The impact of loan loss provisioning on bank capital requirements☆,☆☆

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Abstract

This paper shows that the revised loan loss provisioning based on the International Financial Reporting Standards (IFRS) and the Generally Accepted Accounting Principles (GAAP) implies a reduction of Tier 1 capital which levies an additional burden on banks. The paper finds in a counterfactual analysis that these changes are more severe (i) during economic downturns, (ii) for credit portfolios of low quality, (iii) for banks that do not tighten capital standards during downturns, and (iv) under a more lenient definition of significant increase in credit risk (SICR) under IFRS. Hence, the provisioning rules further increase the procyclicality of bank capital requirements. Adjustments of the SICR threshold or capital buffers are suggested as ways to mitigate negative effects on the banking industry.

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1. Introduction

Loan loss provisioning has historically been based on the incurred loss model and increases following economic downturns (Laeven and Majnoni (2003) and Bikker and Metzemakers (2005)). Gunther and Moore (2003), Fonseca and González (2008) and Cummings and Durrani (2016) find that this approach has led to a non-transparent management of loss reserves and income smoothing. Hence, the International Accounting Standards Board (2014) and the Financial Accounting Standards Board (2016) decided to replace the existing standards with a more forward looking approach based on expected losses of financial instruments. The International Financial Reporting Standards 9 (IFRS 9) and Generally Accepted Accounting Principles Topic 326 (GAAP 326) are intended to ensure more transparency and less procyclicality (§ BC 16 and § BC 79 of International Accounting Standards Board (2011) and Financial Accounting Standards Board (2011)).

On the other hand, Basel's *regulatory capital requirements* under pillar I are designed to cover unexpected losses because expected losses have been recognized by loan loss provisioning and hence deducted from bank capital. The Basel Committee on Banking Supervision (2011, 2015) acknowledges that the computation of risk measures differ in the regulatory and accounting definition. Basel defines loan loss provisions as the 12-month expected losses, whereas IFRS 9 defines loan loss provisions as the 12-month expected loss for unimpaired assets and as expected losses for the entire remaining lifetime for financial instruments that have experienced a significant increase in credit risk (SICR). GAAP 326 applies the expected lifetime loss concept to all assets regardless of whether they have experienced significant changes in credit risk. Furthermore, Basel excludes macroeconomic risk factors, while IFRS 9 and GAAP 326 consider the current economic state and forecasts of future states for the instruments that have experienced a SICR.

The European Banking Authority (2016) and the European Commission (2016) expect a decrease of the Core Tier 1 capital (CET 1) ratio due to IFRS 9 and GAAP 326 and propose in accordance with the Basel Committee on Banking Supervision (2017) a transition phase of five years to lower the additional burden on banks. The Basel Committee on Banking Supervision (2016) points to the volatility of the new provisioning approach. This paper quantifies the magnitude of Tier 1 capital changes and the cyclicality of capital.

The paper offers the following contributions. First, it shows the link between IFRS 9 and GAAP 326 loan loss provisioning and Basel bank capital regulation.[1] Second, the impact on the eligible regulatory capital of IFRS 9 and GAAP 326 is analyzed in a counterfactual analysis by studying the IFRS 9 and GAAP 326 rules for US American bonds between 1991 and 2013, it being a period in which these rules were not applied. The analysis includes different economic periods, portfolio credit qualities, SICR thresholds as well as reinvestment strategies.

The paper explores the procyclical reduction of Tier 1 capital levels due to loan loss provisioning and how institutions might mitigate the impact in dependence of several factors: (i) portfolio quality, (ii) portfolio reinvestment strategy, and (iii) SICR criterion. The paper further analyzes how regulators may assist banks in these efforts.

The remainder of the paper is organized as follows. Section 2 describes theoretical requirements of IFRS 9 as well as GAAP 326 and the regulatory handling of provisions. Section 3 provides the data description. Section 4 estimates probabilities of default (PD) and loss rates given default (LGD) and computes 12-month expected losses as well as lifetime expected losses. A formula for the lifetime expected loss is developed and requirements on the SICR criterion are discussed. Finally, Section 5 shows the impact of expected loss based loan loss provisioning on the eligible regulatory capital and discusses implications for institutions, regulators and supervisors.

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[1]We focus on institutions that use the internal ratings-based (IRB) approach. The framework for institutions using the standardized approach is different and will be revised in the future as discussed by the Basel Committee on Banking Supervision (2016, 2017).

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