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Credit Risk and State Space Methods

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Credit risk is the main risk in the banking book. As a result, time-varying credit risk conditions matter for intermediaries' profitability, solvency, and overall financial stability. This dissertation studies various aspects of joint credit and macro-financial conditions, in particular how these interact and lead to default clusters. Important sources of systematic default rate variation, such as contagion risk, the business cycle, the default cycle, shifts in credit supply, etc., are time varying and inherently unobserved. These time-varying factors are known to econometricians as unobserved components. These components can be backed out from observed data using filtering and smoothing methods. This thesis consists of four main essays, each applying state space methods to a credit risk problem at hand. As such, this thesis increases our understanding of interrelated credit and macro-financial conditions, in particular before and during financial crises such as the most recent one.

Bernd Schwaab (1978) graduated cum laude from the Tinbergen Institute's MPhil program in 2007 with a concentration in Econometrics and Finance. He started a PhD at Tinbergen Institute and VU University Amsterdam in the same year. As of August 2010 he has been working as a Research Economist at the European Central Bank, Financial Research Division.