



Cross-country determinants of bank income smoothing by managing loan-loss provisions

Ana Rosa Fonseca *, Francisco González

University of Oviedo, School of Economics and Business, Spain

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Abstract

This paper studies the determinants of income smoothing by management of loan-loss provisions in banks around the world. Using a panel database of 3221 bank-year observations from 40 countries and controlling for unobservable bank effects and for the endogeneity of explanatory variables, we find that bank income smoothing depends on investor protection, disclosure, regulation and supervision, financial structure, and financial development. Results suggest there is less bank income smoothing not only with the strength of investor protection, but also with the extent of accounting disclosure, restrictions on bank activities, and official and private supervision, while there is more income smoothing with market orientation and development of a country's financial system.

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1. Introduction

Bank income smoothing in the form of managing loan-loss provisions (LLP) varies from country-to-country depending on variables such as investor protection, disclosure, regulation, supervision, financial structure, and financial development. Ball et al. (2000) and Fan and Wong (2002) highlight the role of regulation and legal enforcement in explaining international differences in the quality of financial statements. The institutional environment has a direct effect on earnings management according to Leuz et al. (2003), who report differences in earnings management of publicly traded firms across 31 countries. They conclude that earnings management declines with investor protection; strong protection limits insiders' ability to

acquire private-control-benefits, which diminishes the incentives to conceal a firm's performance.

We ask whether Leuz et al.'s findings (2003) on earnings management in the industrial firms are applicable to highly leveraged firms like banks. Our analysis uses a panel database of 3221 bank-year observations to analyze the influence on income smoothing by managing LLP of investor protection, accounting disclosure, restrictions on bank activities, official and private supervision, and financial structure and development. We also compare income smoothing in publicly traded and non-publicly traded banks. We focus on bank manipulation of LLP because most of the empirical literature in banking has analyzed LLP for two basic reasons. First, banks have substantial latitude in determining the amount of provisions. Second, banks' high leverage makes them quite vulnerable to volatility in asset values, prompting adequate LLP, which become banks' main accrual; this has important effects on bank stability.

High leverage and the safety nets intended to avoid industry contagion in the event of a bank run give rise to

* Corresponding author. Address: Department of Business Administration and Accounting, University of Oviedo, Avenida del Cristo S/N, 33071 Oviedo, Spain. Tel.: +34 985103694; fax: +34 985103708.

E-mail address: arfon@uniovi.es (A.R. Fonseca).

the well-known moral hazard problem of risk-shifting. If there are greater incentives for bank insiders to shift risk, so too are there more incentives to engage in earnings management to hide their risk-shifting. Our primary hypothesis is therefore that the more efficient bank regulation and supervision proves to be in limiting bank risk, the fewer the incentives for bank managers to smooth bank earnings. This analysis is particularly relevant in the evaluation of the effect of the new Basel Capital Accord (Basel II) on the reliability of bank financial statements. Basel II emphasizes the strengthening of regulation (e.g. minimum regulatory capital requirements in Pillar 1) and of supervision by authorities (Pillar 2), as well as market discipline (Pillar 3) as tools to increase bank stability. The approach of the third Pillar of Basel II consists in strengthening market discipline by proposing a set of requirements and recommendations concerning public disclosure practices for banks. We provide new evidence on the effectiveness of the requirements set up in the third Pillar of Basel II by analyzing the impact of bank disclosure on income smoothing. Additionally, when analyzing the influence of official supervision on income smoothing, we also provide evidence on the type of relationship (complements or substitutes?) between Pillar 2 and Pillar 3. For instance, if official supervision improves (worsens) the reliability of financial statements by reducing (increasing) income smoothing, it also strengthens (weakens) the effectiveness of market discipline mechanisms. In this case, Pillar 2 would complement Pillar 3.

Empirical analysis, by and large US-based, analyzes whether earnings before LLP have a positive coefficient. A positive coefficient would indicate income smoothing, since it suggests that LLP are high when earnings are high and low when bank earnings are low. Results are mixed for US banks. Greenawalt and Sinkey (1988) and Wahlen (1994), among others, find a positive relation between LLP and bank earnings; while Beatty et al. (1995) and Ahmed et al. (1999) find no evidence of earnings smoothing. We extend the study of the LLP-earnings relationship to an international sample of banks by applying the GMM difference estimator to control for unobservable bank effects, and for the endogeneity of explanatory variables and the dynamic behavior of LLP. Our results indicate that better investor protection and stricter legal enforcement reduce incentives to smooth earnings in banking. Additional evidence shows that incentives to smooth earnings decline with accounting disclosure, restrictions on bank activities, and official and private supervision. Incentives increase with market orientation and development of a country's financial system.

Shen and Chich (2005) have also analyzed earnings management in an international bank sample. Their research is substantially different from ours in several ways. First, Shen and Chich look at earnings management in general, while we focus on the use of LLP, the main bank accrual, to smooth earnings. Second, we include in the analysis the influence of additional country variables, such

as the exact nature of bank regulation and supervision as well as the structure and development of a country's financial system. Third, we analyze differences between publicly and non-publicly traded banks. Finally, we control for individual bank effects that are not explained by the variables explicitly included in the regressions and for the endogeneity of explanatory variables and the dynamic behavior of LLP.

The rest of the paper is structured in the following way. Section 2 discusses the hypotheses regarding the differences in income smoothing between publicly and non-publicly traded banks, and the cross-country determinants of income smoothing. Section 3 describes the database and methodology. Section 4 reports the empirical results of income smoothing in each country and the results of the cross-country determinants. Finally, Section 5 presents our conclusions.

2. Hypotheses

There are a number of reasons for income smoothing, most of which assume it has negative connotations. Income smoothing improves the risk perception of a bank for its investors, regulators, and supervisors. There may also be managerial self-interest to smooth earnings. Income smoothing may also be the result of perceived bankruptcy concerns and/or can be intended to discourage investors from acquiring private information that could then be used to trade against uninformed shareholders selling for liquidity reasons. These reasons imply that managers adjust earnings figures for subjective reasons, producing some kind of private-control-benefit for insiders that may ultimately diminish shareholder value (the *private-control-benefits* hypothesis).¹ However, analysis of the uses made of LLP to manage earnings must control for two alternative uses of LLP by bank managers and supervisors: the *risk-management* hypothesis and the *capital-management* hypothesis.

The risk-management hypothesis emphasizes supervisors' interest in reducing procyclicality of LLP and capital. It assumes that banks and regulators define a specific level of protection against credit losses and banks set aside loan-loss reserves according to the value of expected losses and raise capital according to unexpected losses. In other words, credit risk is built up in a boom and materializes in a downturn, so banks should recognize the underlying risk and build up loan-loss reserves in good times to be drawn on in bad times. As a result, provisions should therefore move with income (income-smoothing pattern) and with the economic cycle to return the ratio to its ideal (equilibrium) value every time it is modified by a random shock. Seen from this perspective, bank supervisors point out that the LLP-earnings link has a positive effect on banks, which clashes with the negative connotation suggested by the

¹ See Goel and Thakor (2003) for a more detailed review.

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