Available online at www.sciencedirect.com

ScienceDirect

Journal of Policy Modeling 36S (2014) S89–S110

Journal of Policy Modeling

www.elsevier.com/locate/jpm

Emerging countries and trade regionalization. A network analysis

P. Lelio Iapadre [a,b,*], Lucia Tajoli [c]

[a] University of L'Aquila, Italy
[b] UNU-CRIS, Belgium
[c] Politecnico di Milano, Italy

Received 21 March 2013; received in revised form 24 September 2013; accepted 20 November 2013
Available online 1 November 2013

Abstract

In this paper, the authors start from the observation of two apparently contradictory trends: the increasing regionalization of trade and the proliferation of regional trade agreements, on the one hand, and the increase of the average number of trading partners of each country and of the trading distances over time due to decreasing transportation and communication costs, on the other, pointing to more globalization. They are brought together to better understand the characteristics of the process of internationalization which is involving so many emerging countries. In particular, by considering the extent of regionalization in trade or the preferentiality of regional trade, as well as the structure of some existing trade agreements in terms of influence of individual countries on intra-regional trade flows, they address the following questions: is internationalization of emerging countries starting at a regional level and eventually evolving to make them global players? Is the growing export strength of many low- or mid-income and size economies due to their linkages to some increasingly important traders in the world market, or is it an autonomous development of their economies? The authors start from a particular specification of bilateral trade intensity indices which allows for measuring revealed trade preferences, overcoming several statistical shortcomings of traditional indicators. They then apply the tools of network analysis, in order to take into account whether local trade structures and preferential agreements affect the overall system of international trade.

JEL classification: F14; F69

Keywords: BRICS; Globalization; Trade intensity indices; Network analysis

* Corresponding author at: Dipartimento di Ingegneria Industriale e dell'Informazione e di Economia, Via G. Falcone, 25 – Coppito, 67100 L'Aquila, Italy. Tel.: +39 0862 434866.
E-mail address: lelio.iapadre@univaq.it (P.L. Iapadre).

0161-8938/$ – see front matter
http://dx.doi.org/10.1016/j.jpolmod.2013.10.010

1. Introduction

The impressive growth of trade flows from emerging countries and the proliferation of bilateral and regional preferential trade agreements are among the main trends that characterized the world economy in the past decade, and that drew the attention of policy-makers on the deep effects that they have on the organization of international markets. The increasing trade shares of Brazil, Russia, India and China (the so-called BRICs) have been largely documented and discussed, but together with this small group of large economies, many more mid-size emerging countries are rapidly expanding their exports and their imports. As discussed by Hanson (2012), since the early 1990s, low- and middle-income economies more than doubled their total share of world exports. As far as regionalization is concerned, two opposite trends are observed: on the one hand, there seems to be a trend of increasing regionalization in trade. On the other hand, as transportation and communication costs decreased, the average number of trading partners of each country has been increasing over time, and more firms trade at long distance, suggesting that regionalization should be declining, as shown also by the increase in the number of preferential trade agreements (PTAs) being signed between far away countries. Overall, the number of existing trade agreements between both geographically close and far away countries has increased very rapidly since the 1990s, and in 2011 nearly 300 such agreements were in place. The amount of international trade covered by these agreements seems to increase as well: according to the World Trade Organization (WTO, 2011), the value of trade between members of PTAs has grown faster than the world average in the past decades, increasing the share of PTA trade to world trade to 35% in 2008. In recent years, emerging countries have become very active in signing PTAs and nowadays the vast majority of PTAs in place is between developing or emerging countries (WTO, 2011).

In this paper, we put together these two trends to better understand the characteristics of the process of internationalization which is involving so many emerging countries. In particular, by considering the extent of regionalization in trade or the preferentiality of regional trade, as well as the structure of some existing trade agreements in terms of influence of individual countries on intra-regional trade flows, we address the following questions: is internationalization of emerging countries starting at a regional level and eventually evolving to make them global players? Is the growing export strength of many low- or mid-income and size economies due to their linkages to some increasingly important traders in the world market, or is it an autonomous development of their economies?

Measuring trade regionalization and detecting leadership patterns in regional trade networks may be done in different ways, including the use of gravity models, intensity indices or network analysis tools. In this paper we start from a particular specification of bilateral trade intensity indices which allows measuring revealed trade preferences, overcoming several statistical shortcomings of traditional indicators (Section 2). We then apply the tools of network analysis, in order to take into account whether local trade structures and preferential agreements affect the overall system of international trade (Section 3). In both sections we study the role of BRICs in the global and regional trade networks in three years: 1995, 2008 and 2011. The four regions considered here connected to each BRIC country are the Southern Common Market (Mercosur),[1] the

[1] The Mercosur was established in 1991 and until 2011 included Argentina, Brazil, Paraguay and Uruguay. The recent accessions of Venezuela and Bolivia have not been considered in this paper.