

# Discussion of “Did the EBA Capital Exercise Cause a Credit Crunch in the Euro Area?”\*

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## 1. Introduction

The impact of capital regulation on bank lending is an area of permanent interest for academics, industry commentators, and regulators. New changes in capital regulation and continued macroprudential efforts to regulate banks across the globe following the 2007–9 financial crisis have spurred a wave of research into the effects of changes in regulatory capital on bank lending. Since banks play a central role in the economy by facilitating business through financial intermediation, it is important that they remain well capitalized enough to continue lending and operating as viable institutions during a crisis. Regulators then use minimum capital requirements to reduce banks’ excessive risk taking and to ensure the solvency of the banking sector, in an effort to avoid the negative externalities caused by bank failures and the costs to the economy of their financial collapse.

There is, however, a trade-off between the need for enhanced capital regulation and the potentially detrimental effects on the real side of the economy caused by excessive regulation. These effects, of course, could lead to restricted credit availability and thus could impose unnecessary costs on economic activity. Finding the precise balance between the benefits and the costs of new capital regulation is therefore essential, which is why academics and regulators must seek to better understand the magnitude of the impact of regulatory changes, and their implications for bank lending in anticipation of those changes.

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The empirical literature on the effects of regulatory capital on bank credit supply has found that changes in minimum capital requirements reduce bank lending.<sup>1</sup> Work in this literature usually faces some identification challenges, such as separating how much of the change in bank credit is demand or supply driven or identifying the extent to which a lending contraction is indeed caused by changes in capital regulation. For example, regulatory changes could be announced well in advance, giving banks enough time to preemptively respond to the new regulation. The paper by Jean-Stéphane Mésonnier and Allen Monks (this issue) contributes to our understanding of the relationship between capital requirements and the lending behavior of large banks in Europe by analyzing the banks that were subject to the capital exercise implemented by the European Banking Authority (EBA) in 2011.

Unlike previous stress tests, the EBA capital exercise was a one-off exercise aimed at restoring confidence in the European banking sector. The capital exercise was announced in October 2011 and required banks to raise their core tier 1 capital ratio to 9 percent by June 2012. The capital exercise was implemented in the context of adverse developments in European capital markets, brought about by the sovereign debt crisis. The novelty in the EBA capital exercise was the explicit account of a capital buffer against bank exposures to sovereign debt. Furthermore, the capital exercise came as a somewhat remedial action following the EBA stress test in July 2011. This stress test was widely criticized in Europe because it did not account for sovereign debt exposures and because it gave passing marks to some large banks that, a few months later, failed or had to be recapitalized (for example, the Dexia Group). The EBA capital exercise was thus aimed at restoring investor confidence and reassuring markets that banks had enough capital to withstand the financial storm associated with the sovereign debt crisis.

The paper by Mésonnier and Monks is both interesting and timely. The authors exploit monthly balance sheet data for about 250 banks from the Eurosystem. These banks belong to about sixty of the largest banking groups that were subject to the EBA capital

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<sup>1</sup>See, for example, Brinkmann and Horvitz (1995), Peek and Rosengren (1995, 1997), Gambacorta and Mistrulli (2004), and more recently, Aiyar, Calomiris, and Wieladek (2014).

exercise. The paper provides empirical evidence of a contractionary effect associated with the tightening of regulatory capital ratios in the EBA exercise. In particular, the paper finds that an increase in the tier 1 capital by 1 percent of risk-weighted assets is associated with a 1.1 percent decrease in bank lending. This result is consistent with previous findings for banks in other latitudes.<sup>2</sup> More importantly, the paper's results suggest a short-term response of bank loan supply to changes in regulatory capital ratios. As mandated by the EBA capital exercise, banks had a short time span—about nine months—to increase their capital positions and fulfill the requirement.

In this discussion, I raise some confounding factors in the explanation of bank lending. Some of these have been already addressed by the authors and some others may be potential avenues for future research. For example, the revised paper addresses an important issue with this type of analysis, which is whether the capital exercise was indeed exogenous and truly unanticipated. I also emphasize other factors affecting the supply of bank credit, such as the role of bank lending standards and the potentially mitigating effects of the liquidity provision by the European Central Bank (ECB), that would need to be accounted for to ensure that the impact of the capital exercise is indeed accurately measured.

## **2. The Effect of the EBA Capital Exercise on Bank Lending**

### *2.1 Anticipated or Unexpected Change?*

One possible explanation for the contraction seen in European bank lending is that it merely reflected preemptive actions by the banks to adjust their balance sheets before the exercise was implemented. This is a salient concern because immediately after the results of the July 2011 stress tests were released, the EBA explicitly recommended that national supervisory authorities in participating

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<sup>2</sup>See, for example, Francis and Osborne (2009) for UK banks and Berrospide and Edge (2010) for U.S. large bank holding companies. These papers find a positive impact of capital on loan growth, indicating that banks with surplus capital tend to lend more. The implication of this result is that raising capital requirements relative to existing capital ratios would lower lending, all else equal.

countries take remedial actions (i.e., to increase capital) regarding banks with core tier 1 capital ratios below 5 percent and with significant sovereign debt exposures. Thus, it is possible that by October 2011, four months later, some of these banks might have taken the necessary steps to reduce their exposures by increasing their capital positions or cutting their lending.

Moreover, the press release that followed the publication of the capital exercise results in October 2012 stated that “in line with the recommendation, capital strengthening had not led directly to a significant reduction in lending into the real economy. A deleveraging process had already started before the capital exercise and will need to continue in an orderly fashion to ensure long term repair of banks’ balance sheets” (EBA 2012). This statement again suggests that the credit supply reduction started before the capital exercise. Thus, the extent to which the loan contraction identified in the paper is the result of the remedial actions would make the authors erroneously attribute the loan contraction to the increased capital requirements mandated by the capital exercise.

One way to address this concern is to link the information on bank capital from previous stress tests to the capital exercise results. The capital exercise used almost the same banks that were subject to the stress test in July 2011; of the ninety banking groups involved in the July stress tests, about sixty of them were subject to the capital exercise. In the revised paper, the authors followed this approach and identified the banks with capital shortfalls in the July stress-test exercise (e.g., banks with core tier 1 capital below 5 percent under stress scenarios) or with capital positions above but close to the minimum capital requirement. The authors then verified that these banks, either having or close to having a preexisting capital shortfall, maintained capital shortfalls by the time the October capital exercise was conducted. Finding that banks that participated in the stress test maintained their capital positions at the beginning of the capital exercise is favorable evidence that the exercise was in fact unanticipated, which further bolsters the paper’s findings.

## *2.2 Other Explaining Factors*

Another possible factor that could explain the lending contraction identified in the paper is the tightening of bank lending standards.

To control for this possibility, the authors could have used data from the quarterly ECB Bank Lending Survey, which covers 124 banks in the euro area.<sup>3</sup> For example, the January 2012 Bank Lending Survey shows a significant tightening of lending standards (from 16 percent to 35 percent for loans to non-financial corporations) during the fourth quarter of 2011, precisely when the capital exercise was undertaken. Furthermore, since the results of the Bank Lending Survey are available by country, it would have been possible to include an explicit measure of lending standards in the country-level loan growth regressions.

Mésonnier and Monks acknowledge a potential mitigating factor: the fact that the ECB liquidity injections before and during the period they analyze may have reduced the deleveraging pressures experienced by banks. More specifically, the authors refer to the potential mitigation effect of the two three-year long-term refinancing operations (LTROs) conducted in December 2011 and in February 2012 for a total of about EUR 1 trillion.

Although there is no publicly available information on the liquidity injections received by individual banks, there is information at the country level (e.g., see van Rixtel and Gasperini 2013). Therefore, one way to account for the mitigation of the LTROs would have been to use country-level data of the uptake of ECB liquidity injections by country, and then to examine whether the countries that received the liquidity support were also those with banking sectors experiencing the largest capital shortfalls. This would have added support to the idea that liquidity injections moderated the impact of the capital exercise. Table 1 shows that this could indeed have been the case. The global and sovereign debt crisis in Europe increased the dependence of banking sectors on central bank liquidity, particularly in Spain and Italy, which had banks with the largest capital shortfalls at the time of the capital exercise.

Finally, potential future work in this area may exploit the multinational nature of the capital exercise in order to measure the impact

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<sup>3</sup>See, for example, Ciccarelli, Maddaloni, and Peydró (2013), who use the euro-area Bank Lending Survey at the country level to identify the transmission of monetary policy shocks through the credit channel. These authors identify different transmission channels by looking at detailed information from the survey, such as bank lending conditions and borrowers' creditworthiness and net worth.

**Table 1. Capital Shortfall and the ECB's Liquidity Provision by Country**

Country	Number of Banks	Overall Capital Shortfall Euros (billion)	ECB LTRO Amounts Euros (billion) <sup>a</sup>
Austria	2	3	0
Belgium	1	0	40
Cyprus	2	4	0
Denmark	4	0	0
Finland	1	0	0
France	4	7	173
Germany	12	13	74
Hungary	1	0	0
Ireland	3	0	67
Italy	5	15	273
Luxembourg	1	0	0
Malta	1	0	0
Netherlands	4	0	0
Norway	1	2	0
Poland	1	0	0
Portugal	4	7	51
Slovenia	2	0	0
Spain	4	25	329
Sweden	4	0	0
United Kingdom	4	0	0
Total	61	75	1,007

**Source:** EBA website, EU capital exercise, available at <http://www.eba.europa.eu/risk-analysis-and-data/eu-capital-exercise>. <sup>a</sup>Taken from van Rixtel and Gasperini (2013).

of the tightening of capital regulation on cross-border lending. It may be interesting to try to identify the cross-country spillover effects of capital shocks, such as the capital exercise, along the lines of the work in the literature on the international transmission of global shocks (e.g., Cetorelli and Goldberg 2012). Another potential avenue for further research would be to study whether European banking groups are a source of strength or weakness for foreign affiliates in the face of regulatory capital shocks, along the lines of the capital

integration and multi-national banking literature (e.g., De Haas and van Lelyveld 2010).

### 3. Concluding Remarks

The paper by Mésonnier and Monks (this issue) addresses an interesting and timely topic. Consistent with previous work on the impact of bank capital on lending, the paper provides empirical support for a contractionary effect on bank lending resulting from the tightening of regulatory capital ratios mandated by the EBA capital exercise. More importantly, the paper identifies a short-term response of loan supply to changes in capital regulation and finds this response in a very difficult environment. At the time when the capital exercise was undertaken, the euro area was shaken by market disruptions brought on by the sovereign debt crisis.

As key discussion points, I highlighted the need for the empirical analysis to provide evidence that the capital exercise was indeed unanticipated and recommended using bank data on previous stress tests for that purpose. I also suggested other loan supply determinants, such as the role of bank lending standards and the effects of the ECB liquidity provision, that would need to be accounted for in assessing the effects of the EBA capital exercise on bank lending.

### References

- Aiyar, S., C. W. Calomiris, and T. Wieladek. 2014. "Does Macro-pru Leak? Evidence from a UK Policy Experiment." *Journal of Money, Credit and Banking* 46 (s1): 181–214.
- Berrospide, J. M., and R. M. Edge. 2010. "The Effects of Bank Capital on Lending: What Do We Know, and What Does It Mean?" *International Journal of Central Banking* 6 (4): 5–54.
- Brinkmann, E., and P. Horvitz. 1995. "Risk-Based Capital Standards and the Credit Crunch." *Journal of Money, Credit and Banking* 27 (3): 848–63.
- Cetorelli, N., and L. Goldberg. 2012. "Banking Globalization and Monetary Transmission." *Journal of Finance* 67 (5): 1811–43.
- Ciccarelli, M., A. Maddaloni, and J.-L. Peydró. 2013. "Heterogeneous Transmission Mechanism: Monetary Policy and Financial Fragility in the Eurozone." *Economic Policy* 28 (75): 459–512.

- De Haas, R., and I. van Lelyveld. 2010. "Internal Capital Markets and Lending by Multinational Bank Subsidiaries." *Journal of Financial Intermediation* 19 (1): 1–25.
- European Banking Authority. 2012. "EBA Publishes Final Report on the Recapitalisation of European Banks and Paves the Way for the Transition to the CRDIV Framework." Press Release, October 3.
- Francis, W., and M. Osborne. 2009. "Bank Regulation, Capital and Credit Supply: Measuring the Impact of Prudential Standards." Occasional Paper No. 36, Financial Services Authority.
- Gambacorta, L., and P. E. Mistrulli. 2004. "Does Bank Capital Affect Lending Behavior?" *Journal of Financial Intermediation* 13 (4): 436–57.
- Peek, J., and E. Rosengren. 1995. "Bank Regulation and the Credit Crunch." *Journal of Banking and Finance* 19 (3–4): 679–92.
- . 1997. "The International Transmission of Financial Shocks: The Case of Japan." *American Economic Review* 87 (4): 495–505.
- Van Rixtel, A., and G. Gasperini. 2013. "Financial Crises and Bank Funding: Recent Experience in the Euro Area." BIS Working Paper No. 406.