Global Linkages Pre-Conference Summary

On January 30 and 31, 2003, the IMF will host a conference on "Global Linkages." The main purpose of the conference is to assess empirically how real and financial linkages across countries have changed in recent years and what implications these changes have for policy makers in developed and emerging markets. In preparation for that conference, prospective authors and other experts in the field attended a pre-conference in Washington, D.C. on April 26, 2002. The pre-conference brought together presenters and discussants in an informal setting to promote an exchange of ideas and identify key conceptual and methodological issues in understanding the evolution of cross-country linkages. Authors made short presentations of their research proposals and preliminary results and participants discussed suggestions for the work in progress.

Here we summarize the papers presented at the pre-conference, describe the substantive and methodological issues raised, and conclude with some goals that the conference could achieve.

Summary of Papers

Papers fell into four groups.

- Trends in comovements across national stock markets;
- Contagion spillovers across financial markets;
- Rise in comovement of real variables across countries;
- Changing importance of financial and real linkages.

Several presenters proposed studying the sources for the **comovement across and within national equity markets**. Andrew Karolyi (Fisher College of Business, Ohio State University) plans to use a new database on American Depositary Receipts (ADRs). ADRs are a mechanism for companies in emerging markets to raise risk capital in the United States. Karolyi will explore if the accelerating trend among firms in emerging markets to issue ADRs is an important driver underlying the rise in correlations *across* equity markets. Randall Morck (Business School, University of Alberta) proposes to examine how the degree of comovement of individual stocks *within* an emerging economy has changed over time and to what extent these changes can be related to changes in emerging economies' institutional environments and in the strengthening of their linkages to the global economy. He finds that comovement of individual stock returns declines as an economy develops stronger links with the world economy or that develops sounder financial, legal and economic institutions. Will Goetzman (Yale School of Management), in a joint project with Geert Rouwenhorst and Lingfeng Li (both also from Yale University), will examine the correlation structure of the major world equity markets over the past 150 years. First results show that correlations have varied considerably through time and have been highest during periods of economic and financial integration, such as the late 19th and 20th centuries.

Some presenters focused on **contagion spillovers in financial markets**. Graciela Kaminsky (George Washington University) and Carmen Reinhart (IMF) propose investigating the spread of market turbulence around the world. They reported on new indices to measure “weak” and “strong” global linkages at times of turbulence and evaluated the effects of turmoil in three crisis-prone emerging markets: Brazil, Russia, and Thailand. Preliminary results showed that turbulence in those countries spreads globally mainly when the turbulence affects asset markets in financial centers. René Stulz (Fisher College of Business, Ohio State University) plans to explain the determinants of daily net equity flows for nine emerging markets. Preliminary results show that these flows increase with stock returns in the host country and with stock returns in other countries, especially with stock returns in the U.S. Hali Edison (IMF) and Frank Warnock (Federal Reserve Board) plan to explore the determinants of U.S. investors’ holdings of emerging market equities, using new security-level data that includes information for 1,779 firms from the 1994 and 1997 Benchmark Survey of U.S. Holdings of Foreign Securities. They plan to explain investor’s holdings using variables such as firm-level financial data, the firm-level investable weight from EMDB, dummy variables for cross-listings and inclusion in MSCI indexes.

Another topic was the determinants of the **rise in comovement in real variables across countries.** Ayhan Kose (IMF) and Christopher Otrok (Department of Economics, University of Virginia), using a dynamic latent factor model, will assess the relative importance of global and country-specific components underlying the main macroeconomic aggregates across the G7 countries. Using this decomposition, they plan to examine the channels through which business cycles are transmitted across countries. Jean Imbs (London Business School) is similarly interested in explaining the international synchronization of aggregate activity and proposes quantifying the role of sectoral specialization patterns. His paper will use the information contained in the cross-section of bilateral output correlations, borrowing from the recent literature on the transmission of financial crises across countries.

Finally, two papers will address the changing importance over time of **real and financial linkages across countries**. Kristin Forbes (MIT Sloan) and Menzie Chinn (University of California, Santa Cruz) propose decomposing cross-country correlations in different asset markets (equities, bonds and exchange rates) into specific trade and financial linkages. Their analysis will measure two types of trade linkages: bilateral trade flows and competition within specific industries. Financial linkages will be decomposed into bank lending and portfolio flows across countries. Robin Brooks (IMF) and Marco Del Negro (Federal Reserve Bank of Atlanta) propose exploring if the recent rise in comovement across national stock markets can be explained in terms of a rise in real integration at the firm-level (through cross-border mergers and international sales), using balance sheet and financial data for companies in 40 developed and emerging markets. First results show that, consistent with similar evidence for international stock returns, the ability of country-specific shocks to explain international variation in asset and sales growth and the return on assets has fallen during the late 1990s. They argue that this evidence is consistent with the notion that real integration is partly driving the rise in stock market correlation.

Substantive and Methodological Issues Raised

The range of topics covered in the different proposals shows the complex nature of global integration. The diverse forces driving increased integration include not just increased trade and capital flows between countries, but also increased convergence in institutions, cross-listing on stock exchanges, greater outsourcing across borders by multinationals, and an increased role of sectoral shocks across countries.

Given this multifaceted nature of global linkages, the diversity in topics and approaches among the conference papers will provide a useful framework to better understand these complex issues. For example, some of the papers perform detailed studies of one specific type of global linkage (such as the Karolyi paper on ADR's, the Morck paper on institutions and the Edison and Warnock paper on US investment patterns). As a complement to these detailed case studies on specific linkages, other papers take a broader view and compare and contrast the role of different linkages over time (such as the Chinn and Forbes paper that compares the relative importance of trade and financial linkages, or the Brooks and Del Negro paper that looks at the relative importance of sectoral versus global shocks).

Against this background, authors are expected to address the following substantive issues for the "Global Linkages" conference:

- What are the potential problems of only focusing on certain factors driving integration and omitting other factors? How can this approach be reconciled with the main objective of the conference: to assess the changing importance of real and financial linkages?

- Given the variety of factors that could drive the increase in comovement across markets, does increased comovement provide direct evidence of increased global integration? On the one hand, Goetzmann et al. (2001) show that stock market correlations are higher on average during periods of integration than during periods of segmentation. One the other hand, Heathcote and Perri (2001) and Hau and Rey (2002) argue that the link between financial and real integration is hardly straightforward. The former argue that financial integration may be the result of changes in the correlation of real shocks, while the latter argue that greater stock market comovement may be driven by market incompleteness rather than real integration. Due to these issues, future research needs to carefully specify whether they are explaining "comovement" or "integration."

- What are the benefits of using disaggregated data? Edison and Warnock use firm-level balance sheet variables to control for fundamentals in equity returns, while Chinn and Forbes and Imbs use industry-level information to control for sectoral shocks. But can micro-level data be successfully aggregated to fully explain macro-level relationships?

- Papers on financial linkages only look at equity markets. Should the analysis extend to other financial markets? For example, what is the role of the safe-haven effect working through bond markets?

Looking ahead to the conference next year

This collection of papers will be discussed at the conference next year. The overall goal of that conference will be to generate a quantitative assessment of how important different cross-country linkages are in practice, by country and industry. More specific questions likely to be addressed by the conference are:

- **A quantitative assessment of how important different international linkages are across countries and industries:** what are the linkages by which country- and region-specific shocks are transmitted globally? Have these linkages become more important in recent years or have the underlying shocks themselves become more global?

- **How has the balance shifted among cross-country linkages between real linkages (international trade) and financial linkages (capital flows)?**

- **To what extent does the rise in comovement of real and financial series across countries reflect a long term trend towards closer integration and to what extent does it reflect short term factors?** Has there been a rise in financial linkages that cannot be explained in terms of real and financial shocks (contagion)?

- **What is the role of firms (multinationals, FDI, mutual funds) versus individuals (falling transaction and information costs in portfolio diversification) in promoting the change in cross-border linkages?**

- **What role have government policies played in the evolution of cross-border linkages and what policies should governments pursue going forward?** Are short and medium-run isolation strategies effective, given the changing nature of cross-country linkages? Do exchange rate regimes interact with real and financial linkages? Are there benefits to diversification across industries and commodities? Should policy coordination among the G-3 be enhanced to promote exchange rate stability and what would be the implications for emerging markets?