Banking globalization and international business cycles: Cross-border chained credit contracts and financial accelerators

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Abstract

This paper constructs a two-country DSGE model to study the nature of the recent financial crisis and its effects that spread immediately throughout the world owing to the globalization of banking. In the model, financial intermediaries (FIs) enter into chained credit contracts at home and abroad, engaging in cross-border lending to entrepreneurs by undertaking cross-border borrowing from investors. The FIs as well as the entrepreneurs in two countries are credit constrained, so all of their net worths matter. Our model reveals that under FIs’ globalization, adverse shocks that hit one country affect the other, yielding business cycle synchronization on both the real and financial sides. It also suggests that the FIs’ globalization, net worth shock, and credit constraints are key to understanding the recent financial crisis.

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1. Introduction

The recent financial crisis demonstrates the importance of a global linkage between the financial market, the financial system, and the real economy. The deterioration in the U.S. subprime mortgage market impaired financial intermediaries’ (FIs’) capital. Combined with banking sector globalization, this led to the global malfunctioning of the financial market and the financial system, which weakened world demand. Fig. 1 demonstrates those recent global downturns. GDP and investment dropped around 2007 not only in the United States but also in Japan and the euro area; in particular, in Iceland and Ireland, we observe volatile changes in GDP and investment.

The crisis caused cross-border lending to decline. Stock prices dropped in the major stock exchange markets. That impaired FIs’ capital. FIs’ net worth deteriorated in the United States, Japan, the euro area, and corporate bond spreads jumped in those areas. That further decreased world GDP and investment, creating the adverse feedback loop. Standard macroeconomic models have not, however, captured those global linkage via FIs, because FIs and the financial markets are treated as a veil.

In this paper, we construct a dynamic stochastic general equilibrium (DSGE) model to shed light on the nature of the recent financial crisis associated with its international propagation under banking globalization. In particular, we investigate whether and under which conditions our model yields a global economic downturn, as was observed in the recent financial crisis. First, by constructing the model, we simulate responses of real and financial variables to different shocks, asking which shock is responsible for the recent global economic downturn. Second, we ask whether globalization enhances business cycle synchronization, simulating economic responses under varying degrees of globalization. Third, we ask whether credit frictions, in particular, the presence of credit-constrained FIs, enhance business cycle synchronization, comparing our model with one that omits FIs’ credit constraint.

Finally, we draw implications for various policy measures, discussing the effects of monetary, capital injection, and macroprudential policies on the financial market and the real economy at home and abroad.

In the model, FIs enter into chained credit contracts at home and abroad. Following Hirakata et al. (2009, forthcoming, HSU) the credit...
Fig. 1. Global downturns in the recent financial crisis.
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