

Foreign Collaboration in the Public Sector Steel Industry

Bernard C D'Mello
Indian Institute of Management Calcutta
December 1988

Thesis Advisory Committee:

Prof. Nirmal K. Chandra (thesis supervisor), Indian Institute of Management Calcutta

Prof. Kamini Adhikari, Indian Institute of Management Calcutta

Prof.

Thesis Summary

This study analyses the nature, scope and effect of foreign collaboration in the public sector steel industry from the point of view of building an indigenous technological capability. Indigenous technological capability in steel includes the knowledge and skills required to design and set up a steel plant including the ability to design and manufacture the associated capital goods and engineer the related technological processes. It also includes the knowledge and skills required to adapt and modify imported technology and the potential to generate new technologies.

Given the historically determined, present unequal international division of labour, LDC's have a weak capital goods sector and hence the need to import technology for the design and manufacture of most of the capital goods. In the absence of indigenous technological development, there is the possibility of becoming technologically dependent. The external

The Durgapur and Rourkela plants were established in collaboration with a British Consortium of equipment suppliers, ISCON and a combine of Krupp and Demag, IGKD respectively. At Durgapur the main contracts were to be awarded on a turn-key basis to the British Consortium ISCON whereas at Rourkela, loans were explicitly tied to orders from West Germany. The result was tied aid and packaged technology. The capital and equipment cost was higher than the corresponding cost of similar plants in the industrialized countries.

Although the evidence is mixed and there are differences in details, Soviet collaboration has essentially a similar character to Western collaboration.

A study of local R & D shows that there is very little evidence of independent technological development. Genuine attempts at independent technological development do not receive the requisite financial support as is evident from the R & D project on formed coke. There has been very little adaptation of imported technology, one exception being the design of coke ovens. Local R & D suffers from lack of development and tenuous linkages with design and engineering production. A technology policy that favours the liberalization of imports of technology and R & D policy that is geared towards import of a wide range of R & D inputs, including R & D projects in their entirety, may thwart the development of local R & D.

The Indian Steel Industry started out by importing all its technological needs. It has however more or less remained in that position over time as far as the 'core' (that component of the technology over which there is a degree of monopoly or oligopoly) technological needs are concerned. Imported technology has substituted for indigenous technological development instead of being complementary to it.