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Measuring the interconnectedness of financial institutions

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ABSTRACT

This paper uses sophisticated empirical methodology to measure the interconnectedness of financial institutions in five developed economies – France, Germany, Japan, UK and USA – for the period January 2000 to November 2009. The study goes beyond the conventional use of first and second moments of returns and uses the timevarying equity price of risk methodology to measure the level of convergence of the financial sectors in the countries of interest. More specifically, Kalman filter convergence tests are applied to the weekly equity price of risk data to measure the interconnectedness between these countries' and the US finance sectors. Results indicate the presence of short-term timevarying interconnectedness of the finance sectors of France, Germany and the UK with that of the US and steady-state longer term interconnectedness only between Germany and the US. Short-term and long-term steady-state interconnectedness between Japan and the US is not evident. We conclude that going forward in an environment of increased interconnectedness of international financial markets, a coordinated global financial regulatory policy with discretionary allocation of resources and execution strategy at a national level is the preferred regulatory structure to ensure sound operations of international financial systems.

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1. Introduction

Over the past 24 months the world has experienced a financial crisis of unprecedented nature and scale. A long period of abundant liquidity, rising asset prices and low interest rates in the context of international financial integration and innovation led to the build-up of global macroeconomic

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imbalances as well as a global "search-for-yield" and general under-pricing of risk by investors. Regulators in some cases facilitated, and in other cases failed to respond to, the build-up in imbalances. The abundant liquidity induced a rapid expansion of credit in many developed and emerging countries. Mortgage finance was one of the high growth areas, both in the US and elsewhere, and contributed to a bubble in global real estate prices. Financial innovation increased systemic vulnerability in a number of ways. The growth of the mortgage market, especially in the US, was supported by financial innovation in structured finance and credit derivatives as well as by an active secondary market for mortgage-related securities. Moreover, both regulated and unregulated financial institutions became more 'interconnected' via over the counter markets with bilateral clearing and settlement arrangements. At the same time, the favourable macroeconomic environment, increased competition, technological advances, and growing asset prices caused financial institutions to move down-market, to lower credit underwriting standards, to engage in riskier trading activities with maturity mismatches and to rely excessively on quantitative risk models.

The slowdown and subsequent decline in US housing prices since 2005 was the trigger for the unravelling of the highly leveraged and unsound lending that had been building over time. These weaknesses first became apparent in the area of subprime lending, although other market segments (prime mortgage loans, commercial real estate, leveraged loans, etc.) were subsequently affected as well (World Bank, 2008). The financial turmoil, coupled with significant ongoing financial de-leveraging, commodity price shocks and necessary adjustments in housing and other markets caused a sharp slowdown in economic growth in both developed and developing countries in the world. As a result of the crisis some of the largest and most venerable banks, investment houses, and insurance companies have either declared bankruptcy or have had to be rescued financially. Nearly all industrialized countries and many emerging and developing nations announced economic stimulus and/or financial sector rescue packages. Several countries resorted to borrowing from the International Monetary Fund as a last resort. The crisis has exposed fundamental weaknesses in financial systems worldwide, demonstrated how interconnected and interdependent economies are today, and has posed vexing policy dilemmas.

The process for coping with the crisis by countries across the globe has involved government intervention and changes in the financial system to reduce risk and prevent future crises. The crisis has reaffirmed some fundamental tenets of financial sector policymaking, such as the need for a solid financial infrastructure, including sound accounting and auditing standards, effective collateral registration and enforcement systems, well-functioning payments and settlement systems, and well designed corporate governance structures. At the same time, the crisis is also prompting a reconsideration of certain elements of financial sector policymaking, including regulation and supervision (Nanto, 2009). Policy proposals to change specific regulations as well as the structure of regulation and supervision at both domestic and international levels have been coming forth through the legislative process from recommendations by international organizations such as the International Monetary Fund, Bank for International Settlements, and Financial Stability Board (Forum). The proposed regulatory changes will need to be coordinated among nations to avoid migration of business and transactions to less regulated markets. In an international marketplace of multinational corporations, instant transfers of wealth, fast communications, and globalized trading systems for equities and securities, if regulations in certain countries are anomalous or significantly more "burdensome" than those in other industrialized nations, business and transactions could migrate towards other markets. However, despite the evident need for an internationally coordinated regulatory approach, there was a divergence in view among country leaders in relation to the implementation of government stimulus packages in the industrialized countries during the April 2009 G-20 London Summit,[1] showing preference towards traditional country-specific interventionary approaches rather than a more structured global approach (Nanto, 2009).

[1] At the April 2009 G-20 London Summit, a schism arose between the United States and the U.K., who were arguing for large and coordinated stimulus packages, and Germany and France, who considered their automatic stabilizers (increases in government expenditures for items such as unemployment insurance that are triggered any time the economy slows) plus existing stimulus programmes as sufficient.

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