State Intervention and Industrialization: The Origins of the Brazilian Automotive Industry

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In recent years state intervention has fallen from favor among development economists and within policy-making institutions. Latin America in particular has been singled out as a region in which years of misguided import substitution policies have led only to overly protected, inefficient industries and mountains of public debt.

This thesis resurrects a successful example of state sectoral planning: Brazil's effort to produce motor vehicles. Initiated in 1956, the auto plan was part of a general import-substituting development effort in which the industry was to play the role of leading sector through its ability to attract foreign capital and technology and generate linkages. The plan restricted imports and forced transnational automotive companies to choose between abandoning the lucrative Brazilian market and, with the assistance of financial incentives, producing vehicles with 90-95% Brazilian-made content within five years. This entailed no small effort on the part of all concerned. Brazil had only the beginnings of an industrial base and up until that point virtually all vehicles had been imported. Steel production had begun nine years earlier and coffee still comprised more than 50% of the country's exports.

With the auto plan, Brazil entered uncharted territory: the world of high-technology consumer goods with which it had no direct experience and the know-how for which was in the hands of transnational firms. As the first Latin American country to attempt domestic production, Brazil could not benefit from the experience of neighboring countries. Moreover, there was little precedent in Brazil or the region in negotiating with transnationals in any manufacturing activity. Previous foreign investment had been restricted largely to public utilities, railroads, and raw materials. Despite the intensification of competition outside national markets between the large auto manufacturers, cross-national investment in production facilities was occurring only within Europe. Firms competed for peripheral markets by exporting complete vehicles or knocked-down kits which only had to be assembled.

Production targets largely were achieved despite these obstacles. By 1961, only six years after the plan's initiation, eleven firms were producing over 145,000 vehicles with an average domestic content share of 93% by weight and 87% by value. Most of the major players in the international auto industry, including Ford, General Motors, Volkswagen and Mercedes Benz, participated. Production reached 280,000 by 1968 and eight firms, all foreign controlled, remained, although only three were responsible for 89% of all

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vehicles produced. This consolidation allowed some firms to attain economies of scale and production costs approaching those in the U.S. Subsequently, the industry led the Brazilian "economic miracle" of 1968-1973 with annual growth rates topping 20%. Vehicle production approached one million in 1988, almost one-third of which was exported.

Analytic Approach

The thesis evaluates Brazil's early experiment in sectoral planning. It reviews various analytic approaches to state intervention and argues that their assumptions about the nature of the state or the economy do not apply. Moreover, this literature inadequately captures the interaction between the state and the market. This separation of political and economic spheres has been reproduced in the literature on Brazilian motor vehicles. Some authors credit government policy for the industry's arrival in Brazil as well as for its ultimate structure. They give particular credit to the Executive Group for the Automotive Industry (GEIA) for serving an indispensable planning function [4]. Others argue that firm entry and market fragmentation resulted from the oligopolistically competitive strategies of the foreign companies, making policy, subsidies, and the institutional environment of secondary importance [2, 3].

The thesis bridges this conceptual gap by situating the auto industry within the larger context of Brazilian political economy. The study starts from the premise that Brazil found itself in a second-best world in the 1950s. Its domestic economy was plagued with distortions and was foreign exchange constrained. On a global front, it faced various industries which were characterized by economies of scale and barriers to entry. It in effect confronted an oligopolized industrial structure in which economic rents were not competed away.

The thesis goes beyond establishing the existence of market imperfections and the economic rationale for intervention and explicitly examines the nature of the Brazilian state and its capacity to intervene effectively. Post-war development in Brazil was not characterized by a MITI-type planning agency with direct allocational control of economic resources. Rather, the situation was one involving transnational corporations with technology and capital, on the one hand, and a fiscally weak state, with the government in power supported by a populist coalition, on the other. The decision to rely on indirect incentives and foreign capital, as well as the final outcome, were determined by the dynamic interaction of these two actors.

Results

The results of this study show that the Brazilian strategy was a success according to a variety of criteria. The industry became relatively cost efficient by international standards, especially in trucks. Internal prices began to fall by the mid-1960s. More surprising are the results with respect to state financing of the auto plan. The subsidies provided to the industry, although

substantial, were smaller than previously assumed.[2] More important, taxes paid by the vehicle assemblers more than compensated for the indirect subsidies they received, even within the industry's first five years. What can be observed from the data is a circular self-financing program: firms were given indirect subsidies, and consumers reimbursed the government through production and sales taxes. This represented a progressive tax on middle class consumers. The share of rents accruing to the firms decreased over time as they were forced to lower prices and an increasing tax bite was taken by the state. The sector thus became a significant source of revenue for a state with limited sources of fiscal income. The data reveal a form of rent redistribution usually found between peripheral states and transnational firms exporting raw materials.

The evidence also shows that the automotive industry had relatively high linkage effects. It generated the development of new sectors to produce parts and intermediate inputs. Brazil's policy was successful in generating the production externalities of the industry and increasing the capacity of the state to capture rents accruing to the firms, benefits which it would have sacrificed had it continued to import from the oligopolized firms.

The policy was less successful with respect to preserving the parts sector for domestic capital. The establishment of a Brazilian-owned parts sector was a critical component of the development strategy. It was a means by which to direct a portion of the rents accruing from protection to domestic capital. The intrasectoral redistribution of resources between the transnational corporations and local firms was expected to strengthen the Brazilian industrial sector and create a basis for further accumulation. Nevertheless, the parts sector (like the terminal sector) effectively came under foreign control, either through vertical integration by the terminal producers or through independent direct investment.

Conclusions

A careful study of the mechanisms of intervention reveals that GEIA and government policy cannot take all the credit for these results. They were due largely to the nature of transnational firms, the Brazilian market, and characteristics specific to motor vehicles. First, the size of the market, which made a domestic industry viable, coupled with global competition in the industry, in and of themselves would have eventually led to serious investment projects in Brazil. The financial incentives and market quotas, which guaranteed a niche in the market, may have increased the number of initial entrants by making investment and survival feasible for marginal firms, but only in the short run. Moreover, the initial inefficiency and required resource transfers resulting from low levels of production were less than they would have been in a smaller country. Secondly, the repressed demand from the postwar years, and the fact that automobiles were a luxury good and relatively

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[2] José Almeida's figures [1] are generally relied upon, but it appears that they were incorrectly measured.

inelastic with respect to price, allowed firms to pass along their high costs to consumers. This also allowed the government to impose a high tax incidence on vehicles without diminishing total revenues.

This outcome was due to the fact that motor vehicles were consumer durables. The same results would not have obtained had the policy involved an intermediate good such as steel. The structure of the industry is different, but most importantly, taxing such an important manufacturing input would have had much broader economic ramifications.

This emphasis on underlying market forces is not meant to imply that GEIA and public policy were irrelevant. GEIA's planning capacity and the subsidies provided to the industry were critical for risk reduction. The subsidies not only significantly reduced the cost of capital investment, but guaranteed a return if the market did not materialize. Moreover, the program established the timing of the investment. Whether or not the firms would have invested on their own a decade later is not the relevant point. The accelerated investment schedule had totally different ramifications for Brazilian development. Essentially, GEIA provided a credible threat in its bargaining with the transnational firms, unusual in Brazil at that time. A firm's failure to invest during this initial period would have meant sacrificing the financial subsidies and being relatively disadvantaged were it to enter the market at a later date.

Yet GEIA can take little credit for the consolidation of the industry in the mid-1960s. It is true that GEIA had predicted that after initial years of government subsidies, a winnowing-out process would occur: fewer firms would survive, economies of scale would be attained, and costs and prices would fall. The shake out of the industry did not result simply from price competition between firms, however, but from the economic crisis of the mid-1960s, the severity of which was policy induced. Furthermore, the end of repressed demand and the imposition of price controls meant that firms could no longer pass along all of their costs-- including taxes-- to consumers. Firms became more concerned with increased volume and market share, and new forms of competition (of which price was only one) emerged.

The Brazilian experience shows that the firms' global strategy and industrial policies were not at odds with one another but were complementary; the nature of international firms and the particular characteristics of motor vehicles were critical to import substitution's success. The limits of this strategy are now becoming apparent, however, as Brazil confronts a globally integrated industry.

Finally, the Brazilian experience also offers insight into the more general debate on state intervention. Ironically, opposing sides in that debate often draw ammunition from the experience of the East Asian newly industrialized countries; where one sees the efficiency of the market, the other sees the effectiveness of state planning. As C.H. Wilson commented on the analogous "power versus plenty" debate, these conceptions are not mutually exclusive but complementary. He argued that one must analyze the conditions which generate the "fiscal desperation" of Spain [5, p. 494], or the British fiscalism that "seemed to move in parallel with powerful private and public interest and was less evidently damaging to economic development ..." [5,

p. 521]. In this spirit, the thesis investigates the interaction between state policy and economic factors to understand better the conditions under which state intervention was successful in Brazil.

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