Duchin, Sosyura (2014). “Safer Ratios, Riskier Portfolios: Banks’ Response to Government Aid”,

Journal of Financial Economics 113 (1), 1-28.

Research Question

In 2008, governments all over the world have announced capital assistance to the financial system. Many economists and regulators debated about the effect of the bailout on Banks' risk taking behavior, as risk-taking and inadequate regulation led to the crisis in the first place.

- This paper studies whether and how the 2008 bailout (CPP) affected risk taking in credit origination and investment activities of U.S. banks.

Channels of bank operations: (1) retail lending, (2) corporate lending, and (3) investment activities.

Findings

Three non-mutually exclusive explanations for the observed increase in risk at approved banks:

(1) government intervention, (2) risk arbitrage, and (3) moral hazard.

- Main finding: A positive shock to capital need not result in credit expansion, but instead may lead to riskier lending and investments. After being approved for federal assistance, banks shifted their credit origination toward riskier mortgages/firms, and investments toward risky securities (MBS etc.).
- CPP capital likely played a role in approved banks' investment and lending decisions, these decisions reflected an increase in risk tolerance rather than low-risk arbitrage opportunities.
- Banks located in election districts of House members who served on key finance subcommittees during the development of CPP were more likely to be bailed out.

Empirical Strategy

$$Y_{i,b,c,t} = \beta_1 (\text{Loan to income}_{i,t}) + \beta_2 (\text{After CPP} \times \text{Approved bank}_b) + \beta_3 (\text{After CPP} \times \text{Loan to income}_{i,t})$$

$$+ \beta_4 (\text{Approved bank}_b \times \text{Loan to income}_{i,t}) + \beta_5 (\text{After CPP} \times \text{Approved bank}_b \times \text{Loan to income}_{i,t})$$

$$+ A_b + B_c + C_t + \alpha X_{b,t} + \delta V_{c,t} + \gamma Z_i + \varepsilon_{i,b,c,t}$$

where,

$Y_{i,b,c,t}$ = indicator that equals one if a loan application by customer ‘i’ at bank ‘b’ in the local market ‘c’ during year ‘t’ is approved. The primary measure of borrower risk is the loan-to-income ratio (Campbell and Cocco, 2011).

A_b, B_c, C_t are bank, local market, and time fixed effects.

$X_{b,t}$= bank characteristics: bank size, age, foreclosures, funding mix, and exposure to regional economic shocks

$V_{c,t}$= control for variation in borrower clientele and local credit market conditions.

Z_i = fixed effects for borrowers' demographics

Data

Sample period: January 2006 to December 2010.

Capital purchase program Data:

- Hand-collected data on the status of bank applications for federal assistance from Treasury website.
- Federal Financial Institution Examination Council (FFIEC) database has the Reports of Condition and Income (Call Reports) and Uniform Bank Performance Reports (UBPRs) filed by all active FDIC-insured institutions.
- FFIEC includes five banking regulators—the Federal Reserve Board of Governors (FRB), the Federal Deposit Insurance Corporation (FDIC), the National Credit Union Administration (NCUA), the Office of the Comptroller of the Currency (OCC), and the Consumer Financial Protection Bureau (CFPB).

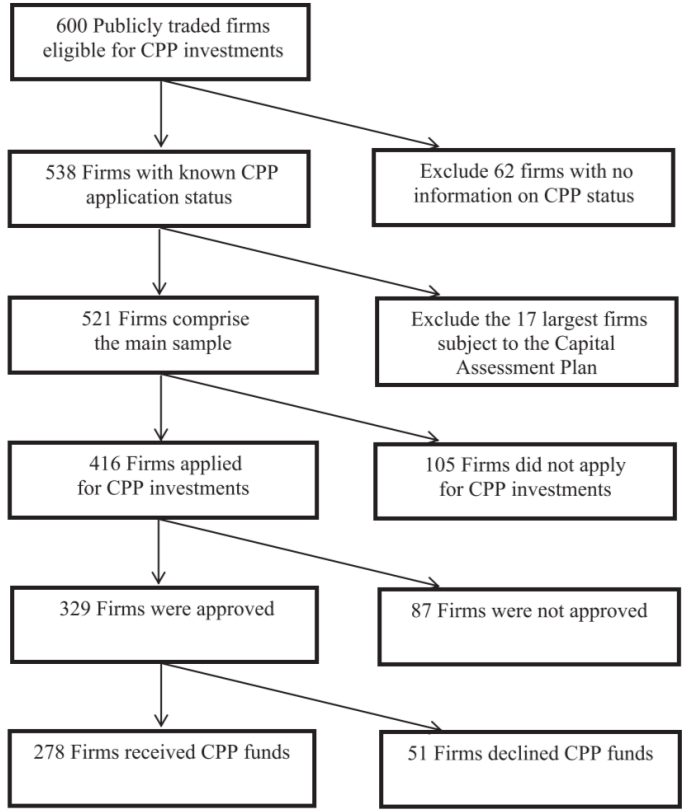

Fig. 1. Sample firms and their CPP applications. This figure illustrates the partitioning of firms based on the status of their CPP applications. The starting point for this partitioning is the universe of 600 publicly traded financial firms that were eligible for CPP assistance as of 3Q 2008.

Data

Loan Data:

- Mortgage application data from the Home Mortgage Disclosure Act (HMDA) Loan Application Registry, which covers about 90% of mortgage lending in the U.S.
- Data on corporate loan facilities are collected from DealScan. This data set covers large corporate loans, the vast majority of which are syndicated.

- Home vacancy rate from the USPS, per capita income and unemployment from the BLS.
- Gender, race, and ethnicity from census data

Thank you

Economic Reasoning

(1) Government intervention:

Federal capital infusions:

- Improved capitalization levels of approved banks, with their average Tier-1 capital ratios increasing by approximately 160 basis points relative to unapproved banks.
- Reduction in leverage at approved banks was more than offset by their shift toward riskier assets.

(2) Risk arbitrage:

- Risky assets, such as subprime mortgages and investment securities, were underpriced during the crisis, providing excess profit opportunities with low risk.
- CPP capital enabled banks to exploit these arbitrages, but no significant alpha is generated.

(3) Moral Hazard:

A bank's approval for government support signals an increase in the probability that this bank will be protected again in case of distress.

- The authors find that the increase in risk taking is stronger at larger banks, banks that are closer to financial distress, and banks that received multiple signals of government forbearance in the form of skipped dividends.
- They also find that approved banks increase their risk primarily by investing in assets with a high exposure to common macroeconomic risk, which is also reflected in an increase in banks' stock beta.