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Globalisation and cointegration among the states and convergence across the continents: A panel data analysis



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ABSTRACT

This paper attempts to examine the level of cointegration among various nations across continents with respect to their globalisation. An approach is also made to analyse the nature of inter- and intra-continental globalisation and its variation over time. The proximity and convergence over time, in terms of the growth of globalisation is examined by using a panel data set over a period from 1970 to 2007. The outcome reveals the presence of co-integration among selected nations. The European nations are more co-integrated than those in other continents. They are closely followed by the countries in Africa and Asia. The proximity matrices of overall globalisation and political globalisation provide some important indications that geographical proximity, economic necessities, cultural and political understanding play a crucial role in determining the clusters of countries in terms of globalisation.

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1. Introduction

Globalisation has become a myth and is believed to be the solution to several social and economic problems across countries (World Bank and IMF, 2007). Nations are expected to gain more in terms of faster economic growth, improvement of human development through globalisation and interactions with other countries, rather than remaining in isolation (Dreher, 2006; Kulkarni, 2005; Amavilah, 2009a). Amavilah (2009b) has shown that human development index depends on conventional factors and forces, national symbols, as well as globalisation. Opening up free trade not only increases efficiency but also helps in reducing pollution emission due to greater competitive pressure and greater access to greener production technologies (Cole, 2004). International capital transactions also affect national pollution levels (Antweiler et al., 2001). However, Heintz (2006) has raised doubts about the role of globalisation in employment challenge and ensuring quality of work life, poverty reduction as well as gender equity.

According to Cherni (2001), “the problem that globalisation has not been able to dissolve is the pronounced economic and many other unjust disparities between the developed and developing world. If anything, environmental problems that have been caused or worsened as a result of globalisation in cities of the developing world can be added to a list of already existing, and perhaps worsening, critical problems such as poverty and lack of sanitation and running waste and accumulating urban waste”. Thus, there are contradictory forecasts in regard to the impact of globalisation on the development as perceived by various researchers. Despite many limitations pointed out by a large number of studies and cautions against unrestricted

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globalisation and opening of countries to the outside world without considering the competing ability of the domestic sectors, bringing in foreign capital without considering its social, economic, demographic and environmental consequences; a large number of countries have followed this path blindly (Beams, 2000; Effland et al., 2006; Heintz, 2006; Tang, 2008; Versi, 2004; Eweje, 2005).

The move for trade relaxation, integration of economies and globalisation arose out of the apprehension that it is very difficult to progress beyond a certain point with solely indigenous efforts due to lack of complete knowledge and appropriate technology. Thus, interdependence and free trade lead to specialisation, accelerate trade and mutually benefit the participating countries and accelerate growth of economies. The bargaining capability, socio-political strength, terms of trade and its change, remain out of consideration among many of the country heads and this may ultimately lead to some undesirable consequences later. Of course, a few countries, despite being the signatory to many international treaties, follow the path of globalisation and open economy with some built in restrictions to safeguard the interest of various domestic industries, their employees, markets and also socio-cultural values.

Moreover, there are differences in timings and phases of implementation of globalisation measures (tariff reduction and opening of domestic market to international businesses and entrepreneurs, allowing foreign capital and labour movement and similar steps) by several countries, not only due to the apprehension of facing unequal and stiff competition from others, without having adequate technological progress, but also due to the fear of adverse impacts on the social and economic position and strong opposition faced from various socio-political institutions at home (Beams, 2000; Effland et al., 2006). Thus, we observe even within the same Asian region, countries such as China, Malaysia, Singapore, Korea amongst others, started integrating their economies with the rest of the world much earlier (1980s) than India (1990s).

In addition, despite their social and political differences, many countries resorted to trade relaxations initially with their geographically neighbouring countries. Later, due to the scarcity of material wealth and technology, they were also found to be opening up trade and socio-political relations with distant countries. Therefore, the differences in proximity in terms of globalisation are apparent among the nations across continents. It may also be due to the ideological differences, political set up and the requirement of commodities and technologies. For example, out of the necessity for petroleum, India was moved to foster more trade ties with oil and natural gas producing countries like Syria, Saudi Arabia, Iran, Brazil amongst others, even though they are relatively distant nations. Socio-political, economic and cultural homogeneity may be one of the important reasons behind the closeness among the nations across continents.

The purpose of the present paper is to examine the level of cointegration among various nations across continents in regard to the globalisation. Also the proximity and convergence over time in terms of the growth of globalisation is examined by using a panel data set over the period from 1970 to 2007.

2. Data

Globalisation is a process of integration of countries through economic, social and political processes. Data on various globalisation indices across countries for the period 1970–2007 have been collected from the KOF index of globalisation (Dreher, 2006; Dreher et al., 2008). Besides, overall globalisation, Dreher computed economic, social and political globalisation indices also.

The economic globalisation index is constructed on the basis of (a) actual flows: trade, foreign direct investment, portfolio management, income payment to foreign nationals and foreign capital employed (all expressed as percentage of GDP) and (b) restrictions on trade, foreign capital through physical and economic barriers, tariff rates, taxes and an index of capital control.

The social dimension is however constructed on the basis of information on (i) personal contacts (telephone traffic, transfers, international tourism, foreign population, international letters); (ii) information flows (internet, television and trade in newspapers) and (iii) data on cultural proximity (measured by number of McDonalds Restaurants, Ikea and trade in books). The political globalisation index is constructed from the number foreign embassies in a country and its number of membership to various international organisations and participation to UN peace missions and treaties. All the three indices are constructed by taking weighted average of the associated parameters. Using all these three different indices overall globalisation index is computed (for more details, Dreher, 2006).

The information on GDP across the countries for the years 1970, 1983, 1992 and 2008 have been collected from various issues of *World Development Reports*. Also human development index figures were collected from various issues of *Human Development Reports* published by UN. The countries, for which information on all the aspects of globalisation, GDP, Human Development Index etc. are not available, have not been considered for the present analysis. Thus, we have considered only 75 countries for which data on all the relevant variables are available for the period 1970–2007 or 2008 (see Fig. 1).

3. Methods

First of all the stationarity of the globalisation index across the countries using augmented Dickey–Fuller (ADF) test (Unit Root test, Dickey and Fuller, 1979) was examined. The test was done on the basis of the following regression equation on

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