

Trade intensity and business cycle synchronization: Are developing countries any different? ☆

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Abstract

Trade intensity increases the business cycle co-movement among industrial countries. Using annual information for 147 countries for the period 1960–99 we find that the impact of trade intensity on business cycle correlation among developing countries is positive and significant, but substantially smaller than that among industrial countries. Our findings suggest that differences in the responsiveness of cycle synchronization to trade integration between industrial and developing countries are explained by differences in the patterns of specialization and bilateral trade.

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1. Introduction

The recent creation of the European Monetary Union (EMU) has renewed the interest in the economics of currency unions. While such unions may foster trade flows among their members,

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the sacrifice of an independent monetary policy may also pose important costs, in particular when the correlation between the business cycles of the different member countries is relatively low. But what factors determine such correlation? In the last several years, a number of scholars have focused on the role of one particular such factor, namely the degree of trade integration. As argued by Frankel and Rose (1997, 1998), if currency unions create trade, and trade increases cycle correlation, perhaps countries should not be so concerned with ex-ante lack of business cycle correlation when deciding whether to enter into a currency union.

Empirical studies for the case of industrial countries (Frankel and Rose, 1997, 1998; Fatás, 1997; Clark and van Wincoop, 2001) provide evidence that higher trade integration does in fact lead to more closely correlated business cycles. But are the lessons derived from the experience of industrial countries useful to help guide policy decisions in developing countries? We argue that there are reasons to believe that the link between these variables may be weaker among developing countries. The response of business cycle synchronization to trade integration may depend on variables such as differences in structures of production among country pairs (Krugman, 1991), and the extent of intra-industry trade (Fidrmuc, 2002; Gruben et al., 2002; Imbs, 2004). Since these factors may differ for different types of country pairs, the impact trade integration on business cycle correlation may be different as well.

According to the literature, the impact of trade integration on business cycle correlation could go either way (Frankel and Rose, 1998). On the one hand, if the demand channel is the dominant force driving business cycles, we expect trade integration to increase cycle correlation. For instance, positive output shocks in a country might increase its demand for foreign goods. The impact of this shock on the cycle of the country's trading partners should depend on the depth of the trade links with each of the partners. On the other hand, if industry-specific shocks are the dominant force in explaining cyclical output, the relationship would be negative if increasing specialization in production leads to *inter-industry* trade (as usually observed in developing countries). In this case, trade integration leads to specialization in different industries, which in turn leads to asymmetric effects of industry-specific shocks. In contrast, if *intra-industry* trade prevails (as observed in industrial countries), specialization does not necessarily lead to asymmetric effects of industry-specific shocks, since the pattern of specialization occurs mainly within industries. In summary, the total effect of trade intensity on cycle correlation is theoretically ambiguous and poses a question that could only be solved empirically. However, the important differences in the pattern of trade and specialization among country pairs of different type suggest that the impact of trade integration on cycle correlation among developing countries may differ substantially from that among industrial countries.

Our paper extends and complements the study of Frankel and Rose (1998) in two dimensions: first, we analyze the impact of trade integration on business cycle correlation not only among industrial countries but also among developing countries, as well as among "mixed" (industrial-developing) country pairs. By working with a sample of 147 industrial and developing countries, we are able to test whether the links between trade intensity and business cycle correlation are different depending on the nature of the countries involved. We expect the impact to differ across groups of countries, due to their different patterns of trade and specialization (i.e., inter- vs. intra-industry trade patterns). Our prior is that trade intensity should have a positive effect on cyclical output correlation among industrial countries, and a smaller (and ambiguous) effect among other country pairs. Following Frankel and Rose (1998), in studying the effects of trade intensity on cycle correlation we take into account the fact that trade intensity itself may be endogenous.

Second, we study the extent to which differences in the response of output correlation to higher trade integration among different groups of country pairs can be attributed to differences in the

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