and the vessel is loaded and discharged in two days. This means that the 3 300 metric tons of cargo cost US\$50 000 or US\$15.15 per ton to handle at the composite port, and US\$25 000 or US\$7.58 per ton at the North European port. If daily vessel costs are added, these cost rise to US\$27.27 and US\$10.61 respectively.

The preceding calculations reflect the costs of formal dockworkers. To the above amounts must be added the costs paid by ship operators for services provided by informal dockworkers. At the composite port, informal dockworkers carry out approximately 20% of the cargo handling operations with 75% less personnel than the formal dockworkers and at half their wage rate. During the eight day period, 23 informal workers are employed 1.6 days at US\$3 000 per day or US\$4 800 total cost. Thus, the total cargo, vessel and informal worker costs amount to US\$94 800 or US\$28.73 per ton.

II. INFRASTRUCTURAL CONSIDERATIONS

From the information presented in the first part of this document about the composite Latin American and Caribbean port, it can be seen that installations require modernization and new cargo-handling equipment must be purchased. All those in the distribution chain have an influence on which infrastructures and equipment will be selected. Some of the more important influences ports must deal with arise from the requirements for (a) carrier access, (b) specialized terminals, and (c) financing.

A. CARRIER ACCESS

The physical infrastructures of ports should be constructed to facilitate not only the ready access of ocean and land transport operators but also the cost-effective receipt, dispatch and handling of cargoes. Vessel sizes exert a controlling influence over the physical infrastructures of ports. For example, the T-2 tanker of 16 765 dwt was constructed in the U.S. during the Second World War and seems extremely small compared to the world's largest tanker, the Seawise Giant, of 564 739 dwt and a loaded draft of about 28m.^{1/} Dry-bulk carriers also experienced a growth in size, ultimately reaching around 300 000 dwt. With the advent of containerization in 1956, liner vessel operators have begun to take advantage of economies of scale. Since the first container vessel, a converted T-2 tanker with space for 58 containers (35 feet X 8 feet X 8 feet), they have grown rapidly in size to around 4 000 TEUs of 61 000 dwt and further increases are foreseeable to 6 000-7 000 TEU.^{2/}

For ports, larger vessels translate into demands for dredging entrance channels and berths, as well as enlarging installa-

tions or constructing new ones. Many Latin American and Caribbean ports have water depths of little more than 30 feet, and rivers flowing into them which deposit enormous quantities of sedimentation. When it is considered that every foot of depth of a grain vessel is equal to an estimated 2 000 tons of cargo or US\$40 000, it is difficult to overstate the importance of water depth to ports.^{3/} For example, the Paraguay, Paraná and Uruguay rivers deposit annually 90 million cubic meters of sedimentation into the port of Buenos Aires (Argentina) and its access channels. Even though Argentine ports and access channels are dredged frequently, at an estimated annual cost of US\$120 million, a combination of insufficient water depth for large vessels and restrictive labor agreements means that they must begin loading grains at river ports such as Rosario (Argentina) and complete such operations either at Point Alfa, south of Montevideo (Uruguay), or at Bahía Blanca (Argentina).

This problem is not unique to Buenos Aires and Bahía Blanca, and is quite similar to that at the port of Buenaventura (Colombia) where the Dagua and Reposo Rivers discharge a large amount of sedimentation into the port. The state petroleum company (PDVSA) of Venezuela exported an average of two million barrels daily during 1988, but was unable to load tankers greater than 130 000 dwt. In order to facilitate such exports, PDVSA is to construct a new tanker terminal which will be able to service vessels up to 500 000 dwt.^{4/} Likewise, the port of Bustamante (Jamaica) is dredging the harbor and berthing areas to a depth of 42 feet from the current 39 feet to accommodate deeper draft vessels.^{5/} The Paulist Steel Company (CSP) recently has undertaken the dredging of the five km long access channel to its steel terminal near the port of Santos (Brazil). The normal channel depth is 12m, but constant silting has threatened safe navigation of larger vessels using the terminal. It is estimated that the dredging will permit larger bulk carriers to participate in the trade and, through greater economies of scale, result in a freight rate savings of US\$2.00-US\$3.00 per ton.^{6/}

Just as ports seek to respond to vessel schedules by expediting the entrance and departure of ships, as well as while at docks through rapid cargo-handling services, they should also seek to ensure that land transport operators have ready access to the port and that waiting times for cargoes are minimized. Notwithstanding the similarity of such needs, land transport connections are often given only minimal consideration in the planning of port infrastructures. The owner-operator of a truck is often paid a basic rate for each load transported, so his ability to make a reasonable income is dependent upon how many loads he can pick up and deliver each day. So important is the rapid turnaround of trucks that the port of Montreal seeks to dispatch trucks picking-up containers 20 minutes after their arrival.^{7/} In contrast, at the port of Montevideo (Uruguay) trucks must wait four-to-six hours for cargoes, and they are

utilized as temporary warehouses at numerous other ports in the ECLAC region.^{8/}

The selection of a transport system between ports, and inland origins and destinations often determines the competitiveness of a nation's exports in international markets. For example, both Argentina and the U.S. transport grains from farms to ports at a cost which averages 15% of the CIF value, but the average transport distance for Argentine grains is only 250km while it is 2 000km for the U.S. In 1987, trucks were utilized to transport 78% of Argentine grains to ports, rail 20% and waterways only 2%, but in the U.S. the distribution is 12% by truck, 57% by railway and 31% by waterway.^{9/} For Brazil, 65% of its soybean is transported from producing areas to ports by trucks at a cost US\$30.00 per ton, while major competitors utilize rail and waterway systems at half the cost.^{10/} As one horsepower can move four tons by waterway vessel, 333kg by rail and only 150kg by truck, the traffic allocation is not in agreement with the comparative efficiency of the various modes.

To remedy this situation, Argentine ship operators and exporters have undertaken discussions with the national railway (FA) regarding the establishment of a system of block trains to carry goods between producing areas and the country's principal port, Buenos Aires.^{11/} Brazilian soybean producers have proposed that their annual tax contributions of US\$1 300 million should be utilized to construct 5 000km of railroad at a cost of US\$4 000 million.^{12/} Railways have inherent cost advantages, as one horsepower can move 333 kg by railway and only 150 kg by truck, which could be utilized to increase the competitiveness of Argentine and Brazilian grains in international markets. However, the railways of both countries are public sector enterprises which suffer many of the same ailments as public sector ports --overdimensioned workforces, low productivity and inadequate maintenance of infrastructure and equipment-- that must be resolved before such benefits can be realized.

B. SPECIALIZED TERMINALS

The need for specialized terminals did not appear until large volumes of homogeneous commodities began to be carried by ships. Prior to the construction of the first specialized vessel, a tanker, all cargoes were carried in liner vessels. However, when petroleum and other homogeneous commodities, such as automobiles, pipes, paper rolls and lumber reached appropriate volumes, they were separated from ocean-liner transport and began to be carried in specialized vessels. In contrast, the lack of a sufficient volume of bulk chemicals in many trades has contributed to the use of tank containers.^{13/}

Marine containers permit the grouping of general cargoes into standard size transport units and eliminate the need to handle each piece of merchandise separately, which, in turn,

reduce the demand for docklabor. Since their introduction, they have begun to be utilized for neo-bulk commodities such as cotton, lumber, newsprint, bagged rice and grain, and many others. Even traditional bulk commodities such as coal and ores can be carried in containers if the services that consignees desire economically justify their use. For example, Far East importers of animal feeds from the U.S. utilize such units because they sell those commodities in small lots and lack facilities to receive large amounts.^{14/} Due to the worldwide utilization of containers and their standard sizes, specialized terminals with ship-to-shore and marshalling-yard cranes, handling equipment and electronic information systems have been constructed in industrialized and in a growing number of developing countries.

Specialized terminals can be constructed for almost any cargo, but there are numerous requirements which must be satisfied. For example, one Latin American country plans to construct a bulk coal export terminal even though its water depth will not permit the use of PANAMAX vessels, ships will have to have their own cargo-handling systems, coal will have to be brought to the port by truck and another port in the same country would provide a more commercial export channel. Specialized terminals require large investments as well as frequent and large volumes of cargo, adequate water depth, high-capacity cargo-handling systems and low-cost land transport services, and are usually constructed at each end of a trade. For example, the Savannah Electric & Power Company (U.S.) recently imported 23 000 tons of low-sulfur content Colombian coal and has applied for a permit to construct a specialized coal receiving terminal at its plant on the Savannah River.^{15/}

Since the introduction of the first tanker, the trend in cargo handling equipment has been from the handling of small to larger units and then to continuous ship-to-storage systems. This evolution can be seen in the handling of grain, where the change has been from individual 100 pound sacks and slings to continuous-handling systems. To justify the considerable investments in such systems, cargoes must be uniform as well as presented in sufficiently large and frequent volumes. Continuous-handling systems have been used for many years for free-flowing commodities such as petroleum, coal and grains. If the volumes of dry-bulk commodities are small, infrequent or vary too much in their physical characteristics for a common continuous-handling system, ports often utilize large-unit handling systems such as a grab connected to a multipurpose crane. These latter systems usually move from 5 to 40 tons in each lift.

Continuous bulk cargo-handling systems have been improved over many years and at Tubarao (Brazil), for instance, iron ore is loaded at the rate of 20 000 tons per hour and discharged at Rotterdam (the Netherlands) with a grab system at more than 5 000 tons per hour.^{16/} Nonetheless, many countries of the region

continue to utilize cargo-handling systems that are much slower. For example, public-sector terminals in Argentina load grains at an average rate of 8 000 to 10 000 tons per day, requiring more than six days to load a PANAMAX vessel, while those of the U.S. Gulf can load the same vessel in a day-and-a-half. The private grain terminals in Argentina more than double the loading rates at public sector terminals and have captured 61.4% of the market between 1981-1987. Vessel charter rates for the transport of Argentine grains to North Europe are almost three times higher than those from the U.S. Gulf, even though the distance is only 1 300 nautical miles greater. The annual cost to Argentina for such inefficiencies was estimated in 1985 to be US\$500 million.^{17/}

Continuous systems have been extended only recently to the handling of standard cargo units such as fruit boxes and pallets, and their extension to larger units such as containers appears inexorable. There are, as yet, no continuous-handling systems for containers, but Matson Terminal's mousetrap system, which eliminates the break between ship and storage-area gantry cranes, is a very close approximation. Also, Sea-Land Service (SLS) and European Combined Terminal of Rotterdam (the Netherlands) are constructing a container terminal which will feature, when inaugurated in January 1993, an almost unmanned container handling operation with automated stacking cranes and automated guided vehicles controlled by a central computer.^{18/} Whether containers will be loaded onto and discharged from vessels by continuous-handling systems is subject to speculation, but it is known that ship-to-stacking area conveyor systems for containers have been proposed for many years and SLS constructed an operating scale model to prove that such a system is feasible.^{19/}

C. FINANCING

One of the greatest concerns expressed by ports is the need to obtain funds for future investments. A major component of that concern involves the large increases in the cost of port infrastructures and in the cost of borrowing funds for such purposes. There are a number of factors that contribute to the increase in such costs, such as increasingly sophisticated technologies, inflation and alterations in exchange rates. Whether investment funds come from governments, concessionary lending agencies or private sources, conventional investment criteria are seldom applicable to ports, as they face a fluctuating demand for their services, an uncontrollable macroeconomic environment and long payback periods.

Reflecting these factors, the financing of port infrastructures and equipment in industrialized countries has gone through a number of changes. In addition to the traditional financing of projects from earnings or through the emission of bonds, ports have engaged in the sale and leaseback of their facilities and equipment to obtain needed funds, as well as the direct leasing

of needed equipment. Some of the more creative efforts of port authorities have been directed at diversifying their sources of funding for capital improvement projects. In this context, instead of increasing wharfage and cargo dues to recover construction and channel-dredging costs, many U.S. ports have begun to seek outright government grants, as well as government support for legislative changes which would assign a part of cigarette, alcohol and property taxes to such projects without any obligation for repayment.20/

Developing countries have traditionally relied on international lending agencies, bilateral sources, and their treasuries and private sectors for funding of port improvements. As illustrations, in 1989, the World Bank and the Export-Import Bank of Japan jointly agreed with the Government of Uruguay to finance a US\$257.4 million project for the improvement of its ports and highways. The objectives of this project are to reform the transport sector, strengthen its managerial and planning capabilities, as well as to stimulate competition and private-sector involvement.21/ During the same year, the Overseas Economic Cooperation Fund (OECF) of Japan entered into an agreement with the national port authority of Brazil, PORTOBRAS, for a loan of US\$215 million for enlargement of the fertilizer, grain and container terminals at the port of Santos.22/

In 1988, the World Bank and the Government of Brazil agreed to a US\$44 million technical assistance project to improve the utilization of existing port facilities.23/ As part of this project, the port of New Orleans was awarded a US\$9 million contract by the World Bank to place 18 port specialists at six of that country's major ports and at PORTOBRAS headquarters in Brasilia.24/ A similar loan of US\$90.2 million was made to the Government of Mexico to enhance port productivity through improvements in port operations, maintenance of equipment, dredging services, and strengthening of investment planning and financial management.25/ Also, the Government of Mexico approved a budget of US\$200 million for the improvement of its deep-sea ports to support the export of manufactured goods.26/ Finally, in 1987, the World Bank entered into an agreement with the Government of Argentina to jointly finance a US\$66.7 million loan to increase grain-export capacity at the port of Bahia Blanca.27/ This loan forms part of a larger effort that includes dredging the 96km entrance channel of the port of Bahia Blanca to 45 feet by the Soviet Union, which will be paid for through future grain shipments.28/

Traffic projections prepared by PORTOBRAS indicate that cargo tonnages passing through ports will rise from 320 million to 600 million by the year 2000, with container throughput increasing from 637 542 TEUs in 1986 to 2.83 million TEUs, general cargo from 21.4 million to 42.3 million tons, dry-bulk commodities will grow from 60 million tons to over 232 million tons and liquid bulks will increase 85% to 246.7 million tons.29/

The lack of port facilities has a direct and important impact on the achievement of the export-oriented macroeconomic policies adopted by Brazil and many other Latin American and Caribbean countries. For example, due to a shortage of funds, PORTOBRAS stopped construction on the port of Sotava, near Belem, two years ago after US\$80 million in investments had been made.^{30/} Brazilian soybean producers from three agricultural states are pressing the Government to complete construction of the port.

PORTOBRAS estimates that the lack of port facilities and equipment cost the country US\$300 million in vessel demurrage charges during 1987. To remedy this situation, on 23 December 1988 it adopted decree 7 700, which created the Additional Port Tariff (ATP). The ATP establishes a 50% surcharge on port tariffs. The trade community believes that it will create unnecessary costs and estimated that Brazilian exports would decrease around US\$4 billion in 1989 due to the ATP.^{31/} The Brazilian association of foreign trade (ACEB) has suggested that the ATP contributions should be viewed as private sector investments in that country's ports and converted into stock ownership.^{32/} PORTOBRAS has sought to support the ATP by indicating that losses due to inadequate facilities at its leading steel port of Praia Mole will reach US\$12 million in 1989.^{33/} However, vessels at that port must employ 14 dock-workers per cargo hold when six would be adequate, which adds to the loss.^{34/} For the full year of 1989, it is estimated that the ATP will generate around US\$250 million, which will be utilized in the 14 principal ports of the country.^{35/} For example, the port of Rio de Janeiro is planning a US\$30 million enlargement to its container terminal, which is to be financed from the ATP.^{36/}

Many Latin American and Caribbean commercial codes require government control of ports by prohibiting private sector ownership and operation. Port labor unions strongly support such prohibition in order to preserve jobs for their members. These codes do permit, however, the granting of concessions to private-sector interests for handling their own cargoes and for the repair and maintenance of equipment.^{37/} For example, the Brazilian Association of Private Terminals (ABTP), representing 38 companies which operate most of the 244 private terminals in that country, indicated that during 1988 those terminals handled 261 million tons of cargo, or 73% of the 356 million tons which passed through all ports of that country, and that the amount could be increased if existing laws did not preclude them from handling third-party cargoes.^{38/} Among the many conditions imposed by the private sector for making investments in public ports, the most important are related to the period in which a return on investments might be earned and to the irreversibility of the Government's decision to privatize port facilities and services.^{39/}

For the future, financing sources could come to include direct foreign investments. With the globalization of trade and

growing integration of national economies, foreign companies are constructing factories in developing countries which offer low-cost inputs such as raw materials, labor and component manufacture, and/or market access advantages. This has increased the need for efficient ports in those countries. Governments must undertake massive investments in their ports or lose such economic growth initiatives to other countries. To avoid such losses, many countries lacking the capacity to borrow funds could permit direct foreign investments in their ports. The resulting installations could be owned jointly between foreign and national investors, but would probably be operated in accordance with the terms negotiated between the host country and foreign investors.

Another alternative would be for Latin American and Caribbean governments to consider greater involvement of their own private sectors. This might take the form of permitting the private sector to make infrastructural investments in exchange for freight rate reductions. A grain exporter, for instance, might rebuild silos and be paid over an agreed period of time through reduced users charges. A consortium of grain exporters might purchase high-capacity vessel loading machinery for installation in a port, and be paid from not only a reduction in users charges but also the savings enjoyed from faster loading of vessels. In both of these examples, the refurbished silos and loading equipment could belong to either the state, the investors or both. The integration of public and private sector financing for port improvements would permit a sharing of risks and benefits.

III. INSTITUTIONAL CONSIDERATIONS

Before financing is sought for port infrastructural investments, it is axiomatic that governments, port authorities and carriers must begin by ensuring that existing equipment and terminals are utilized in a productive, cost-effective manner. Generally, there are three major obstacles to achieving the desired levels of terminal productivity in Latin American and Caribbean ports. First, the institutional structure under which ports operate -- regulatory constraints, inexperienced management and burdensome labor rules; second, the traditional engineering-infrastructural focus of ports -- the belief that the only way to increase productivity is through the construction of additional facilities; and third, the exclusion of private sector interests from port operations.

A. ORGANIZATIONAL FRAGMENTATION

A wide range of enterprises and institutions carry out their activities to support trade flows at ports. Each enterprise and institution has its own organizational structure. For example, dockworkers, Customs administrations, freight forwarders, customs brokers, banks, insurance companies and carriers operate with different unions, contractual arrangements, government regula-

tions and international conventions. This dense organizational arrangement is complicated even further by the existence in many ports of two parallel groups of port laborers -- formal and informal. The formal group is represented by unions and employed by the port, and the informal group is utilized by their formal counterparts to replace them or to carry out certain heavy, dirty or otherwise undesirable activities.

Ports must organize this complexity, but organized complexity does not imply efficiency, cost-effectiveness nor productivity. As is often the case, the organizational structure of a port is not an optimal choice, but rather a reflection of the structures of all those providing services at its facilities. As illustrations of this point, there are six ministries and 18 state agencies involved in Argentine port activities. In an effort to improve decision making and the assignment of responsibilities, a new legal regime for Argentine ports has been proposed.^{40/} In June 1988, the Government of Brazil announced that it was to adopt a new legal regime to modernize the administration and operation of its ports. By early October 1988 the president of Brazil signed into law two decrees, one that enlarged port administrative councils to include port users and another which placed port laborers under the control of the port authority. Dockworkers responded by threatening a two-day strike, 24-25 October 1988, and the Government repealed the decrees.^{41/}

The unofficial acceptance of formal and informal dockworker systems in Latin American and Caribbean ports can be found in a variety of forms in countries such as Argentina, Brazil, Colombia, Mexico and Venezuela. A large number of Brazilian formal system dockworkers give their identity cards to "bagrinhos" or those of the informal system, who can then enter the port to work. The original "bagrinho" passes the identity card through the port fence to another person and he passes it to another and so on. During January 1989, for instance, one registered dockworker accumulated 786 hours of remunerable work, even though there were only a total of 744 hours during the month -- which means that there were three or four persons working.^{42/}

The port of Veracruz (Mexico) has evolved the practice of "culligismo" or contracting casual workers and paying them substantially less than the minimum wage for what is considered heavy, dirty or undesirable work.^{43/} At the port of La Guaira (Venezuela) the "agency gangs" or informal system dockworkers carry out approximately 60% of cargo handling operations for general cargo vessels and 100% for roll-on/roll-off vessels, and at Buenaventura (Colombia) the "adicionales" or informal workers carry out around 20% of such operations. All of these informal dockworker systems contribute to a disorganization of ports, complicate negotiations between management and labor, create greater opportunities for cargo pilferage, increase the cost of port operations and lead to a decrease in productivity.

Such an institutional environment creates uncertainty and indecision for port administrators, carriers, cargo owners and unions. For example, on 29 November 1989, PORTOBRAS agreed to the demands of dockworkers at 10 major ports of that country for a 23% wage adjustment for inflation, a 4% productivity increase and salaries equivalent to their counterparts at the port of Santos, but delayed the increase until 1 January 1990, as port charges had to be raised so that it might have sufficient income to satisfy the new wage levels.^{44/} However, five days earlier the Ministry of Finance issued a decree which transferred the authority for increasing port tariffs from an interministerial price council to port users councils, the latter of which have yet to be established in many ports. Thus, administrators at those ports and unions are unsure as to when and how charges can be legally increased to meet new salary requirements.^{45/}

This institutional fragmentation and density have led to a bureaucratic lethargy and a vacuum in the control of port operations by management. The better organized groups have been pulled into this vacuum and have assumed varying degrees of control over port activities. For example, such control has been given to a cooperative of unions at the port of Tampico (Mexico) and a similar structure is being studied for use at the port of Santos (Brazil), where the unions already have de facto control over management activities.^{46/} Such cooperatives are a valid organizational structure for management and operation of ports if they include and balance the interests of all those involved. However, when a cooperative is limited to dockworkers' unions it amounts to monopoly control by them and usually results in claims for greater benefits, shorter working hours and preservation of overlarge gang sizes.

The de facto control of operations by dockworkers at the port of Santos (Brazil) has had a negative impact on productivity. It is estimated that the port is about one-third as productive as those of Europe and only one-half of others in Brazil. A cost analysis prepared by the port of Paranaguá (Brazil) indicates that an 11 000dwt dry-bulk carrier would have greater earnings after waiting 30 days to load at its facilities even if the vessel were served immediately at the port of Santos.^{47/} With reference to liner shipping, the specialized container terminal at the port of Santos handles seven units per hour and the port of Paranaguá moves 12, while those of Europe attain an average of 22 per hour.^{48/}

B. THE ENGINEERING-INFRASTRUCTURAL FOCUS

Almost without exception, ports seem to equate the characteristics of their installations with benefits to carriers, shippers and consignees. Benefits come from the use of such installations and not their mere existence. The most important benefits from their use are when services are rendered in accordance with

market requirements and cargoes are delivered on-time and free from damage. Port installations are important to the extent that they support labor, Customs, port administrations, carriers, freight forwarders, Customs house brokers and banks in the carrying out of their individual tasks. Port labor must be willing to work around the clock and in any weather, Customs must be willing to comply with its legislative requirements in a manner that facilitates commercial transactions, and port administrations must be willing to organize all activities so as to optimize the resulting system.

The traditional focus of ports on docks, cargo-handling equipment and warehouses was a logical response to a number of different factors. Probably, the major reason lies with the captive or monopoly position occupied by a port over its hinterland. Vessels had to call at a port to serve its hinterland and this remains true for many of the bulk trades, but containers have altered this commandment for liner vessel operators. In liner trades, containers, not vessels, now chase cargoes. This means that hinterlands are no longer the exclusive domain of specific ports and that vessels can select a port-of-call based on route efficiency and customer service. Another reason is that port labor is a source of perpetual problems which occupy so much management time and money that the cost of capital-intensive systems becomes reasonable. Capital-intensive systems are seen by port authorities as a means to lower port-labor costs, to professionalize dock work and to improve labor relations. Finally, consulting engineers and port equipment manufacturers usually reinforce these historical justifications by recommending that modern port installations and technologies are the best and least expensive ways to increase productivity.

As an illustration of these points, one Latin American government is to purchase a second gantry crane, even though its existing crane has a design capacity of 30TEU per hour and is handling only 12TEU. The massive underutilization of cargo-handling equipment and the lack of adequate repair and maintenance combine to create a basis which is utilized to justify new infrastructural investments. Nonetheless, many Latin American and Caribbean port directors recognize that the volumes of cargo handled at their facilities could be increased by at least 35-50%, without any major investments, if the prevailing regulatory and labor environments more clearly reflected trade needs. The inefficient utilization of a container gantry crane, the lack of adequate repair and maintenance for cargo-handling equipment, and unauthorized interruptions of their activities by dockworkers all contribute to a false need for more equipment, more dock space, larger storage areas and, hence, a greater need for investment funds. Once impediments to productivity have been resolved infrastructural investments in ports can be justified.

C. THE PRIVATE SECTOR IN PORTS

In 1982, Latin American governments shifted from investment-led to export-oriented macroeconomic policies as the principal means of stimulating economic activity. The emphasis on export-promotion generated a substantial increase in the region's external trade volumes and put into sharp relief the strategic importance of ports and their pivotal role in the achievement of national economic goals. Much to the distress of governments, however, their public sector ports were quickly found to be un-supportive of such policies in the sense that they were inefficient, grossly overstaffed, under the monopoly control of dock-worker unions and unnecessarily expensive. As but one illustration of this point, the cost of producing Brazilian soybeans is US\$165.00 per ton and the cost of loading them aboard ship is US\$65.00 per ton, while in the U.S. soybeans are produced at US\$195.00 per ton and loaded at only US\$20.00 per ton.^{49/}

In response to such port costs, Latin American and Caribbean governments have begun to consider a role for the private sector in their public ports. This is part of a much wider effort to revitalize enterprises that have been established, owned and operated by governments. Privatization is usually proposed as a means to promote non-governmental participation in the economy, reduce public sector financial commitments, improve productivity, utilize funds previously dedicated to ports for other activities, decrease government regulations and reduce the size of the docklabor force. The increasing worldwide interdependence of production, trade and distribution activities has led to a recognition that this region's ports must reflect the fierce international and domestic competition that is faced by its producers, exporters, importers and carriers if they are to support the commercial activities of their users and contribute to the success of the region's export-promotion policies.

The privatization of ports in Latin America and the Caribbean typically encounters serious political, legal and economic obstacles. Whether ports are owned and operated by government enterprises, cargo owners, carriers or by others, there always exists the possibility of monopoly abuse. Latin American governments recognize this and frequently express their opposition to the privatization of port facilities and port services. As was mentioned earlier, most of their commercial codes require government control of ports by prohibiting private sector ownership and operation.^{50/} These legal requirements create impediments for the construction and operation of private terminals which would handle third-party cargoes, or those belonging to persons other than the terminal owner. For example, the national shipping line of Colombia, Flota Mercante Grancolombiana, wishes to construct its own US\$30 million private 43 hectare container terminal at the port of Cartagena. However, Colombian law precludes the construction of private terminals for the handling of third-party

cargoes, so the Flota seeks to associate with the national port authority, COLPUERTOS, as its partner in the container terminal.

Some Latin American governments have stressed the need to privatize port facilities and port services. For example, a workshop on Argentine ports, sponsored by the stock market of Buenos Aires during August 1988, concluded that it was necessary to restructure, privatize, deregulate and decentralize the entire national port system of that country.^{51/} With the exception of Buenos Aires, which handles both imports and exports, the country's 23 river and 11 ocean ports largely export grains, minerals and petroleum. While the great majority of ports are controlled by the public sector, 61.4% of all grain exports during 1987 were handled at 10 private ports. The Argentine Undersecretary of Transport and Waterways has found that facilities and equipment are in a state of deterioration at ports administered by the public sector and that shipping lines seek to avoid calls at Buenos Aires, the country's principal port. The Undersecretary is considering a new legal regime which would favor private sector participation in the ownership, management and operation of ports, and a draft law to that effect is to be submitted to the Congress at its next session in May 1990.^{52/}

In the case of Brazil, legislation was adopted in 1965 to permit the construction and operation of private terminals, but the implementing decrees and resolutions have not been promulgated. This means that proposals to construct and operate private terminals are either approved or rejected by PORTOBRAS on a case-by-case basis.^{53/} A recent study prepared by port-users councils brought out the need for greater private sector participation in that country's ports. The study also proposed the creation of a nationwide users council which would participate in the national port administrative council. At a meeting of ship operators during August 1989, it was agreed that ports should not only be privatized, but the monopolies enjoyed by dockworkers should also be eliminated.^{54/}

A decision has been made by the Brazilian Ministry of Transport to increase the role of the private sector in Brazilian ports, in operations as well as in investments.^{55/} The reason for this, according to PORTOBRAS, is that the Government does not have US\$4.2 billion for the construction of 210 new vessel berths which will be needed by the year 2000.^{56/} As an illustration of private sector participation, an extension to a bulk-liquid berth at the port of Santos was recently constructed with PORTOBRAS providing 40% of the funds, while the remaining 60% was contributed in equal shares by the port and by three private-sector enterprises.^{57/}

Despite the increasing privatization of port facilities and port services throughout the world, there are cases in Europe and North America where municipal and state governments have had to purchase port terminals from private interests and operate them.

For example, the port Tampa (U.S.) has found that its terminal operators lack sufficient resources to finance large capital improvement projects which are needed to keep the port competitive. As a consequence, it has elaborated a strategy with two main elements: first, the purchase of terminals from private operators; and second, the financing of needed improvements from property taxes collected over a five-year period.^{58/} Similarly, docklabor disputes at the port of Baltimore (U.S.) related to labor cost, jurisdiction and work rules, have led the state government to accept operational responsibilities for a new container terminal at the port.^{59/} Thus, the deprivatization of ports usually results from factors which create risks that the private sector does not want to accept.

In recognition of these opposing trends, the objective of Latin American and Caribbean governments should be to identify the options which would permit both public and private sector participation in their ports, and, at the same time, avoid the risk of monopoly control by any one group. There is no single approach to private sector ownership and/or operation of public assets that can be applied universally. The options range from leases and management contracts to conversion of the governmental port authority into a publically held company and the outright sale of ports. The options selected must be adapted to the particular conditions of the country's political, social and economic environment. For example, the container terminal at the port of Rio Grande do Sul (Brazil) has been operated since 1985 by a consortium of four ocean carriers, with a strong administrative input from port users, and it is recognized as the most efficient port of that country.^{60/}

IV. ESTABLISHMENT OF A COMMERCIAL PORT INSTITUTIONAL STRUCTURE: THE EXPERIENCE OF CHILE

The Government of Chile has defined its role in ports from the viewpoint of fostering trade. Before 1981, when it adopted laws 18 032 and 18 042 which ended vessel and landside cargo handling monopolies as well as the distinction between those activities, ports of that nation were controlled by 15 port labor unions. At that time, it was found that the cost to load pine trunks aboard a vessel was greater than the total cost of growing the trees, cutting and preparing the trees for export and transporting the trunks to ports.^{61/} The balance of negotiating power favored docklabor unions and they sought to establish the number of workers required for each task and their remuneration. Labor requirements were inflated and wages so high that registered dockworkers often subcontracted their tasks to a large number of casual workers. When this system was audited in early 1981, it was found that some 3 200 registered dockworkers were "employed" 400-600 days per year and each earned more than US\$2 000 per month.^{62/}

To reform this system, in 1981, the Government of Chile adopted the above mentioned legislation. The dockworkers' were compensated with around US\$30 million for the revocation of their cargo handling monopoly and port employment was opened to all workers meeting minimum age and physical requirements. Payments to dockworkers averaged US\$14 300, and ranged from US\$10 000 to US\$200 000.^{63/} Private stevedoring companies were established and negotiations were undertaken between each port employer and individual unions concerning manning levels and salaries, and the central hiring hall was replaced with three categories of port workers: permanent employees who receive a salary whether or not there is a ship in port; special contract workers who, in addition to a minimum income guarantee of four shifts per month, are paid on a daily basis according to the volume of cargoes handled; and casual workers who have no income guarantees.

Law 18 032 created competition among stevedoring companies in each port and led to the introduction of a third shift, increasing the hours of work from 11.5 to 22.5 per day and eliminating costly overtime payments. Other than the removal of warehouses to create an open storage area for containers, no other infrastructural changes were made in Chilean ports until 1984, when a multipurpose crane was purchased by private sector shipping lines. A measure of the support given by Chilean ports to that country's trade would be the change in output per meter of dock for the years 1967 and 1986. As can be seen from Table 1, between those years the tons handled per meter at Valparaíso rose from 776 to 1 122 and the occupation of berths decreased from 65% to 40%. The decrease in berth occupation permitted the port to utilize those which were better equipped and, again, increase its cargo handling productivity.

TABLE 1
THE PORT OF VALPARAISO
(output per meter of dock)

BERTH	LENGTH (m)	TONS		TONS/METER		OCCUPATION (%)	
		1967	1986	1967	1986	1967	1986
S1	175	197 230	347 001	1 127	1 983	73	
S2	175	144 298	372 539	825	2 129	71	59
S3	260	127 134	381 375	489	1 467	73	
S4-5	365	263 828	679 517	723	1 862	51	39
S6-8	605	268 480	410 529	444	679	56	43
S9 *	220	450 380	57 673	2 047	262	65	11
S10	205	4 000	-----				
Tot.	2 005	1 455 350	2 248 634	726	1 122	65	40

* Historically there was a mechanized plant at the berth for unloading coal.

Source: Economic Commission for Latin America and the Caribbean, La cadena de distribución y la competitividad de las exportaciones latinoamericanas: Racionalización portuaria en Chile (LC/G.1597), 29 December 1989, p. 35.

Cargo handling productivity at the port of Valparaíso increased from 2 060 boxes of fruit per hour in 1978-1979 to 6 500 in 1985-1986, which decreased vessel port-stay times from 129 to 40 hours and per box costs from US\$0.54 to US\$0.26. During the 1983-1984 fruit export season, a total of 34 million boxes were shipped from Valparaíso and by 1987-1988 the volume rose to 65 million boxes. The cost for handling tree trunks in the port of San Vicente fell from US\$6.47 per cubic meter in 1980 to US\$3.11 in 1986.^{64/} The Maritime Chamber of Chile has estimated that the annual savings from the commercially oriented institutional reforms amounted to US\$40 million during the first year after adoption and by 1988 exceeded US\$75 million.^{65/}

On 10 March 1990, law 18 042, which had not entered into force, was repealed through the adoption of law 18 966. The new law establishes a general rule that EMPORCHI cannot store cargoes, load or discharge vessels, or move cargoes between ships and storage areas. This general rule, then, requires that such activities be carried out by the private sector. However, there are three exceptions to the general rule. First, EMPORCHI is allowed to deliver trade documents and merchandise as well as offer storage services within the port area, but cargo owners are not required to utilize its storage services and may choose those outside of the port. Second, EMPORCHI is allowed to offer non-exclusive storage services and to move cargoes between ships and storage areas for international transit traffic, principally that of Bolivia. And third, EMPORCHI is allowed to store cargoes and move them between ships and storage areas where those provided by

the private sector are insufficient or non-competitive until the ministry of transport has authorized a subsidy to rectify the matter. Finally, law 18 966 establishes the national port corporation (CNP) as a holding company and creates independent companies for each of the nation's ports.

The Chilean port experience demonstrates that the major obstacles to port efficiency and cost-effectiveness were not the lack of modern technologies or funds for investments, but an unresponsive port administration and a workforce which was overdimensioned and unproductive. Due to competition within each port, they have become progressively more efficient and better able to attend that country's foreign trade. In fact, if 1981 productivity levels were maintained, it was estimated that around 2.1 million tons of fruit, general cargo and forest products could not have been handled without enlargement of port facilities not only at Valparaíso but also at San Antonio and San Vicente at a cost in excess of US\$500 million.66/

V. CONCLUSIONS

Latin American and Caribbean countries must have modern port facilities and technologically appropriate cargo-handling equipment. However, the major problem they face is not financial, but rather, one of inefficient utilization of existing facilities which arise from inadequate management authority and monopolistic control of ports by unions. Port management and labor must actively engage in finding ways to improve the utilization and productivity of existing equipment and installations, as an alternative to spending huge amounts of capital to avoid solving difficult institutional problems. Physical and institutional infrastructures are not separable, and ports can no longer support, at the same time, the costs of investing in modern installations and of paying for an underutilized labor force.

With each change in port infrastructures, supporting institutional arrangements have been modified to reflect not the characteristics of new cargo-handling equipment, but rather to ensure that vested interests are preserved. Such interests have always been precise in the measures they need to avoid competition, but they have never drafted a strategic plan to meet it. The accumulation of such special-interest modifications through the years has created an enormous network of unnecessary tasks and costs which exporters and importers must pay, and lost opportunities the national economy must bear. No longer can governments prejudice international trade by permitting the isolation of port management and labor from the economic well being of the hinterland they serve.

ENDNOTES

- 1/ Carl E. McDowell and Helen M. Gibbs, Ocean Transportation, McGraw-Hill Book Company, Inc., New York, 1954, p. 112, and Seatrade Week, 11-17 August 1989, p. 2.
- 2/ Fairplay International Shipping Weekly, 23 March 1989, p. 21, Containerisation International, April 1989, pp. 8 and 9, and July 1989, pp. 23-27, The Journal of Commerce, 1 May 1989, p. 10B, The International Association of Ports and Harbors, Ports & Harbors, June 1989, p. 22, Cargo Systems International, August 1989, p. 19, and Fairplay Information Systems, Newbuildings, 26 October 1989, p. 13.
- 3/ La Nación (Argentina), 19 October 1987, p. 12, and 24 October 1987, p. 14, and ALAMAR, Informativo, No. 581, October 1989, p. 33.
- 4/ ALAMAR, Informativo, No. 581, October 1989, p. 28.
- 5/ The Journal of Commerce (U.S.), 27 June 1989, p. 7B.
- 6/ Folha de Sao Paulo (Brazil), Portofolha, 31 August 1989, p. J-3, and Fairplay International Shipping Weekly, 9 November 1989, p. 8.
- 7/ Containerisation International, October 1989, p. 67.
- 8/ ALAMAR, Informativo, No. 577, 1 August 1989, p. 13.
- 9/ Bolsa de Comercio de Buenos Aires (Argentina), Jornadas sobre puertos Argentinos, problemática y soluciones, September 1988, pp. 10-11 and 13.
- 10/ ALAMAR, Informativo, No. 573, 16-31 May 1989, p. 6.
- 11/ ALAMAR, Informativo, No. 581, October 1989, pp. 26 and 27.
- 12/ ALAMAR, Informativo, No. 573, 16-31 May 1989, p.6.
- 13/ Fairplay International Shipping Weekly, 1 June 1989, p. 38.
- 14/ The Journal of Commerce (U.S.), 26 September 1989, p. 4C.
- 15/ The Journal of Commerce (U.S.), 23 June 1989, p. 5B.
- 16/ A.D. Couper, Nuevas técnicas de manipulación de la carga, edición española, Organización Internacional del Trabajo, Ministerio de Trabajo y Seguridad Social, Madrid, 1987, p. 31.

17/ Bolsa de Comercio de Buenos Aires (Argentina), Jornadas sobre puertos Argentinos, problemática y soluciones, August 1988, pp. 18, 23, 25, 32 and 96.

18/ Cargo Systems International, May 1989, pp. 33, 35, 85 and 87, and Cargoware International, July 1989, p. 5.

19/ Cargo Systems International, October 1989, p. 61, and The Journal of Commerce (U.S.), 7 December 1989, p. 3B.

20/ The Journal of Commerce, 20 April 1989, p. 5B, and 10 July 1989, p. 8B.

21/ The World Bank, Annual Report 1989, p. 155, and The Economist Intelligence Unit, Uruguay, Paraguay: Country Profile, 1989-1990, May 1989, p. 17.

22/ Folha de Sao Paulo (Brazil), Portofolha, 6 April 1989, p. H-1, 27 October 1988, p. H-6 and 16 February 1989, p. H-3, ALAMAR, Informativo, No. 573, 16-31 May 1989, p. 6, and Containerisation International, July 1989, p. 19.

23/ The World Bank, Annual Report 1988, p. 125.

24/ Fairplay International Shipping Weekly, 8 February 1990, p. 32.

25/ The World Bank, Annual Report 1988, p. 127.

26/ The Journal of Commerce (U.S.), 5 May 1989, p. 1B.

27/ The World Bank, Annual Report 1987, p. 134.

28/ Fairplay International Shipping Weekly, 10 August 1989, p. 30, and Bolsa de Comercio de Buenos Aires (Argentina), Jornadas sobre puertos Argentinos, problemática y soluciones, August 1988, p. 107.

29/ Folha de Sao Paulo (Brazil), Portofolha, 6 April 1989, p. H-1, 27 October 1988, p. H-6 and 16 February 1989, p. H-3, ALAMAR, Informativo, No. 573, 16-31 May 1989, p. 6, and Containerisation International, July 1989, p. 19.

30/ Seatrade Week, 18-24 August 1989, p. 10.

31/ Folha de Sao Paulo (Brazil), Portofolha, 29 December 1988, p. H-3.

32/ ALAMAR, Informativo, No. 580, 16-30 September 1989, p. 25.

33/ The Journal of Commerce (U.S.), 27 March 1989, p. 3B, and ALAMAR, Informativo, No. 573, 16-31 May 1989, p. 6.

- 34/ ALAMAR, Informativo, No. 573, 16-31 May 1989, p. 6.
- 35/ ALAMAR, Informativo, No. 569, 16-31 March 1989, p. 9, and No. 570, 1-15 April 1989, p. 6.
- 36/ Folha de Sao Paulo (Brazil), Portofolha, 27 July 1989, p. H-1.
- 37/ See, for example, articles 10, 11, 18 and 45 of the Ley de Navegación y Comercio Marítimos, Código de Comercio y Leyes Complementarias, 52a edición, Editorial Porrúa, Mexico City, 1989.
- 38/ ALAMAR, Informativo, No. 573, 16-31 May 1989, p. 6, and No. 582 and 583, November and December 1989, p. 34, Folha de Sao Paulo (Brazil), Portofolha, 15 June 1989, p. H-4, and The Journal of Commerce (U.S.), 27 June 1989, p. 10B.
- 39/ Folha de Sao Paulo (Brazil), Portofolha, 7 July 1988, p. D-1, 14 July 1988, p. D-2, 6 October 1988, p. H-1, 20 October 1988, p. H-1, and ALAMAR, Informativo, No. 579, 1-15 September 1989, p. 20.
- 40/ Bolsa de Comercio de Buenos Aires (Argentina), Jornadas sobre puertos Argentinos, problemática y soluciones, August 1988, p. 27.
- 41/ Folha de Sao Paulo (Brazil), Portofolha, 13 October 1988, p. H-6, and 27 October 1988, p. H-1.
- 42/ ALAMAR, Informativo, No. 573, 16-31 May 1989, pp. 6 and 7.
- 43/ ALAMAR, Informativo, No. 575, 16-30 June 1989, p. 5.
- 44/ The Journal of Commerce (U.S.), 1 December 1989, p. 3B.
- 45/ The Journal of Commerce (U.S.), 28 November 1989, p. 8B.
- 46/ Folha de Sao Paulo (Brazil), Portofolha, 6 July 1989, p. H-6.
- 47/ The Journal of Commerce (U.S.), 27 June 1989, p. 10B.
- 48/ ALAMAR, Informativo, No. 577, 1 August 1989, pp. 11-13.
- 49/ ALAMAR, Informativo, No. 571, 16-30 April 1989, p. 7.
- 50/ See, for example, articles 10, 11, 18 and 45 of the Ley de Navegación y Comercio Marítimos, Código de Comercio y Leyes Complementarias, 52a edición, Editorial Porrúa, Mexico City, 1989.

- 51/ Bolsa de Comercio de Buenos Aires, Jornadas sobre puertos Argentinos: Problemática y Soluciones, September 1989, pp. 24-30.
- 52/ La Nación (Argentina), 19 October 1987, p. 12, and 21 October 1987, p. 22, Navitecnia, February 1989, p. 10, ALAMAR, Informativo, No. 569, 16-31 March 1989, p. 8, and No. 581, October 1989, p. 30, and The Journal of Commerce (U.S.), 27 June 1989, p. 9B.
- 53/ ALAMAR, Informativo, No. 576, July 1989, p. 16.
- 54/ Folha de Sao Paulo (Brazil), Portofolha, 31 August 1989, p. J-1.
- 55/ ALAMAR, Informativo No. 569, 16-31 March 1989, p. 9.
- 56/ Navegacao & Transportes (Brazil), 4 January 1990, p. 1.
- 57/ ALAMAR, Informativo, No. 582 and 583, November and December 1989, pp. 43-44.
- 58/ Fairplay International Shipping Weekly, 22 June 1989, p. 30, The Journal of Commerce (U.S.), 6 March 1989, p. 1B, and 28 April 1989, p. 10B, 11 July 1989, 1B, and 12 July 1989, 1B.
- 59/ Cargo Systems International, January 1990, p. 15, The Journal of Commerce (U.S.), 2 February 1990, p. 8B, and 16 February 1990, p. 3B.
- 60/ The Journal of Commerce (U.S.), 11 December 1989, p. 5C and 9C.
- 61/ Proamar, La revista del empresario marítimo, 1 June 1989, pp. 18-21.
- 62/ Frida Johansen and Adhemar Byl, Land transport: Liberalization process, current problems and possible solutions, Chile, Sector Issues Paper, World Bank, Report No. 6314-CH, 24 June 1986, Annex 1, pp. 1-2.
- 63/ Alice Galenson, Labor redundancy in the transport sector: A review, World Bank, Report INU 36, January 1989, pp. 28 and 33.
- 64/ Luis A. Escobar y Gustavo Contreras, La cadena de distribución y la competitividad de las exportaciones latinoamericanas: La fruta de Chile, (s/n) 5 June 1989, p. 108, and Economic Commission for Latin America and the Caribbean, La cadena de distribución y la competitividad de las exportaciones latinoamericanas: Racionalización portuaria en Chile (LC/G.1597), 29 December 1989, p. 43.

65/ Proamar, La revista del empresario marítimo, July 1989,
pp. 18-21, and The Journal of Commerce (U.S.), 27 June 1989, p. 8B.

66/ ALAMAR, Informativo, No. 576, July 1989, pp. 7-8.