# The Passive-Ownership Share Is Double What You Think It Is
## *Chinco, and Sammon*

Discussion – WFA Meetings – June 2023

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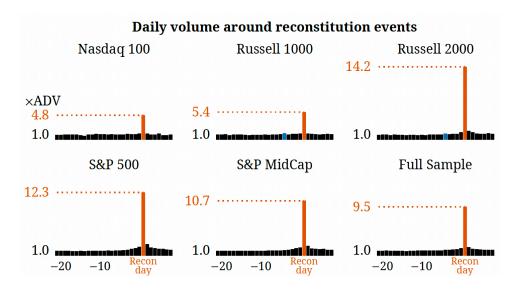
# Plan

# This Paper

**What is the share of passive investors ...**

- ... a dark matter approach
  - I cannot see all of the passive investors, but we can feel them move financial markets if we know where to look.

# This Paper



Daily volume around reconstitution events

# This Paper

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- Accounting for the change in position for inclusion in an index

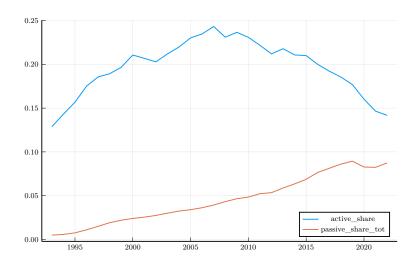$$\text{AUM of indexers} \cdot \text{Index Weight} = \text{Volume} \cdot \text{Price}$$

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$$\underbrace{\text{AUM of indexers} \cdot \text{Index Weight}}_{\text{How much they are supposed to buy}} = \underbrace{\text{Volume} \cdot \text{Price}}_{\text{How much we see them buy}}$$
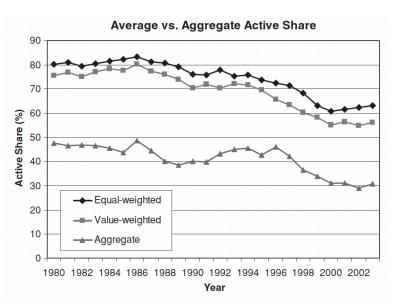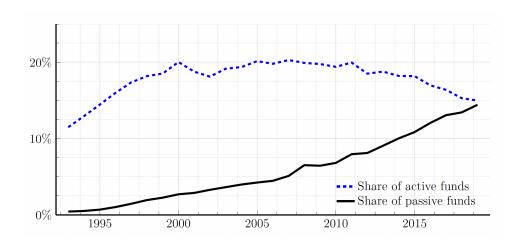
**Other methods ...**

- Just ask the industry ... ICI number of 16%
- Look at *what they hold* and compare it to the actual index: Cremers and Petajisto
- Look at how they trade: *passive investors as inelastic investors* (Haddad et al.)

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# Other methods at a glance

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# Other methods at a glance

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**Average vs. Aggregate Active Share**

# Other methods at a glance

# Why is it important?

**Efficiency of markets**

- Trends suggest market efficiency is going up …
- … but a ever-rising active share could end this

# Why is it important?

- We have estimates of active share on market efficiency or other "welfare outcome"

$$\text{Mkt Efficiency}_{i,t} = a + \beta \text{ Active Share}_{i,t} + \varepsilon_{i,t}$$
$$\text{Mkt Efficiency}_{i,t} = a + \tilde{\beta} \text{ True Active Share}_{i,t} + \varepsilon_{i,t}$$

  ▸ A reevaluation of active share is not going to change our estimated effect.
- These numbers matter if the dark matter behaves differently (outside of recon-days)

  $$\text{Mkt Efficiency}_{i,t} = a + \beta_1 \text{ Share Open Indexers}_{i,t} + \beta_2 \text{ Share Closet Indexers}_{i,t} + \varepsilon_{i,t}$$

- How do we estimate $\beta_2$?

# Plan

# Why are we missing passive investors

**Why are some passive investors "closet-indexers"?**

- If you are not openly an index fund, why would you trade on reconstitution days?
  - ▸ Liquidity providers give you some cover?
  - ▸ Do not want to deviate from benchmark?
- What is the point of being a closet-indexer?

**Bring some formalism into the market for passive indexing**

- There is a market of index funds with a specific (changing) demand
- Three main types of agents: open indexers, closeted indexers, liquidity providers
- Incentives
  - ▸ Profit function of liquidity providers (how come returns do not go up on announcement days anymore?)
  - ▸ Incentives of closeted indexers (private benefits of tracking a benchmark?)

# Threats to the framework

- External validity
  - ▸ Closet-indexers behave differently outside of recon-days
  - ▸ $\beta_1$ and $\beta_2$ are far from each other.

- Volume is a misleading metric
  - ▸ Lots of exchanges (back and forth) on the day
  - ▸ Volume overstates the actual final trade: when the dust settles...

- Hard to build a time series
  - ▸ Change in the structure of these markets
  - ▸ Liquidity providers for recon-days have evolved over time

# Plan

# Accounting for price elasticity

**What if prices adjust ...**

- Accounting for elasticity of prices to excess demand
  - ▸ Very simple setup with two investors (indexer and non-indexer) and three assets: $x_1, x_2$ and outside asset $x_0$.
  - ▸ Index goes from holding only asset $x_1$ to also including asset $x_2$.
- What is the predicted volume?
  - ▸ Increase in volume based on fraction of passive investors $\alpha$ (forced to purchase asset $x_2$)
  - ▸ This demand is going to shift because the price of $x_2$ responds to the influx in demand

# Accounting for price elasticity

- Direct effect of a change:
  - Portfolio of indexers:
    $$\omega_1 = \frac{x_1}{x_1 + x_2}; \quad \omega_2 = \frac{x_2}{x_1 + x_2}$$
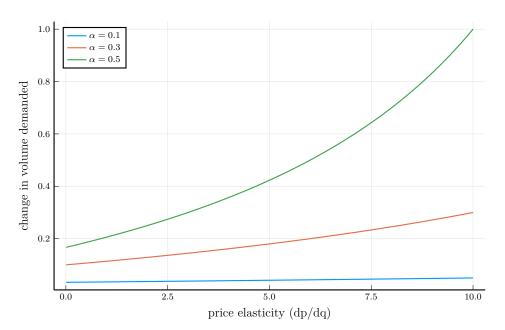  - Portfolio of others
    $$\omega_1 = \frac{x_1 - \alpha\omega_1 x_1}{\cdots}; \quad \omega_1 = \frac{x_2 - \alpha\omega_2 x_2}{\cdots}; \quad \omega_0 = \frac{x_0}{\cdots}$$

- How much gets traded
  $$\text{volume} = \alpha\omega_2 \cdot x_2$$

- Depends on the final price of the asset!

# Accounting for price elasticity

# Final Thoughts

Interesting Paper! Go read it.

Take away

- Reevaluation of the passive share with index inclusion
- Dark matter of passive investors to account for excess volume