Appendix
Confidence Banking and Strategic Default

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1 Proofs

1.1 Proof of Proposition 1

Since $s^*(\phi)$ is the signal that makes a good firm with a given reputation ϕ indifferent between covering a security in trouble or not, the condition at $s^*(\phi)$ is clearly

$$\beta E_{\theta|s^*}\left[V(\phi,\theta|\widehat{\tau}(s^*))\right] = R(\phi|s^*),$$

where $\widehat{\tau}(s_i) = 1 - Pr(E_j(\theta) < E_i(\theta)|s_i)$, which is the probability that investors expect a fundamental θ under the one the firm expects conditional on the signal s_i that the firm observes. Since at the cutoff s^* firms are indifferent between covering securities in trouble or not, $\widehat{\tau}(s^*)$ is the probability firms assign to investors believing θ is such that the firm covers securities in trouble, and hence the belief investors use to update reputation at the cutoff s^*.

The updated belief of the firm about the fundamental, after observing a signal s_i is

$$E_i(\theta|s_i) = \frac{\gamma_\theta \mu + \gamma_s s_i}{\gamma_\theta + \gamma_s}.$$

The updated distribution of the fundamental after the firm observes the signal s_i is

$$\theta|s_i \sim \mathcal{N}(E_i(\theta|s_i), \frac{1}{\gamma_\theta + \gamma_s}),$$

and the distribution of investors' signals s_j, conditional on the firm's signal s_i is

$$s_j|s_i \sim \mathcal{N}(E_i(\theta|s_i), \frac{1}{\gamma_\theta + \gamma_s} + \frac{1}{\gamma_s}). \tag{1}$$

Hence,

$$\begin{aligned} Pr\left(E_j(\theta) < E_i(\theta)|s_i\right) &= Pr\left(s_j < E_i(\theta) + \frac{\gamma_\theta}{\gamma_s}(E_i(\theta)-\mu)|s_i\right) \\ &= \Phi\left(\sqrt{\gamma}(s_i-\mu)\right), \end{aligned}$$

where $\gamma = \frac{\gamma_s\gamma_\theta^2}{(\gamma_\theta+\gamma_s)(\gamma_\theta+2\gamma_s)}$

As $\gamma_s \to \infty$, $\gamma \to 0$, then $\widehat{\tau}(s_i) = \frac{1}{2}$ for all s_i. Hence, in the limit the unique cutoff s^* is uniquely determined by $\beta E_{\theta|s^*}\left[V(\phi,\theta|\widehat{\tau}(s^*) = \frac{1}{2})\right] = R(\phi|s^*)$.

Investors update reputation based on their beliefs, which depend on their signals. When investors observe a signal s_j, they infer that the probability the firm observes a signal s_i below the cutoff $s^*(\phi)$, and decides not to cover securities in trouble, is

$$\widehat{\tau}(s_j) = 1 - Pr(s_i < s^*|s_j) = 1 - \Phi\left[\sqrt{\frac{\gamma_s(\gamma_\theta+\gamma_s)}{\gamma_\theta+2\gamma_s}}(s^* - \frac{\gamma_\theta\mu+\gamma_s s_j}{\gamma_\theta+\gamma_s})\right],$$

where Φ is just the standard normal distribution from equation (1). As $\gamma_s \to \infty$, $\widehat{\tau}(s_j) \to 0$ if $s_j < s^*(\phi)$ and $\widehat{\tau}(s_j) \to 1$ if $s_j > s^*(\phi)$. This implies that in the limit, whenever investors observe a signal above $s^*(\phi)$, they believe firms cover securities in trouble and update reputation. Similarly, whenever investors observe a signal below s^*, they believe firms do not cover securities in trouble and do not update reputation. **Q.E.D.**

1.2 Proof of Proposition 2

The proof applies for a given ϕ, hence for simplicity I denote $s^*(\phi)$ just as s^*.

Differentiating the condition

$$\beta E_{\theta|s^*}\left[V\left(\phi,\theta|\widehat{\tau}(s^*) = \frac{1}{2}\right)\right] = R(\phi|s^*) \tag{2}$$

that pins down s^* with respect to μ,

$$\frac{\partial\beta\ E_{\theta|s^*}\left[V(\phi,\theta|\widehat{\tau}(s^*))\right]}{\partial\mu} + \frac{\partial\beta\ E_{\theta|s^*}\left[V(\phi,\theta|\widehat{\tau}(s^*))\right]}{\partial s^*}\frac{ds^*}{d\mu} = \frac{\partial R(\phi|s^*)}{\partial s^*}\frac{ds^*}{d\mu} + \frac{\partial R(\phi|s^*)}{\partial\mu},$$

$$\left(\frac{\partial\beta E_{\theta|s^*}\left[V(\phi,\theta|\widehat{\tau}(s^*))\right]}{\partial s^*} - \frac{\partial R(\phi|s^*)}{\partial s^*}\right)\frac{ds^*}{d\mu} = \frac{\partial R(\phi|s^*)}{\partial\mu} - \frac{\partial\beta\ E_{\theta|s^*}\left[V(\phi,\theta|\widehat{\tau}(s^*))\right]}{\partial\mu}.$$

Recall that, since, $\frac{\partial \mathcal{N}(s^*)}{\partial \mu} < 0$, then $\frac{\partial R(\phi|s^*)}{\partial \mu} < 0$. Also $\frac{\partial \beta \ E_{\theta|s^*}[V(\phi,\theta|\widehat{\tau}(s^*))]}{\partial \mu} > 0$. From assumptions 1 and 2 the term in parenthesis is positive. Combining these results using the envelope condition shows that $\frac{ds^*}{d\mu} < 0$.

Intuitively, a decline in μ increases $R(\phi|s^*)$ for a given s^* (by an increase in the cumulative distribution up to s^*). This requires a larger s^* to raise $E_{\theta|s^*}\left[V(\phi,\theta|\widehat{\tau}(s^*))\right]$ and fulfill equation (2). This direct effect increases s^*. Furthermore, this increase in s^* implies a further increase in $R(\phi|s^*)$, which reinforces the direct effect generated by a lower μ. There is also a second effect that comes from reducing beliefs $\widehat{\tau}(s_i)$ and reputation updating at each s_i, (since $\widehat{\tau}(s_i) = 1 - \Phi\left(\sqrt{\gamma}(s_i - \mu)\right)$, weakly reducing $E_{\theta|s_i}\left[V(\phi,\theta|\widehat{\tau}(s_i))\right]$, for every signal s_i. Hence, a further increase in s^* is necessary to compensate for this reduction and still fulfill equation (2). **Q.E.D.**

1.3 Proof of Proposition 3

Value functions from issuing debt and securities, as $\gamma_s \to \infty$ (almost perfect information), are

$$U_G^D(\phi,\mu) = p(y+z) + \alpha_G\left[\beta E_{\theta|\mu} V(\phi'.\theta) - R_D(\phi)\right] \quad (3)$$

and

$$\begin{aligned} U_G^S(\phi,\mu) \ = \ & p(y+z) + \mathcal{N}(s^*(\phi,\mu))p\left[\beta E_{\theta|\mu,\theta<s^*} V(\phi,\theta) - R_S(\phi|s^*(\phi,\mu))\right] \\ & +(1-\mathcal{N}(s^*(\phi,\mu)))\alpha_G\left[\beta E_{\theta|\mu,\theta>s^*} V(\phi',\theta) - R_S(\phi|s^*(\phi,\mu))\right] \end{aligned} \quad (4)$$

respectively.

Since $\widehat{\alpha}_G = \mathcal{N}(s^*(\phi,\mu))p + (1-\mathcal{N}(s^*(\phi,\mu)))\alpha_G$ and $\mathcal{N}(s^*(\phi,\mu))E_{\theta|\mu,\theta<s^*}V(\phi',\theta) + (1-\mathcal{N}(s^*(\phi,\mu)))E_{\theta|\mu,\theta>s^*}V(\phi',\theta) = E_{\theta|\mu}V(\phi'.\theta)$ we can rewrite the difference between these two values as

$$U_G^S(\phi,\mu) - U_G^D(\phi,\mu) = \underbrace{\left[\alpha_G R_D(\phi) - \widehat{\alpha}_G R_S(\phi|s^*(\phi,\mu))\right]}_{\mathbb{B}(\phi,\mu)} - \underbrace{\beta \mathcal{N}(s^*(\phi,\mu))\Delta EV(\phi,\mu|s^*(\phi,\mu))}_{\mathbb{C}(\phi,\mu)} \quad (5)$$

where

$$\alpha_G R_D(\phi) = \alpha_G \frac{1 + [1 - (\phi\alpha_G + (1-\phi)\alpha_B)]C}{\phi\alpha_G + (1-\phi)\alpha_B},$$

$$\widehat{\alpha}_G R_S(\phi|s^*(\phi,\mu)) = \frac{\widehat{\alpha}_G}{\phi\widehat{\alpha}_G + (1-\phi)\alpha_B},$$

and

$$\Delta EV(\phi,\mu|s^*(\phi,\mu)) \equiv \left[\alpha_G E_{\theta|\mu,\theta>s^*} V(\phi',\theta) - p E_{\theta|\mu,\theta>s^*} V(\phi,\theta)\right] > 0.$$

The net benefits of securitization, $\mathbb{B}(\phi,\mu)$, come from firms paying lower rates for funds. The net cost of securitization, $\mathbb{C}(\phi,\mu)$, come from defaulting more frequently and from losing the reputation update in those cases.

First, I evaluate the function $(U_G^S - U_G^D)$ in the extremes, for very large and very small μ. When μ is high enough such that $\mathcal{N}(s^*) \to 0$, then i) $\mathbb{C}(\phi, \mu) \to 0$ and ii) as $\widehat{\alpha}_G \to \alpha_G$, $\mathbb{B}(\phi, \mu) \to \alpha_G \frac{(1-\phi\alpha_G-(1-\phi)\alpha_B)C}{\phi\alpha_G+(1-\phi)\alpha_B} > 0$. This implies that there is always a $\mu(\phi)$ large enough such that a firm with reputation ϕ prefers to issue securities, not debt.

At the other extreme, when μ is low enough such that $\mathcal{N}(s^*) \to 1$, then i) as $\widehat{\alpha}_G \to p$, $\phi' \to \phi$ and $\mathbb{C}(\phi, \mu) \to \beta(\alpha_G - p)E_{\theta|\mu}V(\phi, \theta) > 0$ and ii) as $\widehat{\alpha}_G R_S(\phi|s^*(\phi, \mu)) \to 1$, then $\mathbb{B}(\phi, \mu) \to \alpha_G R_D(\phi) - 1 > 0$. This implies that there may be a $\mu_L^*(\phi)$ low enough such that a firm with reputation ϕ prefers to issue securities, not debt, for all $\mu < \mu_L^*(\phi)$ if and only if $\alpha_G R_D(\phi) - 1 > \beta(\alpha_G - p)E_{\theta|\mu}V(\phi, \theta)$. This is naturally the case when μ is so low that $E_{\theta|\mu}V(\phi, \theta) = 0$, as this is isomorphic to a static situation in which the future does not matter. In such case securities are preferred because the firm pays \$1 in expectation for the loan of \$1, but involves a lower probability of firm continuation.

Second, to assess what happens for intermediate levels of μ, we evaluate the change of the expression $(U_G^S - U_G^D)$ as a function of μ, this is $\frac{\partial(U_G^S - U_G^D)}{\partial\mu}$. Taking derivatives of each component.

$$\frac{\partial\mathbb{B}(\phi,\mu)}{\partial\mu} = -\underbrace{\frac{\partial\widehat{\alpha}_G R_S(\phi|s^*)}{\partial\widehat{\alpha}_G}}_{=\frac{(1-\phi)\alpha_B}{\phi\widehat{\alpha}_G+(1-\phi)\alpha_B}>0}\underbrace{\frac{\partial\widehat{\alpha}_G}{\partial\mathcal{N}(s^*)}}_{=-(1-p)<0}\left[\underbrace{\frac{\partial\mathcal{N}(s^*)}{\partial\mu}}_{<0}+\underbrace{\frac{\partial\mathcal{N}(s^*)}{\partial s^*}}_{>0}\underbrace{\frac{\partial s^*}{\partial\mu}}_{<0}\right] < 0 \tag{6}$$

$$\frac{\partial\mathbb{C}(\phi,\mu)}{\partial\mu} = \beta\left[\underbrace{\frac{\partial\mathcal{N}(s^*)}{\partial\mu}}_{<0}+\underbrace{\frac{\partial\mathcal{N}(s^*)}{\partial s^*}}_{>0}\underbrace{\frac{\partial s^*}{\partial\mu}}_{<0}\right]\Delta EV + \beta\mathcal{N}(s^*)\left[\underbrace{\frac{\partial\Delta EV}{\partial\mu}}_{?}+\underbrace{\frac{\partial\Delta EV}{\partial s^*}}_{?}\underbrace{\frac{\partial s^*}{\partial\mu}}_{<0}\right] \tag{7}$$

We can always characterize these derivatives for relatively high and small values of μ. When μ is high enough such that $\mathcal{N}(s^*) \to 0$, then $\frac{\partial\mathcal{N}(s^*)}{\partial\mu} \to 0$ and $\frac{\partial s^*}{\partial\mu} \to 0$. This implies that i) $\mathbb{C}(\phi, \mu) \to 0$ and ii) $\mathbb{B}(\phi, \mu) \to 0$ and the net positive incentives to issue securities over debt do not change when μ is high enough. Intuitively, the expected fundamentals are so good that the assessed probability of strategic default is so low that the probability of continuation, and hence the update of reputation, is high. At the other extreme, when μ is low enough such that $\mathcal{N}(s^*) \to 1$, still it is the case that $\frac{\partial\mathcal{N}(s^*)}{\partial\mu} \to 0$ and $\frac{\partial s^*}{\partial\mu} \to 0$. This implies that i) $\mathbb{C}(\phi, \mu) \to \beta\frac{\partial\Delta EV}{\partial\mu} = \beta(\alpha_G - p)\frac{\partial E_{\theta|\mu}V(\phi,\theta)}{\partial\mu} > 0$ and ii) $\mathbb{B}(\phi, \mu) \to 0$, then the potential net positive incentives to issue securities over debt when μ is low decreases as we increase μ. Intuitively, the higher probability of default from securities becomes more costly in terms of continuation as fundamentals improve in expectation.

For intermediate levels of μ, the characterization of these derivatives depend on the shape of the value function with respect to θ. In principle there may be many thresholds for which $U_G^S - U_G^D = 0$ and then many regions of $\mu < \mu_H^*(\phi)$ for which firms issue securities. As long as the value $V(\phi, \theta)$ is smooth enough in θ, however, at most two thresholds exist and then firms of reputation ϕ issue debt for $\mu_L^*(\phi) < \mu < \mu_H^*(\phi)$. The condition depends on value function not displaying jumps or large changes as function of μ. **Q.E.D.**

1.4 Proof of Proposition 4

As discussed, $\mu_H^*(\phi)$ is determined by equation (5) equal to zero, when $\mathcal{N}(s^*) < 1$. Also, if $\mu_L^*(\phi)$ exists, it is for $\mathcal{N}(s^*) \to 0$. I will analyze each of these thresholds as function of reputation ϕ in steps.

*Step 1:*Taking derivatives of firms' expected profits with respect to ϕ,

$$\frac{\partial U_G^D(\phi, \mu)}{\partial \phi} = \alpha_G \left[\frac{\partial E_{\theta|\mu} V(\phi', \theta)}{\partial \phi'} \frac{\partial \phi'}{\partial \phi} - \frac{\partial R_D(\phi)}{\partial \phi} \right], \tag{8}$$

which is positive by construction of value functions increasing with ϕ and because

$$\frac{\partial R_D(\phi)}{\partial \phi} = -\frac{(1+C)(\alpha_G - \alpha_B)}{(\phi \alpha_G + (1-\phi)\alpha_B)^2} < 0.$$

$$\begin{aligned}
\frac{\partial U_G^S(\phi, \mu)}{\partial \phi} \;=\; & \mathcal{N}(s^*(\phi, \mu)) \beta p \frac{\partial E_{\theta|\mu, \theta < s^*} V(\phi, \theta)}{\partial \phi} + (1 - \mathcal{N}(s^*(\phi, \mu))) \beta \alpha_G \frac{\partial E_{\theta|\mu, \theta > s^*} V(\phi', \theta)}{\partial \phi'} \frac{\partial \phi'}{\partial \phi} \\
& + \mathcal{N}(s^*(\phi, \mu)) \beta p \frac{\partial E_{\theta|\mu, \theta < s^*} V(\phi, \theta)}{\partial s^*} \frac{\partial s^*}{\partial \phi} + (1 - \mathcal{N}(s^*(\phi, \mu))) \beta \alpha_G \frac{\partial E_{\theta|\mu, \theta > s^*} V(\phi', \theta)}{\partial s^*} \frac{\partial s^*}{\partial \phi'} \frac{\partial \phi'}{\partial \phi} \\
& + \frac{\partial \mathcal{N}(s^*(\phi, \mu))}{\partial s^*} \frac{\partial s^*}{\partial \phi} \beta p \left[E_{\theta|\mu, \theta < s^*} V(\phi, \theta) - R_S(\phi | s^*(\phi, \mu)) \right] \\
& - \frac{\partial \mathcal{N}(s^*(\phi, \mu))}{\partial s^*} \frac{\partial s^*}{\partial \phi} \beta \alpha_G \left[E_{\theta|\mu, \theta > s^*} V(\phi', \theta) - R_S(\phi | s^*(\phi, \mu)) \right] \\
& - \left[\mathcal{N}(s^*(\phi, \mu)) \beta p + (1 - \mathcal{N}(s^*(\phi, \mu))) \beta \alpha_G \right] \frac{\partial R_S(\phi | s^*(\phi, \mu))}{\partial \mathcal{N}(s^*(\phi, \mu))} \frac{\partial \mathcal{N}(s^*(\phi, \mu))}{\partial s^*} \frac{\partial s^*}{\partial \phi}
\end{aligned} \tag{9}$$

Differentiating the condition that pins down s^* with respect to ϕ,

$$\frac{d\beta \; E_{\theta|s^*} \left[V(\phi, \theta | \widehat{\tau}(s^*)) \right]}{d\phi} = \frac{dR_S(\phi | s^*)}{d\phi}.$$

Since

$$\frac{dR_S}{d\phi} = \frac{\partial R(\phi|s^*)}{\partial \phi} + \frac{\partial R(\phi|s^*)}{\partial s^*}\frac{ds^*}{d\phi} = -\frac{(\widehat{\alpha}_G(s^*) - \alpha_B)}{(\phi\widehat{\alpha}_G(s^*) + (1-\phi)\alpha_B)^2} + \frac{\phi p(1-p)\frac{\partial \mathcal{N}(s^*)}{\partial s^*}}{(\phi\widehat{\alpha}_G(s^*) + (1-\phi)\alpha_B)^2}\frac{ds^*}{d\phi},$$

$$\left[\frac{\partial \beta\ E_{\theta|s^*}\left[V(\phi,\theta|\widehat{\tau}(s^*))\right]}{\partial s^*} - \frac{\partial R(\phi|s^*)}{\partial s^*}\right]\frac{ds^*}{d\phi} = \frac{\partial R_S(\phi|s^*)}{\partial \phi} - \frac{\partial \beta\ E_{\theta|s^*}\left[V(\phi,\theta|\widehat{\tau}(s^*))\right]}{\partial \phi}.$$

The term in brackets on the left is positive (by assumptions 1 and 2) and the term on the right is negative. By the envelope condition, $\frac{ds^*}{d\phi} < 0$ and $\frac{dR_S}{d\phi} < 0$. This implies the steep part of the value function $U_G^S(\phi,\mu)$ moves to the left when ϕ grows.

Since both $U_G^S(\phi,\mu)$ and $U_G^D(\phi,\mu)$ increase with ϕ for each μ, the threshold $\mu_H^*(\phi)$ declines with ϕ if $\frac{\partial U_G^S(\phi,\mu_H^*(\phi))}{\partial \phi} \geq \frac{\partial U_G^D(\phi,\mu_H^*(\phi))}{\partial \phi}$. Since the threshold $\mu_H^*(\phi)$ is given by the value μ at which equation (5) is equal to zero, by evaluating equations (8) and (9) at μ_H^* it is clear that this condition is fulfilled. Then $\frac{\partial \mu_H^*}{\partial \phi} < 0$.

Step 2: $\mu_L^*(\phi)$ is determined by equation

$$\alpha_G R_D(\phi) - 1 \approx \beta(\alpha_G - p)E_{\theta|\mu_L^*(\phi)}V(\phi,\theta)$$

Taking the derivative with respect to ϕ,

$$\alpha_G\frac{\partial R_D(\phi)}{\partial \phi} \approx \beta(\alpha_G - p)\left[\frac{\partial E_{\theta|\mu_L^*(\phi)}V(\phi,\theta)}{\partial \phi} + \frac{\partial E_{\theta|\mu_L^*(\phi)}V(\phi,\theta)}{\partial \mu_L^*}\frac{\partial \mu_L^*}{\partial \phi}\right]$$

Since we have shown $\frac{\partial R_D(\phi)}{\partial \phi} < 0$ and by assumption of value functions $\frac{\partial E_{\theta|\mu_L^*(\phi)}V(\phi,\theta)}{\partial \phi} > 0$ and $\frac{\partial E_{\theta|\mu_L^*(\phi)}V(\phi,\theta)}{\partial \mu_L^*} > 0$. Then $\frac{\partial \mu_L^*}{\partial \phi} < 0$. **Q.E.D.**

1.5 Formal discussion of Section 2.5

Proposition 1 *Assume a transfer policy such that $\widehat{V}(\phi,\theta) = V(\phi,\theta)T(\phi)$ and μ is such that $\alpha_G R_D(0) < \beta(\alpha_G - p)E_{\theta|\mu}V(0,\theta)$. From Proposition 3 there is a unique reputation level $\phi^*(\mu)$ that makes good firms indifferent between debt and securities in the absence of cross subsidization. It exists a subsidy scheme increasing in reputation, $\frac{\partial T(\phi)}{\partial \phi} > 0$ such that $T(\widehat{\phi}) = 1$, where $\widehat{\phi} > \phi^*(\mu)$ and $\phi^*(\mu)$ is also the reputation level that make good firms indifferent in the presence of cross subsidization. The expected profits of firms with reputation $\phi < \phi^*(\mu)$ remain unchanged and of firms with reputation $\phi > \phi^*(\mu)$ increase, as their ex-ante probability of strategic default ($\mathcal{N}(\theta^*(\phi,\mu))$) decline.*

Proof First I prove the impact of subsidies on the incentives to cover securities in distress, summarized by θ^*.

Imposing $V(\phi', \theta|\widehat{\tau}(\theta^*))T(\phi')$ in the condition that pins down θ^*, and differentiating with respect to $T(\phi')$,

$$\left(\frac{\partial \beta V(\phi', \theta|\widehat{\tau}(\theta^*))T(\phi')}{\partial \theta^*} - \frac{\partial R(\phi|\theta^*)}{\partial \theta^*}\right) \frac{d\theta^*}{dT(\phi')} = -\beta\, V(\phi', \theta|\widehat{\tau}(\theta^*)). \tag{10}$$

The right hand side is negative and the term in brackets is positive, which implies that $\frac{d\theta^*}{dT(\phi')} < 0$. In words, the ex-ante probability of strategic default for all reputations ϕ for which the update ϕ' is subsidized with $T(\phi') > 1$. In contrast, the ex-ante probability of strategic default increases for all reputations ϕ for which the update ϕ' is taxed with $T(\phi') < 1$.

This result is important to prove the first part of the proposition. Assume $T(\phi^*) = 1$ such that $T(\phi^{*\prime}) > 1$. This implies that, in the presence of cross-subsidization, good firms with reputation ϕ^* strictly prefer to issue securities. This is clear from comparing equations (3) and (4). Equation (3) remains constant while equation (4) increases for two reasons. First, fixing θ^*, the value of reputation updating is larger because $E_{\theta|\mu,\theta>\theta^*}V(\phi^{*\prime}, \theta)T(\phi^{*\prime}) > E_{\theta|\mu,\theta>\theta^*}V(\phi^{*\prime}, \theta)$. Second, as shown above, θ^* declines, which reduces R_S and further increases the gains from securitization in equation (4).

Combining this result with proposition 4, when $T(\phi^*) = 1$, then $\phi^* > \phi^{**}$, where ϕ^{**} is the reputation level that makes good firms indifferent between using debt or securitization in the presence of cross subsidization. By imposing $T(\phi) < 1$, equation (3) declines while equation (4) does not increase so much as in the previous case. This implies there is always a $\phi^*(\mu) < \hat{\phi} < \phi^{*\prime}(\mu)$ such that $T(\hat{\phi}) = 1$ and $\phi^*(\mu) = \phi^{**}(\mu)$. If the government imposes such a scheme, the firms that issue debt and securities do not change. The firms with reputation $\phi < \phi^*$ issue debt and since they are subject to contractual provisions, they keep paying loans with successful ongoing projects. In contrast, the good banks with reputation $\phi > \phi^*$ issue securities, but because subsidies decrease $\theta^*(\phi)$, they use successful ongoing projects to cover securities in distress and securitization is less fragile.

Whether cross-subsidization can be self-financed or not depends on the distribution of reputation across firms and on the value functions for different reputation levels. In particular, cross-subsidization is self financed at each expected future condition θ if transfers are such that

$$\int_0^1 V(\phi, \theta)T(\phi)d\phi = \int_0^1 V(\phi, \theta)d\phi.$$

where $d\phi$ is the distribution of reputation, conditional on a realized fundamental θ. Q.E.D.

2 Institutional Details of Special Purpose Vehicles (SPV)

Securitization involves the following steps: (i) a sponsor or originator of receivables sets up a remote ”special purpose vehicle” (SPV), pools the receivables, and transfers them to the SPV as a true sale; (ii) the cash flows are tranched into asset-backed securities, the most senior of which are rated and issued in the market; the proceeds are used to purchase the receivables from the sponsor; (iii) the pool revolves in that over a period of time the principal received on the underlying receivables is used to purchase new receivables; (iv) there is a final amortization period, during which all payments received from the receivables are used to pay down the tranche principal amounts.

A critical step in securitization then involves sponsoring SPVs. By financing the firm using off-balance sheet instruments, the issuer maintains control over the business decisions while the financing is done in the SPVs. The two key characteristics of SPVs are the following: **Bankruptcy remoteness and privileged information**. First, SPVs are not subject to bankruptcy costs because, as a matter of design, they cannot in practice go bankrupt. Second, investors holding SPVs have privileged access to information about the proceedings of the assets composing the SPVs.

First, with respect to bankruptcy remoteness, in the U.S. it is not possible to waive the right to use a bankruptcy procedure, but it is possible to structure an SPV so that there cannot be an event of default that would throw the SPV into bankruptcy. How? According to (Klee and Butler 2002) and (Gorton and Souleles 2006), an SPV is a legal entity which has been set up for a specific, limited purpose by another entity (the sponsoring firm), and can take the form of a corporation, trust, partnership, or a limited liability company. The SPV may be a subsidiary of the sponsoring firm, or it may be an orphan SPV, one that is not consolidated with the sponsoring firm for tax, accounting, or legal purposes (or may be consolidated for some purposes but not others). An SPV is off-balance sheet of the sponsor firm if meeting the requirements set forth in Financial Accounting Standard 140. To fulfill these requirements the SPV must be a separate and distinct legal entity from the sponsor (the sponsor does not consolidate the SPV for accounting reasons). It must be an automaton in the sense that there are no substantive decisions for it to ever make, just simply rules that must be followed. SPVs are essentially robot firms that have no employees, make no substantive economic decisions, have no physical location, and cannot go bankrupt.

That the SPV itself must (as a practical matter) never be able to become bankrupt is its most essential feature. As it is legally unenforceable for an firm to waive its right to file a voluntary bankruptcy petition, it can completely eliminate the risk of either voluntary or involuntary bankruptcy by creating the SPV in a legal form that is ineligible to be a debtor under the U.S. Bankruptcy Code. The SPV can be structured to achieve this result. As (Klee and Butler 2002) highlight, ”the use of SPVs is simply a disguised form of bankruptcy waiver”.

Even though under accounting and regulatory rules sponsors are not supposed to provide support, still this support is recognized by U.S. bank regulators who usually refer to it as ”implicit recourse” or ”moral recourse:” the provision of credit support, beyond contractual obligations. (Gorton and Pennacchi 1995)) discussed the issue of implicit recourse in financial markets in the context of the bank loan sales market and provide empirical evidence for its existence.

Second, investors have access to proprietary information about the proceedings of the pool. As described by (Plantin 2009), ”a number of securities, such as securitized pools of loans, are not traded publicly but are sold to institutional investors who, from then on, receive from the issuer information that is not publicly available. Thus, investors in such privately placed securities buy a bundle comprised of not only a claim to future cash flows but also a flow of future privileged information about these cash flows”.

References

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