The Informativeness of Discretionary LLPs during the Financial Crisis

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Discretion in Loan Loss Provisions (LLPs)

- While accounting rules govern the estimation of LLPs, the application of these rules requires significant *judgment and discretion* within the prescribed rules

- Accounting discretion: double-edged sword
  - Conveys insiders' private information → more informative
  - Managers' opportunistic behavior → less informative

Accounting Discretion in Banking during Crisis

- During the crisis, incentives to manipulate net income and capital ratios were high.

- Accounting discretion has been blamed:
  - Banks opportunistically under-provisioned during the financial crisis (Huizinga and Laeven 2012)
  - Decrease Transparency (Bushman and Williams 2015)
  - Exacerbate pro-cyclicality (Beatty and Liao 2011)

- In this study, we take an opposing perspective about accounting discretion during the crisis.

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Main Intuition

- Current loan portfolio risk depends jointly on the bank's past credit policies and current economic conditions.
- During periods when credit policies and economic conditions are stable, the past is a good predictor of the future.
- However, during periods when credit policies and/or economic conditions loss expectations reflecting past information are less informative, thus, making <u>discretionary LLPs potentially more informative.</u>

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Research Questions

- Does discretion in estimating LLPs improve or weaken the informativeness of accounting numbers?
  - Informativeness: stock return tests
  - Informativeness: realized loss tests
  - Informativeness: Real decision making: exploited TARP setting
  - Did TARP funding alter the informativeness of discretionary LLPs. due to changes in lending policies?

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Main Findings

- Discretionary LLPs are more strongly associated with contemporaneous stock returns during financial crisis than during surrounding periods.
- Discretionary LLPs are more strongly associated with future credit losses during financial crisis than during surrounding periods
- Discretionary LLPs are relevant in government's approval decisions for TARP funding
- The TARP funding shock increases the error in discretionary LLPs more than expected LLPs
- **Together, our findings indicate that Accounting discretion has relevance! Especially during the financial crisis!**

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Measuring Discretion in LLPs

- Accounting researchers have developed expectation models for LLP's that have been used to partition LLP's into two components: Expected LLP's and Discretionary LLP's.

- We use an expectation model to identify a "normal" (expected) level of LLP.

$$LLP_{it} = \beta_{0t} + \beta_{1t}\, CHO_{it} + \beta_{2t}\, DNAL_{it} + \beta_{3t}\, IND_{it} + \beta_{4t}\, COM_{it} + \beta_{5t}\, SIZE_{it} + \beta_{6t}\, ALLOW_{it-1} + \varepsilon_{it}\,, \qquad (1)$$

- The "normal" or expected level of LLP component is based on publicly available risk proxies such as current charge-offs and non-accrual (performing) loans, the beginning allowance balance, and other controls.
- Making use of the LLP = Normal LLP + Discretionary LLP identity, we subtract the normal LLP from the total LLP to identify the "discretionary" LLP accrual for each bank in the sample.
- Discretionary LLPs can reflect private information regarding loan portfolio risk or managerial opportunism.

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When Discretion is Informative

H1a. Stock Returns

During the financial crisis, associations between discretionary LLPs and stock returns will be <u>negative</u> and larger in magnitude than during surrounding periods.

H1b. Future Credit Losses

During the financial crisis, associations between discretionary LLPs and future credit losses will be positive <u>and larger in magnitude than during surrounding</u> periods.

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Table 1

Economic Significance:
One std. dev. Change leads to –6% over a quarter.

Variable	(1) Whole Sample Q1/06 to Q2/10	(2) Pre-crisis Q1/06 to Q2/07	(3) During Crisis Q3/07 to Q4/08	(4) Post-crisis Q1/09 to Q2/10
DIS_LLP	–0.148***	–0.037	–0.303***	–0.071**
	(–3.185)	(–0.489)	(–3.474)	(–2.128)
EARN	0.034***	0.026	0.042***	0.035***
	(5.428)	(1.391)	(3.774)	(4.830)
EXP_LLP	–0.023	–0.166**	–0.020	–0.036
	(–0.472)	(–2.030)	(–0.172)	(–1.307)
Intercept	–0.044**	–0.009	–0.092**	–0.007
	(–2.167)	(–0.256)	(–2.177)	(–0.145)
N	5204	1660	1773	1771
Adj. R^2	0.070	0.032	0.109	0.068
Diff. in the *DIS_LLP* coefficients			(2) vs. (3)	(3) vs. (4)
			$\chi^2 = 20.40$	$\chi^2 = 27.02$
			$p = 0.000$	$p = 0.000$

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Table 2: Test of H1b

Variable	(1) Whole Sample Q1/06 to Q2/10	(2) Pre-crisis Q1/06 to Q2/06	(3) During Crisis Q1/08 to Q2/08	(4) Post-crisis Q1/09 to Q2/09
DIS_LLP	0.003***	0.002***	0.006***	0.003***
	(3.956)	(2.877)	(26.185)	(66.765)
$ALLOW_{t-1}$	0.238***	0.059***	0.240***	0.327***
	(4.601)	(4.033)	(14.363)	(10.802)
EXP_LLP	0.005***	0.007***	0.006***	0.003***
	(3.954)	(14.505)	(5.625)	(7.006)
IND	–0.005**	0.002***	–0.006***	–0.007***
	(–2.498)	(5.534)	(–9.528)	(–6.538)
COM	–0.002***	–0.000	–0.002***	–0.004***
	(–2.896)	(–0.762)	(–4.758)	(–3.796)
SIZE	0.000***	0.000**	0.000**	0.000**
	(3.529)	(2.532)	(2.475)	(2.314)
Intercept	–0.003***	–0.001***	–0.003***	–0.004***
	(–5.206)	(–7.957)	(–4.079)	(–2.758)
N	5695	1877	1870	1948
Adj. R^2	0.539	0.396	0.534	0.509
Diff. in the *DIS_LLP* coefficients			(2) vs. (3)	(3) vs. (4)
			$\chi^2 = 31.30$	$\chi^2 = 19.63$
			$p = 0.000$	$p = 0.000$

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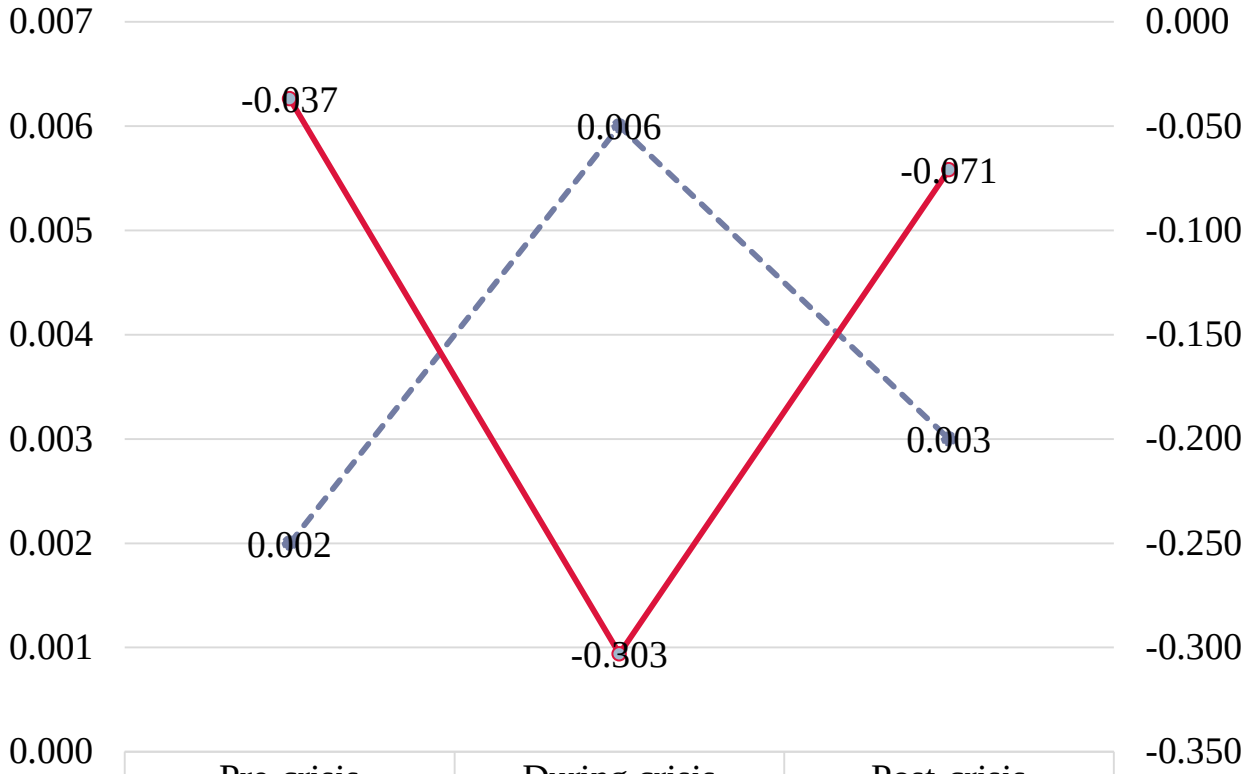
Fig. 1: Changes in informativeness of discretionary LLPs



	Pre-crisis	During crisis	Post-crisis
Future Charge-off Association	0.002	0.006	0.003
Stock Return Association	-0.037	-0.303	-0.071

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Hypothesis 2 & 3: Consequences of Accounting Discretion for Real Decision Making

- Are discretionary LLPs relevant in decision making by banks and the government?

- Weak Banks more likely to apply for TARP
- **H2: Discretionary LLPs are positively associated with the banks' probability of applying for TARP funding.**

- "Investor focus"
- **H3: Discretionary LLPs are negatively associated with TARP approval decisions.**

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Table 4: Test of H2 and H3

Variable	(1)	(2)	(3)	(4)	(5)	(6)
	Pr (Application = 1)		Pr (Approval = 1)		Pr (Approval = 1)	
	Main	Marginal	Main	Marginal	Main	Marginal
Discretionary LLPs	1.882*	3.8%	–1.975***	–6.0%	–2.464***	–7.0%
	(1.801)		(–3.422)		(–3.994)	
Expected LLPs	2.572**	10.3%	0.142	0.9%	0.071	0.4%
	(2.071)		(0.382)		(0.184)	
Beginning allowance	20.032	1.2%	–46.903**	–4.1%	–64.036***	–5.2%
	(0.510)		(–2.081)		(–2.735)	
Control variables	Included		Included		Included	
N	313		262		262	
Pseudo R^2	0.320		0.254		0.280	

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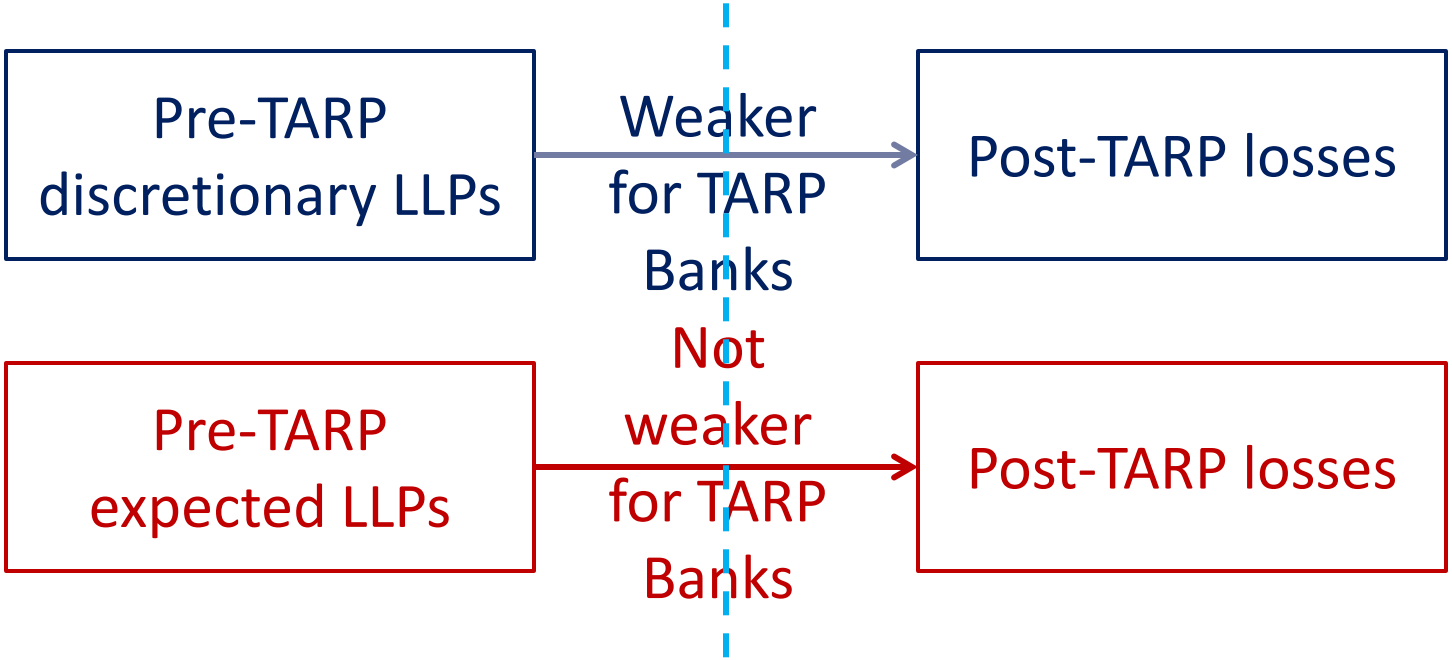
Hypothesis 4



H4A: TARP participation weakens the association between discretionary LLPs and future credit losses.
H4B: The association is weakened less for expected LLPs than for discretionary LLPs

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Table 5: Test of H4

Variable	(1)	(2)
	Future charge-offs	
Discretionary LLPs	0.007***	0.010***
	(6.568)	(7.351)
Discretionary LLPs × TARP injection		–0.008***
		(–3.837)
Expected LLPs	0.002***	0.003***
	(2.841)	(2.604)
Expected LLPs × TARP injection		–0.001
		(–0.981)
Beginning allowance	0.284***	0.320***
	(6.304)	(4.232)
Beginning allowance × TARP injection		–0.097
		(–1.060)
TARP injection		0.001
		(0.615)
Control variables	Included	Included
N	313	313
Adj. R^2	0.505	0.552

Hypothesis 5 and Table 7

- **H5: Banks receiving proportionately more TARP funds exhibited greater declines in the association between discretionary LLPs and future credit losses.**

Variable	(1)	(2)
	Future charge-offs	
Discretionary LLPs	0.002*	0.006**
	(1.861)	(2.563)
Discretionary LLPs × High TARP$		–0.006*
		(–1.923)
Expected LLPs	0.001*	0.002
	(1.874)	(1.598)
Expected LLPs × High TARP$		–0.001
		(–0.408)
Beginning allowance	0.204***	0.141*
	(4.153)	(1.822)
Beginning allowance × High TARP$		0.114
		(1.147)
Control variables	Included	Included
N	193	193
Adj. R^2	0.462	0.467

Conclusion

- Positive role of accounting discretion, especially during the financial crisis
- Accounting information is relevant not only in valuation and contracting, but also in **real decision making by banks and the government**
- Research supports current accounting practice of allowing managerial discretion
- Timely Topic: Rules changed last month (ASU 2016) Discretion yet to be determined!

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Thank you!

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Loan Loss Allowances and Provisions

- For most banks, credit risk associated with their loan portfolios is the most important overall risk exposure.
- Banks establish Allowances for expected credit losses called ALLL's (Allowances for Loan and Lease Losses).
- Banks increase their ALLL's by recording Loan Loss Provisions called LLP's (accountants call these provisions bad debt expense).
- Accounting researchers have developed expectation models for LLP's that have been used to partition LLP's into two components: Expected LLP's and Discretionary LLP's.

Troubled Asset Relief Program (TARP)

- Signed into law by President Bush on Oct 3 2008 to authorize the $700 billion program.
- Initially TARP was portrayed as a program for purchasing toxic assets (MBS's) from banks, but criticisms motivated an alternative approach.
- The Treasury announced a capital purchase program (CPP) on Oct 14 2008 with an application deadline of Nov 14 2008.
- Under CPP, banks participating in TARP issued preferred stock that the Treasury agreed to purchase. [This put the Treasury in the position of being an investor.]
- At the time CPP was announced, nine very large Banks had already agreed to participate.
- Other banks were invited to submit CPP applications.

Bank Applications under CPP

- Banks requesting CPP funding under TARP were required to submit an application to their primary bank regulators within 30 days.
- Bank regulators were tasked with reviewing applications and then forwarding them with recommendations to the Treasury for a final review.
- The Treasury approved many, but not all applicants.
- Some approved banks subsequently rejected CPP funding.
- The specific criteria used to select banks for CPP funding were never publicly revealed.
- However, several researchers have attempted to model the TARP selection process using various LOGIT and PROBIT regressions.

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Impact of TARP on Banks' Lending Decisions

- The objective of TARP was to stimulate the economy in the midst of the financial crisis.
- In response to large credit losses and liquidity issues, most banks dramatically reduced their lending activities and implemented ultra conservative lending policies to allocate the limited funds available for lending.
- CPP was designed to increase banks' capital to enable banks to ease their conservative credit policies and increase lending activities.
- Previous research has reported evidence that banks did in fact respond to TARP funding by relaxing their credit policies.

Overview of Analysis and Contribution

- We analyze the informativeness of both discretionary and expected LLP accruals during the financial crisis to both the stock market and to the Treasury.
- While many prior studies have analyzed the informativeness of discretionary LLP's to the stock market in earlier time periods, we are not aware of any market association tests during the financial crisis.
- Prior research has found negative associations between total LLP accruals and TARP funding decisions, but no distinction was made between discretionary and expected (non-discretionary) LLP's.
- The distinction between discretionary and non-discretionary accruals is important since our hypotheses predict that their effects are likely to vary and our results are consistent with the hypothesized differences.

Estimating the Discretion in LLPs

- We use an expectation model to identify a "normal" (expected) level of LLP.

$$LLP_{it} = \beta_{0t} + \beta_{1t}\, CHO_{it} + \beta_{2t}\, DNAL_{it} + \beta_{3t}\, IND_{it} + \beta_{4t}\, COM_{it} + \beta_{5t}\, SIZE_{it} + \beta_{6t}\, ALLOW_{it-1} + \varepsilon_{it}\,, \quad (1)$$

- The "normal" or expected level of LLP component is based on publicly available risk proxies such as current charge-offs and non-accrual (performing) loans, the beginning allowance balance, and other controls.
- Making use of the LLP = Normal LLP + Discretionary LLP identity, we subtract the normal LLP from the total LLP to identify the "discretionary" LLP accrual for each bank in the sample.
- Discretionary LLPs can reflect private information regarding loan portfolio risk or managerial opportunism.

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Research Issues:

- Research questions
  - RQ1: Are discretionary LLPs more informative during financial crisis than in surrounding periods?
  - RQ2: Are discretionary LLP's associated with the Treasury's investment decision (TARP)
  - RQ3: Government fund infusions (TARP) and informativeness of discretionary LLPs

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Conclusions

- Lower provisions during the LLPs imply better prospects than expected
- Discretionary LLPs are value relevant for both equity investor valuation and government investment
- Shock to lending policies may have lowered informativeness of discretionary LLPs

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