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**Appendix to: Bank Valuation and Accounting Discretion During a Financial Crisis**

### **The use of loan loss discretion during crisis times**

Loan loss provisioning during a crisis is likely to reflect a bank's tendency to apply discretionary provisioning. To test this, we construct an index of a bank's tendency to apply discretionary loan loss provisioning following Bushman and Williams (2011). Specifically, loan loss opacity is the bank-level incremental adjusted R-squared attributed to the earnings before provisions and tax variable in a bank-level regression with loan loss provisioning as dependent variable. A high incremental explanatory power of this earnings variable is taken to imply a high level of discretion, as it suggest that a bank determines its loan loss provisioning with a view to smoothing earnings rather than to reflect expected loan losses. The loan loss provisioning regression model follows Laeven and Majnoni (2003) and Bushman and Williams (2011) and is estimated for each bank  $i$  using pre-2007 data as follows:

$$\begin{aligned} LLP_{it} = & \alpha_i + \gamma_t + \beta_1 EBL_{it} + \beta_2 \Delta NPL_{it} + \beta_3 NCO_{it} + \beta_4 LLR_{it} + \beta_5 CAP_{it-1} \\ & + \beta_6 LA_{it-1} + \beta_7 A_{it-1} + \beta_8 \Delta L_{it-1} + \varepsilon_{it} \end{aligned} \quad (4)$$

The dependent variable in this model is the ratio of loan loss provisions to lagged total assets ( $LLP$ ). Explanatory variables are earnings before taxes, extraordinary items, and loan loss provisions, scaled by lagged loans ( $EBL$ ), and a range of variables that capture the determinants of loan loss provisioning as reflecting expected loan losses. These control variables are the change in nonperforming loans during reporting period scaled by lagged loans ( $\Delta NPL$ ); net charge-offs scaled by lagged loans ( $NCO$ ); lagged loan loss reserves scaled by lagged loans ( $LLR$ ); book value of equity scaled by total assets ( $CAP$ ); loans scaled by

total assets ( $LA$ ); the natural logarithm of total assets ( $A$ ); and loan growth in real terms ( $\Delta L$ ). Eq. (3) is estimated for each bank both with and without the  $EBL$  variable that measures the sensitivity of loan loss provisions to earnings, and the bank-level loan loss opacity variable is the incremental adjusted  $R$ -squared across the two regressions attributed to the  $EBL$  variable.

Column 1 of Supplemental Table 1 displays the results of a loan loss provisioning regression analogous to column 1 of Table 5 and including the loan loss opacity variable interacted with a dummy variable for 2008. The loan loss opacity variable for 2008 obtains a negative coefficient that is significant at 1%. Banks with a revealed pre-crisis aptitude for provisioning discretion thus appear to have reduced their loan loss provisioning relatively much during the crisis year 2008. Column 2 adds interaction terms of the loan opacity variable with the MBS variable and jointly with the MBS and 2008 dummy variables. Now only the interaction of loan loss opacity with the MBS and the 2008 dummy variables obtains a negative and statistically significant coefficient, indicating that banks with high loan loss opacity reduced their loan loss provisioning in 2008, especially if they were highly exposed to MBS. This result remains after we add interactions of loan loss opacity with the share of real estate loans and jointly with the share of real estate loans and the 2008 dummy variable in column 3. Overall, we conclude that banks with a tendency to apply discretionary provisioning in normal times provisioned less during the financial crisis of 2008, especially if they have significant MBS exposure.

**References**

Bushman, R., Williams, C., 2011. Accounting discretion, loan loss provisioning, and discipline of banks' risk-taking. Unpublished working paper. University of North Carolina, Chapel Hill.

Laeven, L., Majnoni, G., 2003. Loan loss provisioning and economic slowdowns: too much, too late. *Journal of Financial Intermediation* 12, 178–197.

### Supplemental Table 1. Loan loss provisioning, mortgage-backed securities, and accounting opacity

The dependent variable is the ratio of loan loss provisioning to loans. Share of real estate loans is the fraction of real estate loans in total loans. MBS is ratio of MBS to assets. Loan loss opacity is the bank-level incremental adjusted R-squared attributed to earnings before provisions and tax in the bank-level earnings smoothing regression with loan loss provisioning as dependent variable (following Laeven and Majnoni (2003) and Bushman and Williams (2011)). 2008 denotes observations from year 2008. Regressions include firm and quarterly period fixed effects (not reported). Explanatory variables apart from loan loss opacity are lagged one quarterly period. Data are based on quarterly observations over the period 2001 to 2008. \*, \*\*, and \*\*\* denote significance at the 10%, 5% and 1% levels, respectively.

VARIABLES	(1)	(2)	(3)
Share of real estate loans (t-1)	-0.696*** (0.107)	-0.702*** (0.107)	-0.786*** (0.120)
MBS (t-1)	-0.253** (0.125)	-0.378*** (0.146)	-0.386*** (0.146)
Share of real estate loans (t-1) × 2008	0.682*** (0.106)	0.723*** (0.106)	0.696*** (0.119)
MBS (t-1) × 2008	-1.609*** (0.196)	-0.916*** (0.243)	-0.913*** (0.243)
Loan loss opacity × 2008	-0.875*** (0.131)	-0.097 (0.206)	-0.700 (1.035)
MBS (t-1) × Loan loss opacity		1.295 (0.950)	1.587 (0.966)
MBS (t-1) × Loan loss opacity × 2008		-8.982*** (1.895)	-9.015*** (1.899)
Share of real estate loans (t-1) × Loan loss opacity			1.727 (1.093)
Share of real estate loans (t-1) × Loan loss opacity * 2008			0.730 (1.268)
Observations	8,137	8,137	8,137
R-squared	0.358	0.360	0.360