

# **Business cycle effects on capital requirements: scenario generation through Dynamic Factor analysis**

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## **Abstract**

*In this paper, we focus on the measurement of the capital charges of a bank against expected and unexpected losses affecting the bank loan portfolio. In particular, we depart from the standard one factor model representation of portfolio credit risk, since we consider an heterogeneous multifactor bank loan portfolio, and we account for stochastic dependent recoveries. We estimate and identify the common (systemic) shock by fitting a Dynamic Factor model to a large number of macro credit drivers. In particular, we, first, consider the case of a systemic shock, interpreted as the state of the business cycle. Then, we disentangle the common shock in demand and supply innovations and we examine their impact on the bank capital requirements. The scenarios are obtained by employing Montecarlo stochastic simulation.*

*Keywords:* Risk management, default correlation, Dynamic Factor

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