Delegated Blocks

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The economics of delegated blockholding

- Risk-sharing in financial markets ⇒ large entities with high risk-bearing capacity should hold large equity blocks
  - This should induce them to **monitor**.... better corporate governance.
- Rise of asset managers: capital concentrated in hands of big funds (Dasgupta, Fos, Sautner FnT 2021)
- **Simple intuition: Good for governance**
  - Big funds = high risk-bearing capacity
  - More large traders, more large blocks, more monitoring!
- But, if you think about it, the answer is not obvious:
  - Block sizes and monitoring are endogenous to the contractual incentives of fund managers.
  - Such contractual incentives are endogenously determined and anticipate ownership and monitoring decisions.
- We study the economics of **delegated** blockholding.

A key benchmark

- Benchmark: Admati, Pfleiderer, Zechner (1994) – study the economics of **proprietary** long-term blockholding:
    - Assume the existence of large proprietary trader with exogenously high risk-bearing capacity.
    - But observe that holdings are a choice and monitoring is a public good.
    - They ask: will **anticipated** monitoring costs **limit** this (exogenously) large trader's willingness to hold large blocks?
    - Their answer: "no"—large trader with high risk-bearing capacity **will** risk-share optimally (i.e., build up a large block) and (therefore) monitor a lot.
        - In other words, the **simple intuition** of the opening slide is actually correct (albeit for not so simple reasons!)

Preview of results

- When traders with high risk-bearing capacity emerge **endogenously** via delegation, a lot changes!
  - The **simple intuition** of the opening slide no longer applies in today's market

1. The **optimal** fund holds **sub**optimally small blocks
   - A big asset manager may have a high risk-bearing capacity, but doesn't use it!
2. The optimal fund monitors (way) too little
   - Not only do they hold "too small" blocks, they monitor "as if" they held even smaller blocks!
3. Benchmarks, benchmarks...
   - Delegated economy is worse than one **with** exogenously large proprietary owners... but better than one **without** large proprietary traders **and** no delegation.
4. Endogenous asset management contracts... features of real world asset managent firms.
5. Empirical implications for blockholder monitoring.

Model: Assets, Investors, Timeline

- A firm with unit mass of equity shares and Gaussian cash flows
- A risk-free asset in perfectly elastic supply with unit return
- A unit continuum of infinitesimal traders with CARA utility, each with risk tolerance of ρ.
  - A measure λ (exogenously) aggregated into positive-measure strategic entity L
    - L has endowment of shares $\omega \leq \lambda$
  - The remaining measure $1 - \lambda$ trade competitively
    - They share equally an aggregate endowment of $1 - \omega$
- Timeline:
  - Date 1: (notable variation) Arbitrary $\sharp$ of rounds of **trading** in **Walrasian** market
  - Date 2: (notable variation) L can **monitor** at intensity m resulting in equity cash flow $N\left(\mu(m), \sigma^2\right)$, where $\mu^{'} > 0$, $\mu^{''} < 0$ at cost $c(m)$ with $c' > 0, c'' > 0$
  - Date 3: Cash flows realized

Competitive Equilibrium Allocation

Perfect Risk Sharing

- CARA Normal model: the *aggregate risk tolerance* of a measure of infinitesimal competitive agents is proportionate to the measure of those agents.
  - The aggregate risk tolerance of competitive investors is $\rho(1-\lambda)$
  - The (aggregate) risk tolerance of L is equal to $\rho\lambda$
- A **competitive allocation with perfect risk sharing** involves
  - allocating λ measure of shares to L
  - $1-\lambda$ equally distributed among the other agents

No commitment to monitoring or trading strategies

- L can't commit to monitoring level, so $L's$ monitoring m is determined by final stake, α.
- The optimal level of monitoring is given by

$$\alpha\mu'(m(\alpha)) = c'(m(\alpha)).$$

- L can't commit to a trading strategy, so APZ define ("steady state") **Globally Stable Allocation** α_G as:
  - If α_G is reached, L won't wish to trade away from it at market prices corresponding to α_G.
  - From any other allocation, L will be willing to trade to α_G at market prices corresponding to α_G.

Benchmark Equilibrium

Theorem

(APZ 1994) *As long as* $\Psi(\cdot)$ *is strictly concave, there exists a unique globally stable allocation,* $\alpha_G = \lambda$*, which coincides with the competitive equilibrium allocation.*

- Since L can't commit to limit trading, she will trade to the competitive allocation.
    - In Walrasian market L pays in full for any anticipated increase in monitoring so she would like to commit to buy less.
    - But, once she has acquired **some** additional shares, they are part of her endowment and she will always want to buy (a bit) more to get a bit more risk sharing.
- Full dynamic validity verified by DeMarzo and Urosevic (2006).

Implication: If L has a high risk-bearing capacity (high λ) she **will** acquire large blocks and monitor intensively.

Delegated blocks model: What doesn't change

- Assets and timing essentially unchanged.
- A firm with unit mass of equity shares and Gaussian cash flows
- A risk-free asset in perfectly elastic supply with unit return
- Timeline:
  - Date 1: (Trading) Arbitrary ♯ of rounds of **trading** in Walrasian market
  - Date 2: (Monitoring) **Monitoring** at intensity m results in equity cash flow $N\left(\mu(m), \sigma^2\right)$, where $\mu^{'} > 0$, $\mu^{''} < 0$ at cost $c(m)$ with $c' > 0, c'' > 0$
  - Date 3: Cash flows realized

Change I: Agents

- Motivation for studying delegated blockholding:
  - *Real-life blockholders are institutional investors who invest on behalf of small, retail savers.*
- $\lambda-$measure investors are **unskilled**; jointly endowed with $\omega \in (0, \lambda)$.
- $(1-\lambda)-$measure are **skilled**; jointly endowed with $1-\omega$.
- No infinitesimal agent will ever pay monitoring costs.
- So: allow agents to form positive-measure collectives within their types, i.e., skilled or unskilled.
  - *large traders can emerge*
- Collectives are subject to incentive compatibility conditions
  - *large traders aren't "born," they are "made"*
- Skilled investors are sophisticated and can trade (individually or in collectives) and monitor (in collectives)
- Unskilled investors are unsophisticated and cannot trade (individually or in collectives) or monitor (even in collectives)

Change II: Funds

- A **fund** is formed (at the beginning of date 1) when:
  - A collective of unskilled investors (then: Fund Investors "FIs") hires a chosen measure of skilled investors (then: Fund Managers "FMs")
  - FIs and FMs contribute endowments to the fund and agree to a contract
  - FMs make trading and monitoring decisions subject to contractual incentives.
- Interpretation: In real markets there are
  1. professional asset managers
  2. investors who trade via the professional managers
  3. investors who trade directly on own accounts

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- Interpretation: In real markets there are
  1. professional asset managers Model: FMs
  2. investors who trade via the professional managers Model: FIs
  3. investors who trade directly on own accounts Model: Skilled agents who do not become FMs

Our interest is in optimal delegation: so try to find the fund that is best for FIs. What do FIs want?

Fund Investor "nirvana"

If FIs were skilled and had full commitment power...

...they would **simultaneously** choose optimal trading strategy and optimal monitoring level to obtain:

Theorem

The FIs' full-commitment optimum has an

1. *optimal monitoring level, m^C, defined by* $\omega\mu'(m^C) = c'(m^C)$
2. *optimal final stake of* $\alpha^C \equiv \frac{\lambda(1+\omega)}{(1+\lambda)}$

FI "nirvana" looks "schizophrenic":

1. They want to diversify so *buy* shares (but not all the way to λ to reflect price impact): $\omega < \alpha^C < \lambda$,
2. But they don't want to monitor at α^C but rather "as if" they hold only $\omega < \alpha^C$, because they would have to pay for all the extra monitoring when they bought their shares.

Let Π_{FI}^C denote such full-commitment FI payoffs.

Fund Formation

- We show that it's possible to replicate payoff Π_{FI}^{C} for FIs by forming a single fund involving all λ FIs:
  1. τ mass of FMs
  2. a fee f paid by FIs to FMs at entry
  3. proportionate split of fund assets: ϕ to FMs and $1 - \phi$ to FIs
- To be "feasible", in building this fund we must:
  1. Satisfy two no-free-riding conditions:
     1. No individual FI can wish to "peel off" from the proposed fund (conditional on its existence).
     2. No individual FM can wish to "peel off" from the proposed fund (conditional on its existence).
  2. Respect no-commitment by FMs in trading and monitoring decisions within the fund (otherwise we're "breaking the rules of the APZ game")

Derive the optimal fund I: No free riding, no commitment

1. Satisfy two no-free-riding conditions:
   1. No individual FI can wish to "peel off" from the proposed fund:
      - *Funds can form only if no FI has endowment larger than* $\hat{\omega} < \lambda$.
      - *By defecting, individual FI still benefits from fund's monitoring, but saves the fee and loses risk sharing.*
   1. No individual FM can wish to "peel off" from the proposed fund:
      - *FM's payoff must be equal to payoff of non-FM skilled investor.*
2. Respect no-commitment by FMs in trading and monitoring decisions within the fund:
   - *FMs trade to the new globally stable allocation* α_G^D *of which*
     - *FMs own* $\phi\alpha_G^D$ *and*
     - *monitor at level* $\phi\alpha_G^D\mu'(m) = c'(m)$.

Derive the optimal fund II: Match FI "nirvana"

Theorem

The FIs' full-commitment optimum has an

1. *optimal monitoring level,* m^C*, defined by* $\omega\mu'(m^C) = c'(m^C)$
2. *optimal final stake of* $\alpha^C \equiv \frac{\lambda(1+\omega)}{(1+\lambda)}$

- To match the FIs' payoff of Π^C_{FI} we must have:
  - (i) $\phi\alpha^D_G = \omega$ *to match "nirvana" monitoring*
  - (ii) $(1-\phi)\alpha^D_G = \alpha^C$ *to match "nirvana" final stake.*
- α^D_G is a function of λ, τ, ϕ. Solve for ϕ^*,τ^*.
- Set f^* to shut down FM-free riding: equalize payoffs of FMs and skilled investors who do not become FIs.

The Optimal Fund

Theorem

There exists $\hat{\omega} \in (0, \lambda)$ *s.t. for* $\omega \leq \hat{\omega}$*, a fund exists that delivers a payoff of* Π^C_{FI} *for FIs. It is characterized by:*

1. *a mass of FMs* $\tau^* = \frac{(1-\lambda^2)\omega}{1-\lambda\omega}$,
2. *an allocation of fund assets to FMs* $\phi^* = \frac{(1+\lambda)\omega}{2\lambda\omega+\lambda+\omega}$*, and*
3. *a fixed fee paid by FIs to FMs*

$$f^* = \frac{1}{\lambda}\left[c(m^C) + P^{D*}(\alpha_G^{D*})\left((1-\phi^*)(\omega + \tau^*\frac{(1-\omega)}{1-\lambda}) - \omega\right)\right]$$

where the superscript $D*$ *indicates that the associated function or variable is evaluated at* ϕ^* *and* τ^*.

Intuition: Delegation is Separation

- How does the optimal fund achieve full-commitment FI payoffs even though **no investor has any commitment power**?
- Answer: Delegation separates risk-sharing from monitoring.
    - ϕ^* and τ^* are chosen to ensure:
        - monitoring at level that is privately optimal for FIs absent risk-sharing considerations
        - FIs get an effective stake that optimizes risk-sharing absent monitoring considerations

Social welfare

- The optimal fund gives FIs everything they could have ever wanted.
- Is this all good news?
  - No! Society suffers. The optimal fund:
    - Holds a smaller stake than a proprietary trader of identical risk tolerance. (Less risk sharing than in APZ)
    - *Why? Recall that FIs do not risk share perfectly, get their full commitment level of holding* $\omega < \alpha^C < \lambda$.
    - Monitors "as if" it held only ϕ^* of the (already too small) stake that it actually holds! (Much less monitoring than in APZ)
- But it's not all bad news.
  - Society suffers in a market of big funds in comparison to a market full of big proprietary blockholders
  - But if no big propretary blockholders exist, then delegated blocks equilibrium provides (some) risk sharing and (some) monitoring

Applied Implications

- **Corporate governance**
  - Block size may not be a good predictor of monitoring intensity: the internal fund structure matters.
    - Block size increases in λ and ω, monitoring **only** increases in ω.
  - If active funds endogenously fail to utilize their full risk-bearing capacity, the governance role of index funds (who hold blocks mechanically) becomes of even greater interest.

- **Asset management**
  - Investors with relatively high endowments invest in funds where managers take large personal stakes and monitor aggressively.
    - Similar to Hedge Funds
  - Investors with relatively low endowments invest in funds where managers take small personal stakes and don't monitor much.
    - Similar to Mutual Funds

Robustness

- **Recontracting**
  - Once FMs have traded, will FMs and FIs prefer to dissolve the fund and create another that will monitor more? (i.e., could renegotiation unravel the result?)
  - Answer: No. once an effective stake of $\hat{\omega}$ is reached (often in first iteration), FIs will not re-contract due to free riding
- **Competition**
  - What if different funds compete for FIs?
  - A competing fund might lure FIs away by offering identical risk exposure but no monitoring (e.g. a single-FM fund)
  - Free riding makes this viable and attractive
  - Holding model exactly fixed: we demonstrate possible "race to the bottom" with respect to monitoring
  - But we also show that as long as there's **some** fixed cost (i.e., not scaling with fund assets) to setting up a competing fund, our optimal fund survives in equilibrium.

Conclusion

Simple model of the economics of delegated blockholding

- Blockholder monitoring is important, but the determinants of long-term block sizes are not well understood
- Existing work studies proprietary blockholders but most blocks are delegated
- We show that delegation has important consequences for block sizes and monitoring
    - Delegation contracts allow for the separation of risk sharing and monitoring motives
    - This can lead to less monitoring and inferior risk sharing relative to proprietary blocks, but gives rise to (some) monitoring and (some) risk sharing where proprietary blocks would not exist
    - Implications for both corporate governance and asset management