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WORKING GROUP ON ECONOMIES OF SCALE IN
THE LATIN AMERICAN AUTOMOTIVE INDUSTRY

Santiago, Chile, September 1970

CASE STUDY ON THE COMPLEMENTARY MANUFACTURE OF ENGINE COMPONENTS IN ARGENTINA AND BRAZIL

presented by

Ford Motor Company

Note: The meeting of this Working Group is one phase of the project "Prospects and possible forms of regional integration in the automotive industry in Latin America" that is being carried out by the Economic Commission for Latin America (ECLA) and the Interamerican Development Bank (IDB), with the collaboration of the United Nations Industrial Development Organization (UNIDO).

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FORD MOTOR COMPANY

Ford has been a multi-national company virtually since it was founded 67 years ago. Our first subsidiary was established in Canada a few months after we began business in the United States.

Today, while Ford is an American company in the sense that it was founded and has its headquarters in America, and most of its stock is held by Americans, we manufacture or assemble cars, trucks or tractors in 21 countries and have sales companies in eight others. In addition, we supply dealer-assemblers in 11 nations and dealers in about 100 more. These businesses are manned and managed primarily by local nationals. Our European companies are coordinated not from Dearborn, Michigan, but from Ford of Europe headquarters in England. All together, some 36 per cent of our vehicle sales and 44 per cent of our employment are accounted for by operations outside the United States.

Our outlook and our policies are conditioned at least as much by the worldwide character of our operations as by the fact that we are based in America.

Successful businessmen must be guided primarily by economic considerations, which have no nationality. Good businessmen are likely to make much the same decisions, wherever their home base is located. If they are the least bit foresighted, they will make every effort not to give offense to the government of any country where they want to stay in business. There is little evidence that foreign-owned businesses behave much differently from any other businesses, and in the absence of evidence, there is good reason to think that they probably don't.

Far from being a threat to the countries where it does business, the multi-national corporation is an effective instrument for improving understanding and cooperation among nations.

Nationalism has its defects as well as its virtues. It is the only viable basis for large-scale political organization, but carried to excess it leads to antagonism, isolation, economic stagnation and armed conflict.

By definition, the successful multi-national company is an organization which gives nationalism its due, but keeps it in proper perspective. Such a company is compelled by business considerations to respect national policies, values and customs, but it does not allow differences in language, currency and culture to impair its relations with other people or to interfere with decisions that are economically sound.

Keeping nationalism in its place is one of the great challenges facing the world at this stage of history. It is essential that the people of the world learn how to do so, for at least three basic reasons. Unrestrained nationalism is a threat to economic development, to world peace and to the newly recognized need to halt the deterioration of our natural environment.

The multi-national corporation can make an important contribution to effective international cooperation in each of these three areas.

In the area of economic development, the role of the multi-national corporation can hardly be questioned. Business operations on a multi-national scale provide larger markets and more efficient use of capital. They permit adequate support for research and development, and ready transfer of technology from one country to another.

Most of the economic advantages of multi-national operations are advantages of scale. One of the key reasons for the size and productivity of the American economy is the existence of a continent-wide market, unobstructed by language, customs or currency barriers. Experience in that huge market is probably the main reason why American companies have been so quick to take advantage of the reduction of economic barriers within Europe. It makes sense for companies in Europe to operate in many countries, just as it makes sense for companies in America to operate in many states. It makes sense to coordinate Ford's Europe-wide operations through Ford of Europe, just as it makes sense to coordinate our America-wide operations through Ford U. S.

In Latin America where Ford has manufacturing subsidiaries in Argentina, Brazil, and Mexico, opportunities to coordinate our manufacturing and assembly operations are restricted by local content rules and the absence of a matured common market comparable to that established in Europe.

The first step toward Latin American integration was the Latin American Free Trade Association (LAFTA) instituted in 1960 by the Treaty of Montevideo. Long-range, LAFTA was initiated to create a multi-national market with trade flowing freely without regard to national boundaries. For the automotive industry, this would provide a free trade area with annual sales (1970 rate) of more than 1,200,000 cars and trucks. A fully integrated manufacturing and assembly operation producing automotive products for such a market would create economic savings through economies of scale ultimately benefiting our customers, and providing substantial reductions in needed investment capital. Capital available for expanding the industrial base of Latin American countries would be multipled many times as true integration progressed.

Unfortunately progress in the automotive sector under LAFTA has been negligible. While Ford has supported the concept from its inception, the progress of governments has been slow and we still deal primarily with separate national markets.

Recognizing the slow pace of political action, Ford began searching for ways to achieve greater manufacturing integration through complementation agreements -- agreements to exchange manufactured parts between countries where our affiliates produced a common component. Such bi-lateral agreements are subject to government approval with varying degrees of complexity. For example, Argentina is willing to consider parts imported from Brazil as local content provided they are matched by exports of automotive components of equal value. Chile follows the same practice. Brazil, on the other hand, still does not generally recognize imported LAFTA parts as local content.

Ford now has complementation agreements between Argentina and Chile (Argentine motors exchanged for various small parts from Chile). Similar components exchanges are in effect between Argentina and Brazil; Chile and Mexico; and Mexico and Venezuela. The typical effect of these agreements is illustrated by the case study which follows.

This case study while hypothetical for proprietary reasons, accurately reflects potential cost reductions that can be achieved through complementation agreements, reflecting economies of scale and related investment savings.

In 1967 Ford of Argentina imported all of its camshafts and crankshafts from the United States. In anticipation of increasing local content requirements, other sourcing for these parts was investigated.

The first possibility considered was local manufacture.

A cost study revealed that an initial investment of $3.4 million would be required to provide manufacturing facilities in Argentina, and that the cost of crankshaft and camshaft components manufactured locally would be an estimated 350% per vehicle in excess of existing price levels in Brazil.

Ford of Brazil was manufacturing these components, and Ford of Argentina began exploring the possibilities of sourcing from Brazil through a complementation agreement. Under Argentine regulations, imported parts from Brazil would be considered as local content.

The key to such an agreement would be Ford of Argentina's ability to provide an exchange component which could be exported to Brazil. At the time, Ford of Brazil was importing rocker arms and shaft assemblies from the U. S., and had begun its own study to determine the feasibility of local manufacture. A preliminary study indicated that Ford of Brazil would require an initial investment of $630,000 to provide facilities for the manufacture of rocker arm and shaft assemblies, and that these locally manufactured components would cost about 126% per vehicle in excess of prices prevailing in Argentina.

Ford of Argentina was sourcing its rocker arm and shaft assemblies from a local supplier, and investigated the feasibility of having the local vendor increase his capacity to supply Ford of Brazil's requirements as well. The supplier was willing to make the required investment, and quoted a delivered price in Brazil of 100% versus the 126% shown above.

As a result of these preliminary findings, Ford worked out a complementation agreement with the Argentine and Brazilian Governments, in which Ford of Argentina shipped rocker arms and shaft assemblies into Brazil, in exchange for crankshafts and camshafts of equal value.

As a result of this complementation agreement, Ford realized substantial variable cost savings in both Argentina and Brazil; freed substantial investment capital for use in other sectors of the Argentine and Brazilian economies; the Argentine and Brazilian Governments are collecting duty on the components that are being complemented, and the consumers are paying less for their cars. Everyone benefited.

The following table illustrates the effect of complementation vs. local manufacture:

Ford Motor Company

ECLA CASE STUDY

	Argentina	Brazil
Product Required	Crankshafts camshafts	Rocker arm and shaft assembly
Annual Volume - Engine Sets	20,000	30,000
Local Manufacture Analysis		
Investment - U.S. Dollars	$3,400,000	$630,000
Variable Cost - Per Engine Set		
Factory Cost	238%	107%
Depreciation	51	8
Interest - 24% P.A. on Average Investment	61	11
Total	350%	126%
Imported Cost Under Complementation		
Inter-Company Purchase Price - Per Engine Set	73%	69%
Freight and Insurance	5	2
Duty	21	21
Other	2	8
Total Imported Cost	100%	100%
Memo: Incremental Investment Required by Exporting Country	$50,000	None
Cost Saving - Per Engine Set	250%	26%

An extrapolation of cost and investment savings of these magnitudes across a car line common to two or more countries would provide enormous benefits to our Company, to the economies of the countries and to our customers.

But, despite the obvious advantages of complementation, governments are reluctant to expand such bi-lateral programs. Governments in countries which have substantial market volumes, and where the automotive industry has reached a high degree of local content, are unwilling to permit complementation with countries having smaller market volumes and higher production costs. In addition, high local content requirements in such countries have created highly integrated industries, and it is becoming increasingly difficult to develop component exchanges which provide cost savings without displacing an established manufacturing operation. The shake-out of high cost suppliers, and increased dependence on non-national sources which would follow expansion of complementation agreements or free trade in the full LAFTA concept are politically unacceptable.

For this reason complementation agreements may have run their course.

To achieve economies of scale, the automotive industry may now consider volume production of high quality parts for export at world market prices as an offset to imported component costs. This would be possible only if governments maintain an acceptable investment climate and provide appropriate incentives.

Countries with low market volumes do not offer many feasible opportunities for complementation, and a continued increase in local content requirements must inevitably lead to an increase in car prices. Government attempts to hold down car price increases will not work in the face of rising costs. No company can continue to operate without recovering its cost of doing business and accumulating a surplus for reinvestment and facilities expansion. We expect that where governments in such countries understand our business, intrinsic local content requirements will be eased in favor of the production of selected, high quality parts for sale in economic volume at world prices in export markets. Foreign exchange earned by these export sales will be used to pay for vehicle components imported from high volume, low cost producers.