

The Impact of Policy Interventions on Systemic Risk across Banks

- Non-Technical Summary -

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Abstract. This paper investigates the impact of policy interventions on systemic risk across banks. Using a unique bank-level dataset that consists of 118 banking institutions from 15 European countries, the estimation of systemic risk is based on the loss generated by the reduction of the banks' market value of total assets under extreme events.

In the first stage of the analysis, a bottom-up approach is employed to analyze the negative spillovers from a bank to the system (contribution to systemic risk) and a top-down approach to analyze the negative spillovers from the system to a particular bank (exposure to systemic risk). The estimations are performed over the 2005-2011 period using the *Conditional Value at Risk* framework of Adrian and Brunnermeier (2011) and its asymmetric extension of López-Espinosa et al. (2012). The empirical results indicate the following:

- a fairly large number of domestic systemically important banks (D-SIBs) that are not included in the Financial Stability Board's list of global systemically important banks and also a significant number of systemically vulnerable banks;
- there is a progressive increase of banks' contribution and exposure to systemic risk in the period immediately after the September 2008 financial events;
- banks with a high individual risk level (*VaR*) pose a greater contribution to the loss of the whole banking system and the impact becomes stronger when accounting for asymmetric effects;
- shocks to local funding conditions on interbank markets and high yields on long term government bonds enhance banks' systemic contribution and exposure.

In the second stage of the analysis, a large country-level dataset of market structure, regulatory framework and macroeconomic variables are explored within a *Pooled Ordinary Least Squares* empirical setting. The findings show that the emergency policy interventions implemented by national authorities immediately after the Lehman Brothers collapse have a significant impact on systemic risk (state loans and guarantees have a significant adverse effect on systemic risk, while banks can significantly reduce both their systemic contribution and vulnerability in countries that adopt recapitalization or nationalization programs). Moreover, policy interventions have a

different impact on systemic risk across banks with various risk profiles:

- the adverse effect of state loans is exacerbated by high capitalization levels, while bank size and the degree of maturity mismatch reverse the negative impact on systemic risk;
- the adverse impact of state guarantees can be overturned for large banks or well-capitalized banks, and, surprisingly, for banks with deteriorating loans portfolio;
- the beneficial effect of recapitalizations becomes harmful for banks that are large in size, took a lot of credit risk or are exposed to a high liquidity risk;
- the positive impact of nationalizations turns harmful for large and well capitalized banks, as well as for banks with high credit risk.

In sum, the picture that arises is one in which state loans or guarantees by providing only temporary (liquidity) relief may even lead to more bank risk-taking in effect increasing systemic risk contribution and exposure, but (fortunately enough) mainly for smaller banks. While assets acquisitions may be beneficial for large and potentially illiquid banks, especially recapitalizations but also nationalizations do provide for a definite reduction in banks' systemic risk contribution and exposure, but this effect seems easier to achieve for smaller or already safer banks.

Key words: systemic risk, policy interventions, risk profile, Conditional Value at Risk, G-SIBs