

## Chapter 106

# Technology–Intensive Suppliers as a Key Element for Structural Change in Latin America

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### ABSTRACT

*The current increase of commodity prices prompts the question regarding the extent to which the growth of primary industries is used as a basis of industrial development. Empirical evidence suggests the development of Technology-Intensive Suppliers (TIS) has played an important role in the industrialization process of the Nordic countries, Canada, and Australia. The development of local TIS may contribute to both reinforcing the industrial base and supporting structural change in developing countries. Therefore, it may provide a way to advance from natural resource dependence towards knowledge-based industrial activities. The TIS products are created under tailor-made concepts, giving solutions to their customers. TIS use knowledge and customer information to create innovation. These firms enhance value chains improving customer's competitive advantages (Dornberger & Torres, 2006). The relationship between the primary sector and its suppliers of technology can be seen as a backward linkage. Sectors with linkages of this kind use inputs from other industries (Hirschman, 1958). Hence, a fundamental goal of research in the context of developing countries is to understand the development of TIS and analysis of their improvement as a result of entrepreneurship intervention. This chapter covers the relevance of TIS firms in developing countries. TIS companies are frequently labeled as Micro-, Small-, and Medium-Sized Enterprises (MSMEs). In conclusion, the findings highlight the need to pay more attention to TIS organizations in developing economies. In Latin America, TIS firms contribute to the employment and diversification of the economic structure of the region through value-added products and services.*

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## INTRODUCTION

The recent natural resource-intensive prices boom has supported Latin American countries to move from a deficit in their trade balance of goods and service into a surplus (The Economic Commission for Latin America and the Caribbean [ECLAC], 2012). The region is highly dependent on minerals, hydrocarbons, and natural resource-intensive exports. However, this surplus is not a consequence of the region's capacity to achieve such a result. The ECLAC (2012) states in recent years the global economic condition has benefitted those countries which are exporters of commodities. This current increase of commodity pricing leads to the following question: To what extent can the growth of primary industries be used as a basis for industrial development?

Despite the momentum that producers of commodities are creating in Latin America, they do not create a basis which can support the industrial development of the region. Natural resource price booms are not a new phenomenon for Latin America; yet they have not been able to link the boom of primary sectors with sectors which can add more value to national production. In other words, the region bases its economic performance on the endowments of natural resources and does not create new sectors in which either capabilities or knowledge would be the distinguishing factors providing competitiveness. In this sense, the challenge for Latin American countries is to guide the commodities boom into a structural economic change which strengthens sectors through the building up of capabilities thus allowing the region to create more knowledge-intensive sectors.

Structural change occurs when a country's production shifts from primary production into a more valuable one. An example can be found in South Korea between 1960–2000 when the country “rose out of poverty, managed impressive and sustained economic growth, and improved its position in global markets by achieving technological leadership in several knowledge-intensive fields”

(OECD, 2012: 26). It is important to highlight that in the Korean case the country's policies played an essential role. Similarly, structural changes can be found in the development of countries such as Canada, Finland, and Australia which had originally produced mainly commodities but today export machinery and equipment (Dornberger & Torres, 2006; Ramos, 2001).

Structural change has been one of the core topics of Developmental Economics Theory. Researchers focusing on this concept seek the key elements which make countries either rich or poor. Among those discussing the shift in economic structures is Schumpeter who highlights the relevance of innovation in generating new sectors. Conversely, Prebisch and Hirschman argue that knowledge-intensive sectors are key elements within a country's economic production (ECLAC, 2012). Thus, structural change calls for the articulation of sectors within an economy. This articulation allows a country's economic progress to develop rapidly (Rostow, 1956). Although this articulation can initiate from primary sectors, it must develop more sophisticated sectors in order to be successful. In this regard, Latin American economies can be seen as those in a region where some primary sectors could generate development through the articulation with more valued sectors such as the providers of machinery.

In this chapter, we argue that the difference between the successful and the non-successful countries is related to the ability to create linkages between primary sectors and backwards as well as forward sectors. Countries which depend on natural resource-intensive production have to push the creation of these linkages to be able to shift their economic structure from primary to sophisticated sectors. We afford special attention to backward linkages, particularly those in which Technology-Intensive Suppliers (TIS) play an important role. Chile and Colombia are rich in natural resources as are other Latin American nations. For instance, Chile is well-known for its exports of salmon and copper. In the Colombian

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