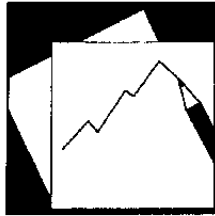


Working Paper

INTERNATIONAL MONETARY FUND



WP/03/81

IMF Working Paper

Trade, Finance, Specialization, and Synchronization

Jean Imbs

IMF Working Paper

Research Department

Trade, Finance, Specialization, and Synchronization

Prepared by Jean Imbs¹

Authorized for distribution by Ashoka Mody

April 2003

Abstract

The views expressed in this Working Paper are those of the author(s) and do not necessarily represent those of the IMF or IMF policy. Working Papers describe research in progress by the author(s) and are published to elicit comments and to further debate.

The paper investigates the determinants of business cycles synchronization across regions. It uses both international and intranational data to evaluate the linkages between trade in goods, trade in financial assets, specialization and business cycles synchronization using a system of simultaneous equations. The results are as follows: (i) Simultaneity is important, as both trade and financial openness have a direct and an indirect effect on cycle synchronization. (ii) A variety of alternative measures of financial integration suggest that regions with strong financial links are significantly more synchronized, though they are also more specialized. (iii) Specialization patterns have a sizable effect on business cycles, beyond their reflection of intra-industry trade, and of openness to goods and assets trade. (iv) The estimated role of trade is in line with existing models once intra-industry trade is controlled for. The results relate to a recent strand of international business cycle models with incomplete markets and transport costs, and, on the empirical side, point to an important omission in the usual criteria defining an optimal currency area, namely specialization patterns.

JEL Classification Numbers: F41, E32

Keywords: Trade, specialization, financial openness, international business cycle, optimal currency area

Author's E-Mail Address: jimbs@london.edu

¹ Jean Imbs, London Business School, Department of Economics. This paper was prepared for the IMF conference on "Global Linkages," held at the International Monetary Fund in Washington, D.C., on January 30–31, 2003. The author wishes to thank Marianne Baxter, Aart Kraay, Glenn Otto, Andrew Rose, Bent Sorensen, and participants at the IMF's Global Linkages conference for helpful suggestions. Most of this paper was written while the author was visiting the Research Department at the IMF, whose hospitality the author gratefully acknowledges. An earlier version of the paper was circulated under the title "Sectors and the OECD Business Cycle." All errors are the author's.

	Page
I. Introduction	3
II. Methodology and Econometric Issues	6
A. The System	7
B. Data and Measurement	10
C. Three-Stage Least Squares and Heteroscedasticity	15
III. Trade, Finance, Specialization, and Synchronization	16
A. Equation-by-Equation Estimates	16
B. Simultaneity and Channels	17
C. Measures of Effective Financial Integration	20
D. The Channels Between U.S. States	21
IV. Robustness	23
A. GMM Estimates	23
B. Alternative Measure of Trade	23
C. Hodrick-Prescott Filter	23
D. All Sectors	23
E. Yearly Data	24
F. Monetary Policy	24
G. Size	24
V. Conclusion	25
Appendix: Sensitivity Analysis	26
Text Tables:	
1a. Summary Statistics across Countries	29
1b. Summary Statistics across States	29
2a. Unconditional Correlations across Countries	29
2b. Unconditional Correlations across States	29
3. Selected Minima and Maxima	30
4. Equation-by-Equation Estimations	31
5. Simultaneous Estimations	32
6. Alternative Measures of Financial Integration	33
7. U.S. States	34
8a. Channels to Business Cycles Synchronization	35
8b. Channels to Business Cycles Synchronization—International Data	35
8c. Channels to Business Cycles Synchronization—International Data	35
Text Figures:	
1. Direct and Indirect Channels: Equation-by-Equation Evidence in the Literature	36
2. Direct and Indirect Channels: Simultaneous Evidence	37
References	38