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Organizational Sources of Mutual Funds' Common Top Holdings and Stock Return Comovement: Evidence from China

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Abstract: Two stocks can share the same number of common mutual fund owners and yet differ in who those owners are. Using the holdings of actively managed equity and hybrid mutual funds in China from the fourth quarter of 2015 to the third quarter of 2024, we examine whether the organizational composition of common owners is related to subsequent stock return comovement. We classify each pair of common funds as belonging to the same fund family with a shared manager, to the same family without a shared manager, or to different families, and we measure comovement as the within-month correlation of daily residual returns after holdings are disclosed. Among stock pairs held by exactly two common funds, pairs held across families comove more strongly than pairs held within a family. Controlling for the number of common funds, the intensity of common ownership, and stock characteristics, both within-family shares are negatively associated with comovement. Stock-pair fixed effects weaken these associations: the shared-manager coefficient remains significantly negative, whereas the other becomes insignificant. In a matched sample of pairs selected through common top holdings, both negative associations hold under top-ten and full holdings, but neither is significant in a separate random sample of full-holdings pairs. Our results suggest that the organizational composition of common owners contains information about comovement beyond the number of common funds and the intensity of common ownership.

Keywords: Common ownership; Fund families; Manager sharing; Mutual funds; Return comovement.

1. Introduction

Suppose two stocks are both among the top holdings of the same two mutual funds. The two funds may share a manager, may belong to the same fund family without a shared manager, or may belong to different families. In each case the stocks have the same number of common owners, but the managerial links between those owners differ. For example, under our portfolio de-duplication and manager identification rules, in the first quarter of 2021 Kweichow Moutai was among the top ten holdings of 1,459 portfolios, which were run by 920 managers at 132 fund families; these three counts measure participation at the product, manager, and family levels, respectively. We ask whether, holding fixed the number of common funds and the intensity of common ownership, the organizational composition of common owners is still related to stock return comovement.

A large literature links common ownership to comovement. Antón and Polk [1] show that stocks held by the same mutual funds comove more strongly, and they use outflows following the fund trading scandal to identify price effects beyond asset selection. Coval and Stafford [2] and Greenwood and Thesmar [3] show that overlapping holdings can transmit demand shocks through forced fund trading and the funding needs of owners, respectively.

Studies of the Chinese market reach related conclusions. Chen et al. [4] build a fund information network from shared top holdings and find that network density is related to stock risk and the likelihood of extreme price movements. Li et al. [5] examine how fund manager turnover affects stock comovement and prices. Zhou et al. [6] study price comovement in the common ownership network using holdings from 2007 to 2022, and further examine the role of fund flows, an information-sharing network based on holding weights, and investor sentiment; they also analyze price transmission from suspended stocks during 2015. None of these studies, however, distinguishes common owners by family affiliation or manager sharing.

Resources shared within fund families help explain why their holdings look alike. Elton et al. [7] find that funds in the same family have more highly correlated returns, which they attribute to overlapping holdings and industry exposures. Cici et al. [8] show that faster information diffusion within a family is associated with better fund performance, especially when information crosses investment styles. For China, He et al. [9] measure product homogenization by portfolio overlap within fund families and find that it is associated with better performance, which they link to the use of internal resources. Holding similarity within a family, in other words, may reflect information rather than mere imitation.

Links between managers can also extend beyond family boundaries. Hong et al. [10] and Pool et al. [11] document similar holdings and trades among managers located in the same city and the same neighborhood, respectively. In China, Luo and Lin [12] relate managers' social ties, such as alumni and former-colleague relationships, to the formation of holding networks, and Shen et al. [13] find that funds whose managers share alumni ties overlap more in holdings, purchases, and sales, with further evidence from joint corporate visits and correlated fund returns. These studies concern links between different managers, which are distinct from several funds sharing the same manager.

Organizational links also persist over time. Genc et al. [14] find that work connections formed by co-managing funds are associated with greater overlap in holdings and trades, and that this overlap persists after the co-management ends. Cici

et al. [15] document knowledge spillovers when managers move between families, together with improved performance at the receiving families. Current records of family affiliation and manager sharing therefore capture organizational links, although they do not capture a manager's entire information network.

Correlated behavior within organizations can also affect asset prices. Ben-David et al. [16] show that correlated trading by sub-units of large institutions limits the diversification of idiosyncratic demand shocks and is associated with larger trades and greater price impact. Existing evidence, however, is at the fund level—return correlations and portfolio overlap—and does not show how the organizational composition of common owners relates to comovement between the stocks they hold.

We address this question using the holdings of actively managed equity and hybrid mutual funds in China from the fourth quarter of 2015 to the third quarter of 2024. We merge the share classes of each portfolio and classify every pair of common funds as having a shared manager, belonging to the same family without a shared manager, or belonging to different families. Whereas Zhou et al. [6] construct an information-sharing network from common top holdings and portfolio weights, we decompose pairs of common funds by family and manager identity and compare their composition while holding the number of common funds fixed. We first compare stock pairs held by exactly two common funds. We then relate the shares of each type of fund pair to subsequent comovement, controlling for the exact number of common funds, the intensity of common ownership, and stock characteristics. Finally, we compare estimates with and without stock-pair fixed effects in the same sample, and we construct the variables from both top-ten and full holdings in a matched sample.

We find that, among stock pairs held by exactly two common funds, pairs held across families comove more strongly. After we control for the number of common funds, the intensity of common ownership, and stock characteristics, both within-family shares are negatively related to comovement. Adding stock-pair fixed effects weakens this relation substantially, leaving only a small negative coefficient on the shared-manager share. For stock pairs in the common top-holding sample, both relations continue to hold when the variables are constructed from full holdings.

Our paper makes three contributions. First, going beyond the number of common funds and the intensity of common ownership, we decompose the links among common owners by family and manager identity. This distinguishes our approach from the weight-based information-sharing network of Zhou et al. [6] and adds an organizational dimension to research on common ownership and comovement. Second, by comparing Fama–MacBeth, pooled panel, and stock-pair fixed-effects estimates in the same sample, we show how the source relations differ across and within stock pairs. Third, by constructing the variables from both top-ten and full holdings, we assess how sensitive the results are to the observed scope of holdings. The remainder of the paper is organized as follows. Section 2 develops the theoretical analysis, Section 3 describes the data and research design, Section 4 presents the empirical results, and Section 5 concludes.

2. Theoretical Analysis

Common ownership may be related to comovement through correlated trading, asset selection, or both. Under the correlated trading channel, overlapping holdings expose two stocks to the same funds' flows, rebalancing, and liquidity needs. Investor demand can generate comovement, and studies of forced fund trading support this channel [2, 17]. If flows or trades are correlated within a family, organizational links may amplify common demand shocks. This channel therefore predicts that within-family ownership, or manager sharing, is associated with stronger comovement.

Under the asset selection channel, holding overlap reflects characteristics that the stocks have in common. Stocks with similar industry links, growth prospects, risk exposures, or information sources are more likely to be held together and to have correlated returns. Luo et al. [18] find that the extent to which funds rely on information from their holding network is related to manager skill and performance, suggesting that funds in the same network do not necessarily use information in the same way. For a given number of common funds, if overlap across families captures the common characteristics of two stocks more closely than repeated allocations within a family do, cross-family ownership should be associated with stronger subsequent comovement. This channel therefore predicts that, controlling for the number of common funds and the intensity of common ownership, the within-family share is negatively related to comovement.

Family boundaries do not perfectly separate information sources. Funds in different families may rely on similar public information, and managers within the same family may follow different strategies. Nor does a shared manager imply that the funds receive identical managerial resources. Studying incumbent managers who take on newly launched funds, Peng and Chen [19] find that the new and existing funds differ in investment opportunities and performance, which suggests that managers allocate resources across the products they run. Our source measures describe observable managerial links between funds; they do not measure how independent the funds' investment decisions are.

Organizational links may also create shared career incentives. Studying U.S. mutual fund subadvisors, Beggs and DeVault [20] find that advisors serving the same fund family hold and trade more similar portfolios and that their overlapping positions earn lower risk-adjusted returns, consistent with imitation driven by career concerns. Although this setting differs from the organization of Chinese fund families, it suggests that holding similarity need not reflect information sharing alone. Shared-manager and other within-family links may thus be related simultaneously to portfolio choice, fund flows, incentives, and trading arrangements, and the estimated coefficients capture these links jointly.

The price effects reported in related studies also depend on how comovement is measured. Caglayan et al. [21] find that fund herding in China is associated with lower subsequent stock price synchronicity, measured as the R-squared from regressing individual stock returns on market returns rather than the pairwise residual correlation used here. Guo et al. [22] show that the price effects of institutional herding among U.S. investors depend on market sentiment. Because we do not measure herding or investor sentiment directly, we do not draw conclusions about whether the underlying trading is rational.

Stock-pair fixed effects provide an additional test. If the relation between ownership composition and comovement mainly reflects stable characteristics of stock pairs, the source coefficients should weaken once time-invariant differences across pairs are removed. However, fixed effects also absorb

any stable exposure to correlated trading, and measurement error in quarterly holdings snapshots may affect within-pair estimates. We therefore use the fixed-effects comparison to test whether the source relations persist within stock pairs, and we compare holdings definitions to test their sensitivity to the observed scope of holdings.

3. Data and Research Design

3.1. Sample and Timing

Our data come from the CSMAR database and include fund holdings, share-class and fund information, announcement dates, and manager tenure records, as well as stock prices, factor returns, historical industry classifications, and financial statements. The main sample consists of actively managed equity and hybrid funds; we exclude index funds, exchange-traded funds and their feeder funds, qualified domestic institutional investor funds, and funds of funds. Share classes of the same portfolio are merged and counted once. Formation periods run from the fourth quarter of 2015 to the third quarter of 2024 and cover 5,934 distinct portfolios. Funds that were later liquidated are included while they were in operation. As an alternative sample, we use ordinary equity funds, excluding funds whose category or operating mode is recorded as having changed.

We identify common top holdings from the top ten stock holdings reported in quarterly reports, keeping ties, and retain A-shares only. Non-A-share holdings are dropped without being replaced, and missing reports are not treated as zero holdings. In each period, we form unordered pairs from stocks that are held by at least one eligible portfolio, are normally listed, and have complete historical data. A stock pair with "no common fund" is one that no sample fund holds jointly among its top ten holdings.

To ensure that holdings are public before comovement is measured, we separate the holdings date from the outcome window. For a quarter ending in month q, the report must be published by the end of month q+1, and comovement is measured in months q+2 to q+4. For example, holdings as of December 2015 must be available by the end of January 2016, and comovement is computed from daily returns in February, March, and April 2016. Because our return data end in December 2024, holdings for the third quarter of 2024 are matched only to November and December 2024. Full holdings from semiannual and annual reports, used in later tests, must be available by the end of August of the same year and the end of March of the following year, and are matched to September–November and to April–June of the following year, respectively.

The full stock-pair sample used for the group comparison covers 107 months from February 2016 to December 2024, with 116,419,733 stock pair-months. The regressions on source shares require at least two common funds and cover 101 months from August 2016 to December 2024, with 1,800,150 observations. They begin in August 2016 because, before that date, fewer than 100 stock pairs per month meet the requirements in the ordinary equity fund sample, and we want both samples to cover the same period. After industry adjustment, the two samples contain 116,283,617 and 1,799,858 observations, respectively.

3.2. Measuring Comovement and Common Ownership

For each stock, we project daily returns on a constant and three factors over the 252 trading days ending on the formation date, requiring at least 120 valid trading days. The factors are CSMAR's market, size, and book-to-market factors for Shanghai and Shenzhen A-shares (P9714), weighted by tradable market value and constructed following Fama and French [23]. Stock returns are daily returns with cash dividends reinvested. Because we do not subtract the risk-free rate, we refer to the resulting residuals as three-factor projection residuals rather than standard three-factor residuals. Factor loadings are fixed at the formation date, and residuals are computed by subtracting the fitted projection from daily returns in the outcome month. Days with no valid return, no trading, or a stock's first day of listing are excluded. Comovement for a stock pair is defined as

$$\rho_{ij,t} = \frac{\sum_{d\in D_{ij,t}}(\hat{e}_{i,d}-\bar{e}_i)(\hat{e}_{j,d}-\bar{e}_j)}{\sqrt{\sum_{d\in D_{ij,t}}(\hat{e}_{i,d}-\bar{e}_i)^2\sum_{d\in D_{ij,t}}(\hat{e}_{j,d}-\bar{e}_j)^2}} \quad (1)$$

Where D is the set of days on which both stocks have valid returns in the outcome month, and residual means are computed over the same days. We require at least 10 such days, covering at least 80% of the month's trading days, and positive residual variances. To remove common industry movements, the industry-adjusted version adds the return of the stock's industry, excluding the stock itself, to the projection. Industries are defined at the division level of the 2012 China Securities Regulatory Commission classification, based on each stock's industry at the formation date. Industry returns are weighted by tradable market value on the previous trading day and are computed from Shanghai and Shenzhen A-shares, including the ChiNext and STAR markets but excluding the Beijing Stock Exchange, using only stocks with valid returns and positive weights on that day. All coefficients and group differences reported below are in units of correlation.

Let F denote the set of eligible portfolios that hold both stocks i and j among their top holdings, and let N denote the number of such portfolios. Following Antón and Polk [1], we measure the intensity of common ownership as the combined market value of the two stocks held by common funds, divided by the combined total A-share market value of the two stocks:

$$\mathrm{FCAP}_{ij,q} = \frac{\sum_{f\in\mathcal{F}_{ij,q}}(S_{if,q}P_{i,q}+S_{jf,q}P_{j,q})}{\mathrm{MCAP}_{i,q}+\mathrm{MCAP}_{j,q}} \quad (2)$$

Where S is the number of shares held, P is the price at the end of the period, and MCAP is a stock's total A-share market value. Because FCAP is right-skewed and often zero, we compute its average tied rank within the full stock-pair sample each month and standardize the rank to have mean zero and unit standard deviation, which yields FCAP*. The source analysis and the industry-adjusted subsample use these values without re-ranking. A one-unit increase in FCAP* therefore corresponds to a one-standard-deviation increase in rank.

We define organizational sources from the pairwise links among common funds. A fund's family c is identified by the name of its management company at the end of the period, and its manager set M includes all managers in office at the end of the period, matched by name within the same family and period. Two funds that share several managers count as one shared-manager pair. The within-family share C is the fraction of all unordered pairs of common funds that belong to the same family:

$$C_{ij,q} = \frac{\sum_{f<g} \mathbf{1}\{c(f,q)=c(g,q)\}}{\binom{N_{ij,q}}{2}}, \quad f,g \in \mathcal{F}_{ij,q} \tag{3}$$

We decompose C into the share of pairs that belong to the same family and share at least one manager, C_{mgr}, and the share of pairs that belong to the same family but have no observed shared manager, C_{org}. Both shares use the total number of unordered pairs of common funds as the denominator and thus describe the composition of fund pairs:

$$\begin{aligned} C_{\text{mgr},ij,q} &= \frac{\sum_{f<g} \mathbf{1}\{c(f,q)=c(g,q),\, \mathcal{M}_{f,q} \cap \mathcal{M}_{g,q} \neq \varnothing\}}{\binom{N_{ij,q}}{2}} \\ C_{\text{org},ij,q} &= C_{ij,q} - C_{\text{mgr},ij,q} \end{aligned} \tag{4}$$

The cross-family share is $1 - C$. The shares are undefined when N is below 2, and such observations are excluded from the source regressions. Within-family pairs whose manager records are incomplete, so that sharing cannot be verified, are assigned to C_{org}. For brevity, we refer to this category as "same family, no shared manager," with the understanding that it includes pairs with missing manager records. In the industry-adjusted source sample, the average share of within-family pairs with missing manager records is about 0.14% of the average of C_{org}. We examine alternative treatments of renamed families and conflicting manager records in Section 4.5.

Table 1 reports summary statistics for the source sample. Within-family pairs account for about 0.51 of all pairs of common funds on average, and shared-manager pairs for about 0.46. The mean of C_{org} is low, and 81.54% of its observations are zero, which should be kept in mind when interpreting its coefficient.

Table 1. Summary statistics for the source sample

Variable	Mean	Std. dev.
Three-factor residual correlation	0.0679	0.2897
Industry-adjusted residual correlation	0.0253	0.2616
FCAP (%)	0.3637	0.7176
FCAP*	5.0121	0.6901
Number of common funds, N	5.3055	11.6246
Within-family share, C	0.5138	0.4372
Shared-manager share, C_{mgr}	0.4594	0.4380
Within-family, no-shared-manager share, C_{org}	0.0544	0.1784

Note: The sample consists of actively managed equity and hybrid funds with N ≥ 2 from August 2016 to December 2024. Statistics are equally weighted across stock pair-months. The industry-adjusted residual correlation is based on 1,799,858 valid observations; all other variables are based on 1,800,150 observations. FCAP is in percent, and source shares are raw proportions. Because FCAP* is rank-standardized within the full stock-pair sample each month, its mean and standard deviation in this subsample differ from 0 and 1. Source: CSMAR and author's calculations.

3.3. Empirical Specification and Inference

We begin with a simple group comparison. Using stock pairs with no common fund as the omitted group, we define five groups: N = 1; N = 2 with a shared manager; N = 2 in the same family without a shared manager; N = 2 in different families; and N ≥ 3. Each month, we regress comovement on group indicators and stock characteristics. This specification excludes FCAP* and exact-N effects, so the three N = 2 groups have the same number of common funds but may differ in ownership amounts, which we control for in the regressions below.

The source regressions use stock pairs with N ≥ 2 and include exact-N effects, that is, a separate intercept for each number of common funds in each month rather than a linear term in N. We first examine overall family concentration using C and then estimate the decomposition

$$\begin{aligned} \rho_{ij,t} = \; & \alpha_{N,t} + \beta_t \text{FCAP}^*_{ij,t} + \gamma_{\text{mgr},t} C_{\text{mgr},ij,q} \\ & + \gamma_{\text{org},t} C_{\text{org},ij,q} + \boldsymbol{\theta}_t{}' \mathbf{X}_{ij,t} + u_{ij,t} \end{aligned} \tag{5}$$

Where q is the formation period matched to outcome month t. Ownership counts, source shares, and stock characteristics are measured at the end of the formation period, while variables that are rank-standardized within the cross-section of the outcome month are indexed by t.

The vector $\mathbf{X}$ contains 14 controls: a same-industry indicator; similarity in size, book-to-market, and momentum; the smaller and larger market capitalization of the pair; the lower and higher turnover; the correlation of systematic components; the historical residual correlation; the smaller and larger number of funds holding each stock; and the lower and higher fund ownership ratios. Similarity is the negative of the absolute difference between the two stocks' percentile ranks, so larger values mean greater similarity. Momentum is the return over the 12 complete calendar months ending on the formation date. Book equity comes from the most recent consolidated statement that was announced, and whose reporting period ended, no later than the formation date, and whose reporting period ended within 18 months of that date. The systematic-component correlation and the historical residual correlation are, respectively, the correlations of the fitted three-factor components and of the projection residuals over the 252 trading days ending on the formation date; the same definitions are used for both outcome measures. Turnover is cumulative turnover in the last month of the formation period, and the fund ownership ratio is the market value held by eligible portfolios divided by the stock's total A-share market value. The number of funds holding each stock and the fund ownership ratio are computed from eligible funds under the relevant holdings definition: top-ten A-share holdings in the main analysis and all A-share holdings in the full-holdings tests. Except for the industry indicator, all continuous controls are rank-standardized within the full stock-pair sample each month, whereas the source shares enter as raw proportions. Because C is the sum of the two source shares, it is excluded from the decomposition, and cross-family pairs serve as the omitted category.

We estimate the cross-sectional regressions by the method of Fama and MacBeth [24], averaging monthly OLS coefficients with equal weights. Standard errors follow Newey and West [25] with four lags, and 95% confidence intervals are based on a t distribution with degrees of freedom equal to the number of months minus one. Group differences and differences between source coefficients are estimated directly from the monthly series of differences. Because the months in the full-holdings tests are not consecutive, Newey–West lags are based on calendar-month distance.

Finally, using the industry-adjusted source sample, we estimate a panel model with stock-pair fixed effects μ, month fixed effects λ, and exact-N effects η:

$$\begin{aligned} \rho^H_{ij,t} = \; & \mu_{ij} + \lambda_t + \eta_N + \beta \text{FCAP}^*_{ij,t} \\ & + \gamma_{\text{mgr}} C_{\text{mgr},ij,q} + \gamma_{\text{org}} C_{\text{org},ij,q} + \boldsymbol{\theta}' \mathbf{X}_{ij,t} + u_{ij,t} \end{aligned} \tag{6}$$

We also estimate a pooled panel that omits μ but is otherwise identical and uses exactly the same sample. In both panels, the slopes on the controls and the exact-N effects are constant over time, and standard errors are two-way clustered by stock pair and month following Cameron et al. [26]. This design isolates the effect of adding stock-pair fixed effects from differences in weighting and slope restrictions between the Fama–MacBeth and pooled estimates.

4. Empirical Results

4.1. Source Differences for a Given Number of Common Funds

Table 2 reports each group's coefficient relative to stock pairs with no common fund, together with directly estimated differences between groups. Using three-factor residuals, the coefficients for pairs with exactly two common funds are 0.0139 when the funds share a manager, 0.0131 when they belong to the same family without a shared manager, and 0.0289 when they belong to different families. Both within-family groups have lower coefficients than the cross-family group, with differences of −0.0149 and −0.0157; neither 95% confidence interval includes zero. For the same number of common funds, stock pairs whose common owners belong to the same family therefore comove less.

With industry-adjusted residuals, the coefficient for the cross-family group is 0.0102, compared with 0.0067 for the shared-manager group and 0.0043 for the same-family, no-shared-manager group. The differences from the cross-family group, −0.0035 and −0.0060, remain significantly negative, indicating that the gap is not driven entirely by common industry movements.

Because the group comparison does not control for ownership amounts, we test in the next subsection whether ownership intensity accounts for the gap. We also note that, with industry-adjusted residuals, the N = 1 group does not differ significantly from either within-family N = 2 group.

Table 2. Comovement by number of common funds and organizational source

Group	Three-factor residuals	Industry-adjusted residuals
N = 1	0.0160 [0.0135, 0.0184]	0.0065 [0.0055, 0.0075]
N = 2, shared manager	0.0139 [0.0105, 0.0173]	0.0067 [0.0048, 0.0086]
N = 2, same family, no shared manager	0.0131 [0.0080, 0.0182]	0.0043 [0.0009, 0.0077]
N = 2, different families	0.0289 [0.0233, 0.0344]	0.0102 [0.0074, 0.0131]
N ≥ 3	0.0345 [0.0283, 0.0406]	0.0137 [0.0107, 0.0168]
Diff.: N = 1 − shared manager	0.0020 [0.0002, 0.0038]	−0.0002 [−0.0014, 0.0010]
Diff.: N = 1 − same family, no shared manager	0.0028 [−0.0013, 0.0069]	0.0022 [−0.0009, 0.0054]
Diff.: shared manager − different families	−0.0149 [−0.0183, −0.0116]	−0.0035 [−0.0053, −0.0017]
Diff.: same family, no shared manager − different families	−0.0157 [−0.0197, −0.0118]	−0.0060 [−0.0093, −0.0026]
Stock pair-months	116,419,733	116,283,617
Months	107	107

Note: The omitted group is N = 0. All regressions include 14 stock-characteristic controls but exclude FCAP* and exact-N effects. Coefficients are differences relative to the N = 0 group conditional on stock characteristics, not unconditional group means. Rows labeled "Diff." report differences between groups, where the named subgroups have N = 2. Brackets report 95% confidence intervals here and in the following tables. Monthly cross-sectional regressions are aggregated by the Fama–MacBeth method with Newey–West standard errors (four lags). Group differences are estimated from the monthly time series of coefficient differences and may therefore differ slightly from differences in the rounded coefficients. Source: CSMAR and author's calculations.

4.2. Controlling for the Number and Intensity of Common Owners

Table 3 controls for exact-N effects, the intensity of common ownership, and 14 stock characteristics in the sample with at least two common funds. With industry-adjusted residuals, the coefficient on the within-family share C is −0.0164 (95% confidence interval: [−0.0184, −0.0144]). Holding the number of common funds and the other variables constant, stock pairs with a larger share of within-family fund pairs thus exhibit lower subsequent residual return correlations.

Table 3. Family concentration and source decomposition

	(1) Concentration, industry-adjusted	(2) Decomposition, three-factor	(3) Decomposition, industry-adjusted
C	−0.0164 [−0.0184, −0.0144]	—	—
C_{mgr}	—	−0.0328 [−0.0374, −0.0283]	−0.0172 [−0.0192, −0.0152]
C_{org}	—	−0.0243 [−0.0292, −0.0194]	−0.0110 [−0.0133, −0.0086]
$C_{mgr} - C_{org}$	—	−0.0086 [−0.0124, −0.0047]	−0.0062 [−0.0083, −0.0041]
FCAP*	0.0360 [0.0239, 0.0481]	0.1032 [0.0856, 0.1207]	0.0359 [0.0239, 0.0480]
Stock pair-months	1,799,858	1,800,150	1,799,858
Months	101	101	101

Note: The sample consists of actively managed equity and hybrid funds with N ≥ 2. All columns include 14 controls, FCAP*, and month-specific exact-N effects, and are estimated by the Fama–MacBeth method with Newey–West standard errors (four lags). In columns (2) and (3), cross-family pairs are the omitted category. "—" indicates that the variable is not included. Source: CSMAR and author's calculations.

When the within-family share is decomposed, the coefficient on the shared-manager share C_{mgr} is −0.0172 and that on the same-family, no-shared-manager share C_{org} is −0.0110; both are significantly negative. Because the cross-family share is the omitted category, each coefficient measures the change in comovement associated with shifting pairs from the cross-family category into the corresponding within-family category, holding the other within-family share constant. The difference between the two coefficients is −0.0062 (95% confidence interval: [−0.0083, −0.0041]), so for a given change in the share, the association is more negative for shared-manager pairs.

To gauge economic magnitudes, we multiply each month's coefficient by that month's interquartile range and average across months. With industry-adjusted residuals, an interquartile-range increase in C corresponds to a change in comovement of −0.0157 (95% confidence interval: [−0.0174, −0.0140]); the corresponding figure for C_{mgr} is −0.0170 ([−0.0189, −0.0151]). Because 81.54% of the observations of C_{org} are zero, its interquartile range is zero in all 101 months, so this measure is uninformative about its economic magnitude.

Adding the source variables improves in-sample fit only modestly: the average adjusted R^2 of the industry-adjusted model rises from 0.02336 to 0.02395 with C and to 0.02396 with the decomposition.

4.3. Pooled and Within-Pair Estimates

Table 4 uses the same 1,799,858 stock pair-months, covering 220,462 distinct stock pairs, to compare Fama–MacBeth, pooled panel, and stock-pair fixed-effects estimates. In the pooled panel, the coefficients on C_{mgr} and C_{org} are −0.0196 and −0.0121, with the same signs as the Fama–MacBeth estimates. Because the two methods weight months differently and impose different slope restrictions, we focus on the comparison between the two panel models, whose specifications are more closely matched.

Table 4. Cross-sectional, pooled, and within-pair estimates in the same sample

	(1) Fama–MacBeth	(2) Pooled panel	(3) Stock-pair fixed effects
FCAP*	0.0359 [0.0239, 0.0480]	0.0284 [0.0189, 0.0380]	0.0007 [−0.0104, 0.0117]
C_{mgr}	−0.0172 [−0.0192, −0.0152]	−0.0196 [−0.0214, −0.0178]	−0.0032 [−0.0053, −0.0011]
C_{org}	−0.0110 [−0.0133, −0.0086]	−0.0121 [−0.0149, −0.0093]	−0.0006 [−0.0042, 0.0030]
Stock-pair fixed effects	No	No	Yes
Month fixed effects	Monthly regressions	Yes	Yes
Exact-N effects	Month-specific	Time-invariant	Time-invariant
Stock pair-months	1,799,858	1,799,858	1,799,858
Months	101	101	101

Note: The dependent variable is the industry-adjusted residual correlation. All columns control for 14 stock characteristics. Column (1) reports Fama–MacBeth estimates with Newey–West standard errors (four lags). Columns (2) and (3) report standard errors two-way clustered by stock pair and month; both use the same estimation sample, including 991 stock pairs observed only once, and impose the same time-invariant slopes on the controls and exact-N effects. They differ only in whether stock-pair fixed effects are included. Source: CSMAR and author's calculations.

Adding stock-pair fixed effects to the pooled panel reduces the coefficient on C_{mgr} to −0.0032 (95% confidence interval: [−0.0053, −0.0011]) and the coefficient on C_{org} to −0.0006 ([−0.0042, 0.0030]). The shared-manager share thus retains a small negative association, whereas the other share becomes insignificant. The coefficient on FCAP* also falls from 0.0284 to 0.0007, and its confidence interval includes zero. The fixed-effects estimates rely on within-pair variation in the source shares: stock pairs whose shared-manager share varies over time account for 68.18% of observations, and the corresponding figure for the same-family, no-shared-manager share is 45.54%. After stock-pair means are removed, the standard deviations of the two shares are 57.57% and 68.95% of their original values.

The absolute value of the shared-manager coefficient falls by about 84% relative to the pooled panel, so the source relations are much weaker within stock pairs than across them. This pattern is consistent with the source relations mainly reflecting stable differences across stock pairs. Such differences may arise from either shared characteristics of the stocks or a stable exposure to correlated trading, and our data do not allow us to separate the two.

4.4. Top-Ten versus Full Holdings

Because only the top ten holdings are disclosed quarterly, the cutoff may affect which funds are identified as common owners. To test whether the source relations hold under both disclosed holdings definitions, we restrict each formation period to funds that are eligible in both the quarterly report and the semiannual or annual report, and we keep stock pairs with at least two common funds under top-ten holdings. We then construct the explanatory variables from top-ten and from full A-share holdings. The two definitions share the same formation periods, stock pairs, outcome months, and dependent variable, but the set and number of common funds for a given pair may differ. The two types of reports are occasionally inconsistent, and we keep the original records from each: 49 fund–period–stock records, or 0.0095% of quarterly top-ten A-share records, disagree, of which 4 stocks are missing from full holdings and 45 differ in the number of shares. Given how few records are affected, we make no further adjustment. The matched sample contains 18 semiannual or annual formation periods from December 2015 to June 2024, 54 outcome months, and 870,562 observations. Outcome months are April–June and September–November of each year from 2016 to 2024, including April–June 2016, which precedes the start of the main source regressions.

Table 5 shows that, under matched top-ten holdings, the coefficients on C_{mgr} and C_{org} are −0.0157 and −0.0142; under full holdings, they are −0.0468 and −0.0250. All four are significantly negative. For stock pairs in the common top-holding sample, the negative source relations therefore hold under both holdings definitions. Because the number of common funds, the distribution of the source shares, and the standardization reference all change with the definition, the coefficients in the two columns should not be compared in magnitude.

Table 5. Top-ten versus full holdings

	(1) Matched sample, top-ten holdings	(2) Matched sample, full holdings	(3) Full-holdings sample, 1% of pairs
C_{mgr}	−0.0157 [−0.0185, −0.0129]	−0.0468 [−0.0619, −0.0318]	−0.0019 [−0.0054, 0.0017]
Corg	−0.0142 [−0.0195, −0.0090]	−0.0250 [−0.0394, −0.0106]	0.0035 [−0.0052, 0.0123]
FCAP*	0.0323 [0.0169, 0.0478]	0.0155 [0.0049, 0.0262]	0.0012 [−0.0035, 0.0059]
Stock pair-months	870,562	870,562	772,590
Months	54	54	54

Note: The dependent variable is the industry-adjusted residual correlation. Columns (1) and (2) include stock pairs with $N \geq 2$ under top-ten holdings; within each formation period they share the same eligible funds, stock pairs, outcome months, and dependent variable, while the set and number of common owners are recomputed under each holdings definition. Column (3) is a 1% random sample of stock pairs with $N \geq 2$ under full holdings and is not estimated on the same sample. All columns control for FCAP*, 14 stock characteristics, and exact-N effects defined under the corresponding holdings; continuous variables are rank-standardized within their respective full stock-pair samples. Estimates are Fama–MacBeth with Newey–West standard errors (four lags, based on calendar-month distance). Source: CSMAR and author's calculations.

The last column of Table 5 uses a separate sample drawn from full holdings. It includes stock pairs with at least two common funds under full holdings; after the variables are constructed and standardized, we sample stock pairs with a fixed probability of 1% and keep each sampled pair in all periods, which yields 772,590 observations over 54 months. The coefficients on C_{mgr} and C_{org} are −0.0019 and 0.0035, and neither is significant. Because this sample covers a different set of funds and stock pairs, it is not a same-sample test. The results show that the negative source relations are robust among stock pairs connected through common top holdings but are not supported in the broader full-holdings sample.

4.5. Robustness and Limitations

The results are not sensitive to how managers and families are identified. When we either split or drop managers with the same name but conflicting records, the coefficient on Cmgr with industry-adjusted residuals remains −0.0172 after rounding, and the coefficient on Corg ranges from −0.0111 to −0.0109. When we merge the few management companies that appear under both old and new names using their company codes at quarter-end, both source coefficients remain significantly negative.

Inference is also robust to the treatment of time-series dependence. Using a circular block bootstrap with 999 replications and six-month blocks, applied to the monthly coefficient series with the same resampled months for both source terms and their difference, we find that the 95% confidence intervals for Cmgr, Corg, and their difference all exclude zero, consistent with the Newey–West results. When the sample is restricted to ordinary equity funds, the shared-manager coefficient remains significantly negative with industry-adjusted residuals, whereas the same-family, no-shared-manager coefficient is −0.0087, with a confidence interval of [−0.0193, 0.0019] that includes zero. The shared-manager result is therefore consistent across the two fund samples, whereas the significance of the other source term comes mainly from the main sample, which includes hybrid funds.

Our analysis has several limitations. First, disclosed holdings are quarterly or semiannual snapshots that reveal neither fund flows nor trading within the period, and unobserved time-varying characteristics may affect both fund portfolios and stock comovement. Our estimates are therefore conditional associations and cannot identify the relative

contributions of asset selection and correlated trading. Second, family and manager identities rely on database mappings, and fund types are assigned retrospectively using current classifications, which may introduce classification errors. Third, two-way clustering does not account for every form of dependence across stock pairs and months that arises from shared stocks, funds, or managers [27]; in addition, the fixed-effects estimates use only periods in which a pair has at least two common funds and may be affected by errors in holdings snapshots. Fourth, the matched sample is conditioned on common top holdings, and whether the results extend to overlaps in holdings more generally remains an open question.

5. Conclusion

We study how the organizational composition of common mutual fund owners relates to stock return comovement in China. Among stock pairs held by exactly two common funds, pairs held across families comove significantly more than pairs held within a family. After controlling for the number of common funds, the intensity of common ownership, and stock characteristics, the shares of both shared-manager pairs and same-family pairs without a shared manager are negatively related to comovement. Even for a given number of common funds, then, the organizational composition of common owners is related to comovement.

When stock-pair fixed effects are added to an otherwise identical pooled panel estimated on the same sample, the source coefficients weaken markedly: the shared-manager coefficient remains small and negative, while the other becomes insignificant. This is consistent with the source relations mainly reflecting stable differences across stock pairs. For stock pairs connected through common top holdings, the negative relations hold under both top-ten and full holdings, but no significant relation appears in a separate random sample of stock pairs drawn from full holdings.

Our findings suggest that measures of common ownership can be enriched by distinguishing the family affiliation and manager links of common owners, in addition to the number of common funds and the amount they hold. Future research could combine fund flow and trading data to separate the roles of asset selection and correlated trading.

References

[1] Antón, M., & Polk, C. (2014). Connected stocks. The Journal of Finance, 69(3), 1099–1127.

[2] Coval, J., & Stafford, E. (2007). Asset fire sales (and purchases) in equity markets. Journal of Financial Economics, 86(2), 479–512.

[3] Greenwood, R., & Thesmar, D. (2011). Stock price fragility. Journal of Financial Economics, 102(3), 471–490.

[4] Chen, X., Liu, Y., & Luo, R. (2017). Does information sharing among institutional investors lead to black swans? Fund information networks and extreme market risk. Journal of Financial Research, (7), 140–155. (In Chinese).

[5] Li, K., et al. (2019). Mutual fund manager turnover, stock connection and stock price. Journal of Financial Research, (1), 188–206. (In Chinese).

[6] Zhou, Y., Tang, C., & Xu, X. (2025). Fund common ownership network and stock price comovement. Journal of Financial Research, (11), 189–206. (In Chinese).

[7] Elton, E. J., Gruber, M. J., & Green, T. C. (2007). The impact of mutual fund family membership on investor risk. Journal of Financial and Quantitative Analysis, 42(2), 257–277.

[8] Cici, G., Jaspersen, S., & Kempf, A. (2017). Speed of information diffusion within fund families. The Review of Asset Pricing Studies, 7(1), 144–170.

[9] He, X., Su, Z., & Zhang, Y. (2024). Product homogenization in fund families and fund performance. Journal of Management Science, 37(5), 146–158. (In Chinese).

[10] Hong, H., Kubik, J. D., & Stein, J. C. (2005). Thy neighbor's portfolio: Word-of-mouth effects in the holdings and trades of money managers. The Journal of Finance, 60(6), 2801–2824.

[11] Pool, V. K., Stoffman, N., & Yonker, S. E. (2015). The people in your neighborhood: Social interactions and mutual fund portfolios. The Journal of Finance, 70(6), 2679–2732.

[12] Luo, Y., & Lin, S. (2022). A study of fund managers' investment behavior from the perspective of social network analysis. Modern Finance and Economics (Journal of Tianjin University of Finance and Economics), 42(4), 79–95. (In Chinese).

[13] Shen, Y., Mao, X., & Liu, Y. (2024). Alumni network, mutual fund herding and information spillover: Evidence from China. Pacific-Basin Finance Journal, 83, 102265.

[14] Genc, E., et al. (2023). Finding information in obvious places: Work connections and mutual fund investment ideas. Journal of Financial Markets, 63, 100767.

[15] Cici, G., Kempf, A., & Peitzmeier, C. (2022). Knowledge spillovers in the mutual fund industry through labor mobility. Journal of Banking & Finance, 134, 106310.

[16] Ben-David, I., et al. (2021). The granular nature of large institutional investors. Management Science, 67(11), 6629–6659.

[17] Barberis, N., Shleifer, A., & Wurgler, J. (2005). Comovement. Journal of Financial Economics, 75(2), 283–317.

[18] Luo, R., Tian, Z., & Fang, H. (2020). "Harmonious but different" or "standing out from the crowd"? A perspective of fund network information use. Journal of Financial Research, (8), 188–206. (In Chinese).

[19] Peng, W., & Chen, Y. (2015). Conflicts of interest and substitution of management effort in funds: Evidence from managers running multiple funds. Review of Investment Studies, 34(4), 129–142. (In Chinese).

[20] Beggs, W., & DeVault, L. (2022). Mutual fund (sub)advisor connections and crowds. Journal of Empirical Finance, 67, 231–252.

[21] Caglayan, M. O., Hu, Y., & Xue, W. (2021). Mutual fund herding and return comovement in Chinese equities. Pacific-Basin Finance Journal, 68, 101599.

[22] Guo, X., et al. (2024). Institutional herding and investor sentiment. Journal of Financial Markets, 68, 100891.

[23] Fama, E. F., & French, K. R. (1993). Common risk factors in the returns on stocks and bonds. Journal of Financial Economics, 33(1), 3–56.

[24] Fama, E. F., & MacBeth, J. D. (1973). Risk, return, and equilibrium: Empirical tests. Journal of Political Economy, 81(3), 607–636.

[25] Newey, W. K., & West, K. D. (1987). A simple, positive semi-definite, heteroskedasticity and autocorrelation consistent covariance matrix. Econometrica, 55(3), 703–708.

[26] Cameron, A. C., Gelbach, J. B., & Miller, D. L. (2011). Robust inference with multiway clustering. Journal of Business & Economic Statistics, 29(2), 238–249.

[27] Aronow, P. M., Samii, C., & Assenova, V. A. (2015). Cluster-robust variance estimation for dyadic data. Political Analysis, 23(4), 564–577.