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Do better-capitalized banks lend less? Evidence from European banks

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ABSTRACT

We examine the link between bank capital and earning assets in five European countries during 1989–2012 using panel cointegration techniques. We find that higher bank capital is associated with a higher volume of earning assets, including bank loans. However, we also find some evidence that bank capitalization would impact negatively on the growth of bank lending at capital-to-asset ratios above 15%, which is below the ratio mandated for some UK-headquartered banks in the UK's 2013 Bank Reform Act.

1. Introduction

The 2007–2009 financial crisis has led to widespread support for the use of capital requirements as a policy tool and higher capital requirements have featured prominently in recent regulatory reforms (e.g., Yellen 2011; Hanson et al. 2011; Admati and Hellwig 2013).[1] However, the effect of changing regulatory capital requirements is controversial. On the one hand, if the Modigliani–Miller theorem applies to banks, changes in the composition of a bank's liabilities should not affect the overall funding cost and hence the volume and structure of banks' activities (Modiliani and Miller 1958). On the other hand, various frictions in the market for bank equity—such as the tax deductibility of debt interest payments, asymmetric information (Myers and Majluf 1984), and debt overhang (Myers 1977) could cause changes in capital requirements to have real effects. In particular, a main argument that banks deploy against higher equity requirements is that equity is a costly form of funding that results in a reduction in bank lending.[2] In this paper, we try to shed light on the likely impact of changes in bank capital ratios by examining the link between bank capital and earnings assets in a panel of European banks

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[1] Recent regulatory reforms that increase bank capita-asset ratios include the 2011 Dodd-Frank Wall Street Reform and Consumer Protection Act in the US, the 2013 Financial Services (Banking Reform) Act in the UK, and the recommendations of the international regulatory framework for banks in the Basel III Accord.

[2] For example, in the context of the post-2007-2009 regulatory debate, the Institute for International Finance—a lobby group for the major international banks—asserted that additional capital requirements for its members could result in 3.2% lower output by 2015 in these economies than would otherwise be the case (Institute for International Finance 2011).

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Table 1
Summary statistics for European Banks, 1989–2012.

	Asset/Liability	Mean	Standard deviation	Minimum	Maximum	Number of banks
France	Capital	11.87	1.85	7.87	18.17	127
	Total earning assets	14.59	2.06	8.74	21.47	
	Loans	13.60	2.30	4.84	20.07	
	Deposit	14.19	2.17	4.99	20.82	
Germany	Capital	11.07	1.63	7.01	18.09	245
	Total earning assets	13.85	1.84	7.61	21.85	
	Loans	13.04	2.17	4.62	20.57	
	Deposit	13.54	1.91	3.15	21.25	
Italy	Capital	11.23	1.69	7.32	18.33	447
	Total earning assets	13.51	1.89	9.49	21.13	
	Loans	12.89	2.01	3.23	20.56	
	Deposit	13.06	1.90	8.48	20.49	
Spain	Capital	12.79	1.82	8.01	18.02	55
	Total earning assets	15.39	2.04	9.23	20.52	
	Loans	14.61	2.37	8.06	19.97	
	Deposit	15.17	2.02	8.91	20.07	
United Kingdom	Capital	12.39	2.13	8.10	19.01	106
	Total earning assets	14.90	2.43	9.11	22.06	
	Loans	13.83	2.80	5.99	21.25	
	Deposit	14.53	2.46	5.28	21.56	

across five countries for the period 1989–2012. Our results suggest that bank capital is associated with a higher volume of bank earning assets, including bank loans. However, we also find some evidence that bank capitalization would impact negatively on the growth of bank lending at capital-asset ratios above 15%.

2. Recent empirical literature

Several recent studies make a direct connection between changes in capital requirements and bank lending behavior. For example, Ediz et al. (1998) studied UK bank behavior during 1989–1995 and reported that capital requirements significantly affected capital ratios, but that banks adjusted to increase in capital requirements by directly boosting their level of capital rather than reducing lending. Francis and Osborne (2009) estimate a target capital ratio for UK banks during 1996–2007 and regress bank lending behavior on the deviation of the actual capital ratio from target; they report that a one percentage point increase in capital requirements resulted in a fall in total lending of 0.8% and a fall in risk-weighted assets of 1.6% after one year. Berrospide and Edge (2010) model how differences between actual and targeted capital ratios affect the growth of bank loans in a sample of 165 US bank holdings companies for 1992–2009 and report that banks with a capital buffer exhibited higher loan growth. Aiyar et al. (2014) use UK bank data for 1998–2007 to examine whether foreign branches offset reductions in lending by regulated banks; they report that the average effect of a one percentage point increase in capital requirements was a cumulative reduction in the growth of lending to private nonfinancial firms of 5.7–8.0 percentage points. Bridges et al. (2014) estimate the effect of changes in capital requirements on bank capital ratios and bank lending in the UK during 1990–2011 and find that banks respond to an increase in capital requirements by reducing the growth of lending across different sectors of the economy, but that loan growth mostly recovers within three years. The study closest to ours is Buch and Prieto (2014) who analyse the link between bank capital and bank loans in the long-run using panel evidence for German banking groups during 1965–2009. They employ a cointegrated panel error-correction model that captures both short-run fluctuations in bank loans and the adjustment to deviations from the long-run cointegration relationship; they report that higher bank capital tended to be associated with higher business loan volume with no evidence for a negative effect.

3. Data, methodology and results

In contrast to the single country empirical studies cited above, we focus on the link between bank capital and earning assets in a data panel of five European countries using panel cointegration techniques that allow us to pool the long-run information contained in the panel. Specifically, we examine the long-run relationship between capital and banks' earning assets (total earning assets and, separately, total bank loans) using annual bank-level data from balance sheets and income statements for a total of 980 banks in these countries. The data are sourced from Bankscope for the period 1989–2012 and give a total of 17,735 observations. Summary statistics for the key variables by country are reported in Table 1.

Our empirical model focuses on the long-run link between bank capital and earning assets. In the short-run, bank earning assets are assumed to fluctuate around their long-run trend in response to shocks that move them away from their trend and induce an error-correction mechanism that returns earning assets to their steady state. The methodology follows three steps. The first step is to determine the order of integration of the natural logarithm of the level of earning assets, deposits and capital. We do this using Pesaran's (2007) panel unit root test, which allows for cross-sectionally dependence due to