



A cross-country financial accelerator: Evidence from North America and Europe

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Abstract

A growing literature has examined the importance of credit-market imperfections for macroeconomic fluctuations, the so-called ‘financial accelerator.’ A related literature has provided evidence of international and regional comovements in macroeconomic fluctuations. We tie together these strands of the literature in that we investigate the importance of both cross-country and country-specific credit cycles in explaining output fluctuations. Using data for four major economies and two world regions from 1973 to 2001, we find that both regional and country-specific components of indicators of credit availability are powerful in explaining output movements. This research provides the first empirical evidence of a cross-country financial accelerator.

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1. Introduction

It is well known that credit-market conditions may have important effects on an economy’s business cycle (see Bernanke et al., 1996, 1999; Hubbard, 1998, and the references therein). A

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number of authors have argued that these effects may be amplified at the macroeconomic level so that, for example, adverse shocks to the economy are exacerbated by worsening credit-market conditions which generate increasing credit rationing which, in turn, adversely affects economic activity, and so on in a vicious circle. The generic term for this effect, which arises in a number of models involving credit-market imperfections, is the ‘financial accelerator.’ Spurred by these theories, a growing empirical literature has provided evidence supporting the existence of a link between indicators of credit availability and macroeconomic fluctuations at the country level, suggesting that credit-market conditions tend to impact significantly on measures of real activity over the business cycle (e.g. [Bernanke et al., 1999](#); [Gertler and Lown, 1999](#); [Mody and Taylor, 2003](#)).

A separate strand of research has investigated the existence of cross-country linkages in macroeconomic fluctuations, generally providing convincing evidence that business cycles of major industrialized economies are highly correlated ([Backus et al., 1995](#); [Baxter, 1995](#); [Sarno, 2001](#)). For example, using dynamic factor analysis, [Gregory et al. \(1997\)](#) decompose aggregate output, consumption, and investment for the G7 countries into factors that are common across all countries and aggregates, common across aggregates within a country, and specific to each individual aggregate. In quarterly data for the period from 1970 through 1993, fluctuations in all aggregates are found to contain world and country-specific common components that are both statistically significant and quantitatively important.¹

Other studies argue that business cycle comovements are stronger for subsets of countries, so that it is possible to identify a world component in macroeconomic fluctuations as well as regional and country-specific components. In particular, several studies provide evidence in favor of the existence of a world business cycle or a European business cycle (e.g. [Artis et al., 1997](#); [Artis and Zhang, 1997](#); [Bergman et al., 1998](#); [Imbs, 2003](#); [Lumsdaine and Prasad, 2003](#)). This evidence seems to suggest that, in addition to a world component that characterizes output comovements across countries, one might also expect a regional component, common to a subset of countries, and a country-specific component.²

To date, however, the literature on the financial accelerator and the literature on international business cycles have moved in parallel. In particular, researchers have not investigated the extent to which international and regional components of credit cycles may be important for the international and regional transmission of business cycles. This is the purpose of the research reported in this paper. Using Kalman filtering maximum likelihood techniques and vector autoregressive (VAR) modeling, we examine the dynamic interactions linking real activity to international and regional components of an indicator of credit availability. The international and regional components of real activity and credit variables are first extracted and analyzed using multivariate Kalman filtering techniques applied to dynamic multiple indicator-multiple cause (DYMIMIC) models of the relevant time series for four G7 countries over the 1973–2001 sample period.³ The four countries we examine are the US and Canada, which we view as comprising the North American region, and Germany and France, which we view as representative of the European region. The dynamic interactions linking these cross-country

¹ In a study of postwar economic growth across the G7 countries, using nonlinear equilibrium correction models [Sarno \(2001\)](#) also provides evidence supporting the existence of significant spillover effects in economic growth dynamics across the G7, which appear to be largely driven by the US business cycle.

² Using a world dynamic factor model, [Kose et al. \(2003\)](#) argue that the finding of a European business cycle commonly reported by this literature may be an artifact of limited samples.

³ See [Engle and Watson \(1981\)](#) for an early application of DYMIMIC modeling.

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