Discussion of:
"Bailouts, Time Inconsistency, and Optimal Regulation " by Chari and Pat

Lee E. Ohanian - FRB Minneapolis and UCLA

April, 2010

How Should Society Deal with TBTF?

Long history of "close" gov-industry connections

Stern and Feldman (2004) "Too Big To Fail"
Military-industry connnections - 1950s - 1970s
      "What is good for country is good for GM, what is good for
GM is good for country" (1953)
Government-sponsored cartels: WWI - late 1930s

Chari and Pat - Government can't avoid bailouts, so...
Restrict firm size - dominates bailout because *restriction on size &
on bankruptcy cutoff useful*.

(1) Contribution relative to the literature

(1) Contribution relative to the literature

But I know nothing about the literature...

(2) Time consistency and importance of "fire sales"
(3) If everything on table, what other policies may reduce bailouts?
(4) Other bailout issues in a different (complementary) framework

Elements of Chari-Pat's Analysis

Moral hazard - $\pi(A^h)$ increasing in unobserved manager effort

To get incentives right, contract requires bankruptcy threat (punishment), *but...*

After manager effort, inefficient to not rescue (some) firms...time consistency problem

Optimal contracting fundamentaly interconnected with ex-post inefficiency

$f(k_1, k_2)$: k_2 reallocated capital - differs from k_1

$$U(x) + \frac{\beta}{1-\beta}U(x) \geq \hat{U}(a) + \frac{\beta}{1-\beta}U^n$$

$$\hat{U} = \alpha_1[\pi_h(a)A_h + \pi_l(a)A_l]g(k_c) + R_2\hat{k}_2 - a - k_c$$
$$\hat{U}^G = \alpha_1[\pi_h(a)A_h + \pi_l(a)A_l]g(k_c) + \tilde{R}_2\hat{k}_2 - a - k_c$$

Because gov internalizes effect on price of k_2 - bailout more tempting for gov.

Fire Sales

In model, *fire sale prices* associated with price of reallocated factors.

Lots of reallocation regularly occuring - prices for factors often rise.

(1) 56 million job exits in a normal year - half of which are quits...60 million hires

(2) Is MPK clearly higher for incumbents - who by definition are unsuccessful - than for takeover firms, who are successful?

If Everything on Table, What Other Policies Could Reduce Bailouts?

Aligning incentives through...

If Everything on Table, What Other Policies Could Reduce Bailouts?

Aligning incentives through...

Tony Soprano Incentive Modification Program

If Everything on Table, What Other Policies Could Reduce Bailouts?

"Somebody Needs to Get Whacked" (Tony Soprano to underling)

What Other Policies Could Reduce Bailouts?

"Somebody Needs to Get Whacked" (Tony Soprano to underling)

"But Who? Johnny Spitalleri? Joey Tallarico?" (Underling to Tony Soprano)

What Other Policies Could Reduce Bailouts?

"Somebody Needs to Get Whacked" (Tony Soprano to underling)

"But Who? Johnny Spitalleri? Joey Tallarico?" (Underling to Tony Soprano)

"One of 'em. Any of 'em. But somebody needs to get whacked" (Tony Soprano to underling)

What Other Policies May Reduce Bailouts?

Somebody needs to get whacked...managment, shareholders, bondholders...somebody

Executive compensation restriction if bailout requested

What Other Policies May Reduce Bailouts?

Shareholders and bondholders taxed if bailout requested

Exploiting Fire Sales

Gordon Gecko model of government

　　Share prices fall to near zero (shareholders are getting whacked)

　　Gov buys shares at near zero price, then re-capitalize organization

Different spin on fire sales

Debt - equity conversion

Bailout Questions Outside Their Model

Who is bailed out? How large is bailout? How do interconnections play a role?

Citi - share price still 90% below peak
B of A - 50% below peak

Wells Fargo - 10% below peak
Goldman - 20% below peak

Production Technology with Bailouts

Want to capture 2 features of recent bailouts

(1) Perception some firms in a sector will decline considerably and...

(2) Collapse perceived to impose externality on others

Two intermediate sectoral inputs, X_1 and X_2

Sector 2 competitive, Sector 1 imperfectly competitive

Determining Bailouts in Technology with Externality

Firms hire inputs at price w.

$$
\begin{aligned}
Y &= f(X_1, X_2) \\
X_1 &= \left(\sum_i \alpha_i x_i^\theta \right)^{\frac{1}{\theta}}, \theta < 1 \\
\pi &: \quad x_{ih} = A l_i \\
(1-\pi) &: \quad x_{il} = A_i(x_j) l_i, A_i \tilde{} \; iid
\end{aligned}
$$

Gov spending G can provide additional resources to sector:
$X_1(G) > X_{1l}$

Factors Determining Who Bail'd and How Much

(1) Importance of sector 1 in aggregate production (Size & complementarity)

(2) Importance of firm i in sector 1 production

   Size, complementarity, interconnections

(3) How costly is bailout?
   Efficieny of government intervention
      Productivty of G
      Distortion from financing G

Factors Affecting Bailout - Aggregate Production

Sector 1 Output Elasticity

$$\eta_{yi} \equiv \frac{\partial Y}{\partial X_1} \frac{X_1}{Y} = \frac{\partial f}{\partial X_1} \frac{X_1}{Y}$$

Elasticity big if

Large complementarties (and $X_1 > 0$)

Sector is big ($X_1 >> 0$ & $\frac{\partial f}{\partial X_1} > 0$)

How big is banking? Is substitution elasticity small?

Factors Affecting Bailout - Sectoral Production

Within sector 1 elasticity

$$\frac{\partial X_1}{\partial x_i}\frac{x_i}{X_i} = \frac{\partial g}{\partial x_i}\frac{\alpha_i x_i}{X_1} + \sum_j \frac{\partial g}{\partial x_j}\frac{\alpha_j x_j}{X_1}x_j'(x_i)\frac{x_i}{x_j}$$

First term: Firm $i's$ size (TBTF)

Second term: Firm i's interconnections:

Share of firms impacted by i scaled by implicit share of x_i in x_j (TCTF)

Boils down to size of externality and importance of connected sectors

Figure 1 - Manufacturing Hours and the Money Supply
Index (Jan 1929=100)