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## Production networks and international trade: China, Brazil and Mexico



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#### ABSTRACT

In this paper, we examine and contrast the production networks in China, Brazil and Mexico. We highlight three results. First, over the last two decades, China's intensity of trade in parts and components has shifted from other members of Greater China to South Korea and ASEAN countries. Second, even though China's production network is mainly Asian, its parts and components trading partners are increasingly global. Brazil also increasingly trades its parts with China and East Asia, while Mexico is still focused on its trade with the United States. Third, Greater China has become a major source of parts and components to Mexican and Brazilian imports. We highlight the importance of such a pan-Pacific link and anticipate that the joint China–Brazil–Mexico production network will continue to grow.

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#### 1. Introduction

Latin America has lately received increasing global attention. It is a much sought after regional trade and investment partner. Not surprisingly, the region has also attracted heightened trade and

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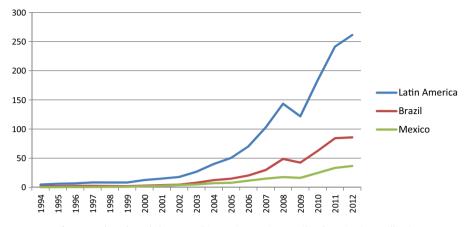


Fig. 1. Total goods trade between China, Latin America, Brazil and Mexico (USD Billion). Source: China Statistical Yearbook, various years.

investment interests from China and the United States, the world's two largest economies. In the context of the evolving economic relationships between China and Latin America on one hand, and the United States and Latin America on the other, the U.S. and the Chinese markets are no longer merely export destinations for Latin America's rich resources, labor pool, and a growing middle-class population, China and the United States have increasingly sought to develop further more specialized and more individualized trade and investment relationships with Latin American countries (Asian Development Bank, Inter-American Development Bank, & Asian Development Bank Institute, 2012).

United States has historically been the largest trading partner for Latin America as a region and for its largest economies, Brazil and Mexico. However, the volume of trade between China and Latin America increased to about US \$261 billion in 2012 from close to nothing in 2000 (see Fig. 1). As such, China is now evolving to be an important trading partner of Latin America, along with the United States (Fung & Garcia-Herrero, 2014). Indeed, China has actually overtaken the United States to be the largest trading partner of Brazil since 2009 (Regenstreif, 2013). In an attempt to deepen our understanding of the growing economic ties between China and Latin America, and particularly the trade relationship between China and Mexico as well as the trade relationship between China and Brazil, this paper focuses on the development and characteristics of goods trade among these three important emerging countries.

In the sections that follow, we will discuss the general trade pattern and the specific pattern of trade in parts and components associated with China, Brazil, and Mexico. The internationalization of a production process in which a specific manufactured product is produced in multiple economies has become a stylized fact of global trade over the past two decades. For example, for a lap top computer to be produced, it is not unusual to find that the computer chips may be produced in Singapore, the display screen to be produced in South Korea, the microprocessor produced in Taiwan and the final assembly done in Southern China. The various parts and components of consumer electronics goods like a lap top computer are often traded across many locations before they are shipped to the final consumers. This production and coordination method is also prevalent in many other sectors. For example, Mexico is a major participant of the production of auto parts in co-operation with U.S. carmakers. This phenomenon is known as global production sharing and the presence of such production networks is a particularly important feature for regional trade in East Asia. East Asian economies that participate in producing a specific item become members of a production network, which by and large centered on China.

In the literature, many important papers have highlighted the theoretical and empirical importance of production networks. Yi (2003) is among the first one to show the significance of production sharing in understanding global trade. Deardorff (2001) and Jones and Kierzkowski (2001) stress the potential

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