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A further look at linkages between NAFTA equity markets

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Abstract

Recent research finds evidence for convergence among the North American equity markets and argues that this is generated by the North Atlantic Free Trade Accord (NAFTA). In this paper, we re-examine these conclusions and show that the documented cointegration property among the NAFTA equity markets was in fact confined to a sub-period in the late 1990s. We argue that the comovement was caused by the global boom in information technology shares and the resulting change in the sector mix of the value-weighted benchmark indexes used in prior work. We present evidence supporting this alternative hypothesis using an updated data set that includes global industry indexes. Our results have implications for transmission of information across global equity markets and international portfolio diversification.

JEL classification: G1; F3

Keywords: NAFTA; Industry effects; Market integration; Cointegration

1. Introduction

An important goal of the North American Free Trade Agreement (NAFTA), which has been in effect since 1 January 1994, is to increase the integration of financial markets of the US, Canada and Mexico, in addition to obtaining more liberal international trade. Furthermore, it can be argued that stronger economic linkages are likely to lead to increased comovement among the national markets.

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Building on these motivations, several studies investigate cointegration between the NAFTA equity markets. While prior work by Ewing, Payne, and Sowell (1999) and Atteberry and Swanson (1997) are largely unsupportive, more recent papers by Darrat and Zhong (2005), Aggrawal and Kyaw (2005) and Gilmore and McManus (2004) present evidence for cointegration in the post-NAFTA period. They suggest that the NAFTA accord was instrumental in achieving convergence among the North American equity markets.

In addition to providing evidence on the impact of international trade arrangements on equity market linkages, a relatively unexplored topic in international finance, the findings are important for effective global portfolio diversification strategies. Starting with the work of Kasa (1992), many researchers have argued that benefits from international diversification may not materialize if national equity markets move together in the long run.[1] Furthermore, the findings imply that, since equity prices could impact monetary policy through the wealth channel, expectations about the stance of interest rates may be linked across the markets.

The goal of the present paper is to re-examine the integration of the NAFTA equity markets and its associated implications. Specifically, our working hypothesis is that the observed cointegration among the three stock markets is due primarily to the global equity market boom in the late 1990s, rather than a fundamental integration of the markets resulting from NAFTA as suggested by previous studies.

Our main motivation comes from the observation that a market bifurcation became apparent between sectors of the global economy in the second half of the 1990s. Consequently, the weights of the technology and telecommunications sectors reached unprecedented levels in value-weighted indexes used in prior work.[2] In fact, we analyze the change through time in relative weights of major industries in aggregate country indexes and show marked increases for technology and telecommunications industries across the NAFTA economies.

We argue that global shocks to these sectors generated a comovement among the indexes in the second half of the 1990s. It is noteworthy that our analysis is particularly related to a recent study by Brooks and Del Negro (2004). In a firm-level study, these authors suggest that increased importance of industry factors in international portfolio strategies in the late 1990s was mainly confined to stocks in telecommunications and technology.[3]

In empirical analysis, we utilize industry level data in addition to country benchmark indexes and also, use observations that cover a more recent time period, specifically between 1994 and 2004. The use of a longer time period allows us to examine market dynamics after the market crash in March 2000 and industry level data are useful to focus on disaggregated dynamics between the economies. We use Johansen's cointegration methods and, consistent with prior work, find that the series exhibit a stable relation between January 1994 and March 2000. However, support for

[1] Manning (2002) and Kanas (1998) are examples of studies that suggest that lack of cointegration between any two stock markets implies gains to international portfolio diversification. It is noteworthy that this view is consistent with the early arguments by Levy and Sarnat (1970) three decades ago.

[2] Schwert (2002) and Hasbrouck (2004) reported that the combined weight of technology and telecommunications firms was approximately 40% in the S&P 500 index in December 1999. In the same time period, Telefones de Mexico, the main telecommunications company of Mexico, had a 27 wt.% in the IPC index and the two other largest companies in the index were also telecommunications firms. Similarly, technology firms Nortel and BCE together accounted for 2% of the TSE 300 index of Canada.

[3] Similarly, Engle (2002) detected that correlation between NASDAQ 200 and Dow Jones 30 indexes reached an all time low of less than 0.4 in March 2000. He argued that this is related to sector rotation in benchmark indexes between "new economy" and "brick and mortar" shares.