Internet Appendix

A Details on the Morningstar Data

For the set of of funds we have, we pull the market value of all holdings, shares held and portfolio weights, as well as the ISIN and CUSIP for each instrument held. While we also pull information related to the currency of the instrument and the type of instrument, we use these variables only to cross check the equivalent instrument characteristics we pull from Refinitiv Eikon and Datastream.

Then we compile a list of all ISINs, and if the ISIN is not available, the CUSIPs, held by our sample of funds. We end up with close to 2 million ISINs or CUSIP. These are classified into types of assets such as Equities, Government Debt, Corporate Debt etc., where each subgroup has further narrow classifications. For example, ordinary shares and depository receipts are the largest categories in the Equity group. We discard the depository receipts in the analysis in this paper.

From Refinitiv Eikon, we also pull the mappings between the ISIN of an asset and its CUSIP. When analyzing the holdings, we make sure to keep only holdings that have consistent ISIN/CUSIP classifications with Refinitiv. What we mean by this is that if the Morningstar holdings data reports both the ISIN and the CUSIP and they are different from the ISIN - CUSIP pair we pull from Refinitiv we consider this a mistake in the Morningstar data and drop that holding, given that we do not know which asset we can attribute the entry to.

When constructing the change in weights for a given asset and fund, we make sure that we do not discard information. More precisely, if for example for fund i and asset j we observe entries in the holdings data from March 2008 to April 2014 then we assume that the fund purchased stock i for the first time in March 2008 so the holdings of this instrument at the end of Feb 2008 are zero and similarly we assume the holdings at the end of May 2014 are zero as by then the asset is sold. This way we ensure we don't throw away relevant information when constructing the changes in weights.

Regarding the growth rate of assets under management we use the sum of the total market value of all ISINs. We cross check this number with the reported AUM in Morningstar Direct collected via a survey and if we find significant discrepancies in the two variables we discard these funds.

We construct the net-of-fee returns from the reported share class net-of-fee returns which are aggregated to the fund level while the flows are backed out from the growth rate of the assets under management and the net-of-fee returns and are further cross-checked with reported surveyed data on flows in Morningstar Direct.

The fund's ROS currency is constructed from the "base currency", which is the currency in which the share class of the fund is sold, combined with the share class AUM. First, we construct the total AUM by base currency for a given fund. By date, for a given fund, we select the currency with the largest AUM and then take the mode of that currency over time for a given fund. The mode currency represents the ROS currency of the fund.

For the index fund/active fund classification we use the Morningstar Direct variable called "Index Fund". A fund is classified as an index fund if "Index Fund=Yes" and as an active fund if "Index Fund=No". To construct the tracking error, used to further split the active funds, we use the reported "Primary Prospectus Benchmark", provided in Morningstar Direct. The "Broad Investment Strategy" and the "Narrow Investment Strategies" are provided by the variables "Global Broad Category Group" and "Global Category" in Morningstar Direct, respectively.

Finally, we also discard outliers at different stages of the analysis as, with any big data source, there seems to be apparent mistakes in the Morningstar Direct data set as well.

B Refinitiv Eikon/Datastream

At an ISIN level, we construct the following time series variables and characteristics:

- "Type of Asset" – we classify an ISIN as equity vs fixed income etc, where the available level of classification is very granular. The variable in Eikon that we use is: "Asset Category Description"
- "Currency" of the ISIN or CUSIP– this is the currency of issuance of the ISIN. We cross check the currency reported in Eikon for a given ISIN and the currency reported for that same ISIN or CUSIP by the funds reporting in Morningstar. In the vast majority of the cases they are the same. We end up using the Morningstar reported currency if unique currency is reported by all investors for the given security. If multiple currencies are reported in Morningstar by different players we use the Eikon classification.
- "Market capitalization" at the ISIN or CUSIP level is obtained from Datastream, and, if missing, for all dates we supplement the series using Eikon. Notice that we drop all depository receipts and drop all equities for which a depository receipt conversion ratio is reported in Eikon.
- "Price" measured in "Currency" – the price we download is the "Closing Price" which corrects for shares' splits, which is consistent with our model. If we cannot find the price in Eikon or Datastream, we back it out from Morningstar, calculated using the market value and shares reported as holdings of a given ISIN for each fund. All prices are translated into the currency of issuance of the ISIN. We further remove observations where the monthly or quarterly price growth rate exceeds 100 percent in absolute value. The correlation between the price growth rates from the Morningstar and Eikon/Datastream data sources, after this cleaning, is 96

percent. Notice that we supplement the Eikon series with Datastream or Morningstar prices only if the Eikon price is not available for any one date and take care to exclude stale price series.

- "Sector" – We classify firms as belonging in one of the following sectors: Banks, Consumer Goods, Energy, Manufacturing, Other Financials, Services based on the Eikon variables: "Parent Industry Sector", "TRBC Economic Sector Name" and "TRBC Business Sector Name".
- "Country of Exposure" – the country where the main operational risk of the firm is and if missing we use proxies. Then based on this variables and the variable which is the currency of issuance of the ISIN we keep only ISINs where the country of exposure is the same as the currency of issuance. We do that as we want to focus on US firms that issue in US dollars to capture the US stock market rather than Brazilian firms issuing in USD, for example. We construct the "Country of Exposure" variable based on the Eikon variable "Country of Risk" and if missing, we proxy the country of exposure using one of the following variables "Issuer Country", "Ultimate Parent" and "Country of Headquarters" in that order.

C Stock Market Daily Indices

The data source is Global Financial Data and the list of stock market indices in local currency is:

- AUD – AORDD ; Australia ASX All-Ordinaries
- BRL – BR20; DJ Brazil Titans 20
- CAD – SPTSECP; S&P/TSX 60 Large Cap Capped Index
- CHF – SSMID; Swiss Market Index
- CLP – IGPAD; Santiago SE S&P CLX Indice General de Precios de Acciones
- CNH – CSI300D; Shanghai-Shenzhen CSI-300 Return Index Stock Indices
- COP – IGBCD; Colombia IGBC General Index (with GFD extension)
- CZK – PXD; Prague SE PX Index
- DKK – OMXCPID; OMX Copenhagen All-Share Price Index
- EGP – EGX30D; Egypt EGX-30 Index Large Cap
- EUR – STOXXE; EuroStoxx Price Index
- GBP – FTASD; UK FTSE All-Share Index
- HKD – HSID; Hong Kong Hang Seng Composite Index
- HUF – HTLD; Vienna OETEB Hungary Traded Index (Forint)
- IDR – ID1; Dow Jones Indonesia Stock Index

- ILS – TAALLSD; Tel Aviv All-Share Price Index
- INR – BSE500D; Mumbai BSE-500 Index
- JPY – N500D; Japan Nikkei 500 Index
- KRW – KS11D; Korea SE Stock Price Index (KOSPI)
- MXN – BMXD; Mexico Banamex-30 Index
- MYR – KLSED; Malaysia KLSE Composite
- NOK – OSEAXD; Oslo SE All-Share Index Total Return Indices
- NZD – NZCID; New Zealand SE S&P/NZX All-Share Capital Index
- PHP – PSID; Manila SE Composite Index
- PLN – PTLD; Vienna OETEB Poland Traded Index
- RUB – MCXD; Russia Moscow Index (MOEX) Composite
- SEK – OMXSPID; OMX Stockholm All-Share Price Index
- SGD – FTSTID; Singapore FTSE Straits-Times Index
- THB – SET100D; Thailand SET-100 Index
- TRY – XU100D; Istanbul SE IMKB-100 Price Index
- TWD – TSE50D; Taiwan FTSE/TSE-50 Price Index
- USD – SPXD ; S&P 500/Cowles Composite Price Index
- ZAR – JALSHD; FTSE/JSE All-Share Index

D Firm-level Analyst Forecasts

We obtain firm-level consensus analyst forecasts from the I/B/E/S US Summary Statistics file. For each firm and quarter we collect forecasts for a set of firm-level accounting fundamentals, which we index by $x \in \mathcal{X}$. The variables in $\mathcal{X}$ and their I/B/E/S codes are:

Fundamental	I/B/E/S code
Earnings per share	EPS
Book value per share	BPS
Cash flow per share	CPS
Capital expenditure (level)	CPX
Cash earnings per share	CSH
Dividend per share	DPS
Earnings per share before goodwill	EBG
EBIT (level)	EBI
EBITDA per share	EBS
EBITDA (level)	EBT
Enterprise value (level)	ENT
Earnings per share (alternate definition)	EPX
Funds from operations per share	FFO
GAAP earnings per share (fully reported)	GPS
Gross margin (percent)	GRM
Net asset value (level)	NAV
Net debt (level)	NDT
Net income (level)	NET
Operating profit (level)	OPR
Pre-tax profit (level)	PRE
Return on assets (percent)	ROA
Return on equity (percent)	ROE
Revenue (level)	SAL

For ISIN j, fundamental $x \in \mathcal{X}$, and announcement date t, we define the standardized forecast surprise as

$$s^j_{t,x} = \frac{y^j_{t,x} - \mathbb{E}\left[\, y^j_{t,x} \mid \mathcal{I}_{t-\Delta-} \right]}{\widehat{\sigma}^j_{t,x}}, \tag{21}$$

where $y^j_{t,x}$ denotes the realized value of fundamental x for firm j at date t, and $\mathbb{E}[\, y^j_{t,x} \mid \mathcal{I}_{t-\Delta-}]$ is the expectation conditional on the information set just prior to the announcement. The denominator $\widehat{\sigma}^j_{t,x}$ is the cross-sectional standard deviation of individual analyst forecasts for firm j, fundamental x, and announcement date t, as reported by I/B/E/S.

For each ISIN j, we then apply principal component analysis (PCA) to the panel of standardized surprises $\{s^j_{t,x}\}$, using all fundamentals $x \in \mathcal{X}$ for which we observe at least 50 non-missing quarterly observations.

E Marginal Trader Decomposition

Let $X_t^{i,j}$ define the shares held by fund i of ISIN j. Fund $i's$ equity holdings of ISIN j can be expressed as:

$$P_t^j X_t^{i,j} = \omega_t^{i,j} W_t^i S_t^{l/c^i},$$

which, when linearized, implies:

$$P_t^j X_t^{i,j} \approx \widehat{X^{i,j}}\widehat{P^j} + \left(p_t^j - \widehat{P^j}\right)\widehat{X^{i,j}}\widehat{P^j} + \widehat{P^j}\left(X_t^{i,j} - \widehat{X^{i,j}}\right),$$

where we log linearize $P_t^j, W_t^i, S_t^{l/c^i}$ and linearize $X_t^{i,j}, \omega_t^{i,j}$ around sample averages. Since $\widehat{X^{i,j}}\widehat{P^j} \approx \left(\widehat{W}^i \widehat{S}^{l/c^i}\widehat{\omega}^{i,j}\right)$, then

$$\Delta P_t^j X_t^{i,j} \approx \Delta p_t^j \left(\widehat{W}^i \widehat{S}^{l/c^i}\widehat{\omega}^{i,j}\right) + \widehat{P^j}\Delta X_t^{i,j}.$$

Re-writing equation (4), after splitting the equity holdings into marginal and non-marginal investors' equity holdings implies:

$$\left(\sum_{\left\{i\in I:\Delta X_t^{i,j}=0\right\}} \frac{\left(\widehat{W}^i \widehat{S}^{l/c^i}\widehat{\omega}^{i,j}\right)}{\widehat{P^j Q^j}}\right)\Delta p_t^j + \sum_{\left\{i\in I:\Delta X_t^{i,j}\neq 0\right\}} \frac{\widehat{W}^i \widehat{S}^{l/c^i}\widehat{\omega}^{i,j}}{\widehat{P^j Q^j}}\left(\frac{\Delta\omega_t^{i,j}}{\widehat{\omega}^{i,j}} + \Delta w_t^i + \Delta s_t^{l/c^i}\right) = \Delta p_t^j + \Delta q_t^j.$$

Next we use the same steps as in the main text. After scaling up the equation above using the inverse of the coverage ratio and expressing the equity holdings subcomponents as arithmetic averages and residuals, we obtain the following expression for equity price growth rates:

$$\begin{aligned}
\Delta p_t^j \quad = \quad & \left(\begin{array}{c}
\sum_m \sum_{\left\{i:\, i\in\tilde{I}\cap c^i\in m\cap\Delta X_t^{i,j}\neq 0\right\}} \frac{\mu^{i,j}}{\sum_{i\in\tilde{I}}\mu^{i,j}}\left(\Delta s_t^{l/m}\right) \\
\sum_{\tau\in\Upsilon}\sum_{\left\{i:\, i\in\tilde{I}\cap i\in\tau\cap\Delta X_t^{i,j}\neq 0\right\}} \frac{\mu^{i,j}}{\sum_{i\in\tilde{I}}\mu^{i,j}}\left(\alpha_t^{f,\tau} + \alpha_t^{\omega,\tau,j} + \bar{r}_t^{NF,\tau}\right) \\
+\sum_{\tau\in\Upsilon}\sum_{\left\{i:\, i\in\tilde{I}\cap i\in\tau\cap\Delta X_t^{i,j}=0\right\}} \frac{\mu^{i,j}}{\sum_{i\in\tilde{I}}\mu^{i,j}}\Delta p_t^j
\end{array}\right) \\
& + \sum_{\left\{i\in I:\Delta X_t^{i,j}\neq 0\right\}} \frac{\mu^{i,j}}{\widehat{P^j Q^j}}\left(\varepsilon_t^{r,i} + \varepsilon_t^{f,i} + \varepsilon_t^{\omega,i,j}\right) - \Delta q_t^j.
\end{aligned}$$

Simplifying the equation above further we can express the growth rate of the price of ISIN j only as a function of the holdings by marginal investors and new issuance:

$$
\begin{aligned}
\Delta p_t^j &= \frac{1}{\Theta^j} \sum_{\tau \in \Upsilon} \sum_{\left\{i:\ i \in \tilde{I} \cap c^i \in m \cap \Delta X_t^{i,j} \neq 0\right\}} \frac{\mu^{i,j}}{\sum_{i \in \tilde{I}} \mu^{i,j}} \left(\Delta s_t^{l/m}\right) \\
&+ \frac{1}{\Theta^j} \sum_{\tau \in \Upsilon} \sum_{\left\{i:\ i \in \tilde{I} \cap i \in \tau \cap \Delta X_t^{i,j} \neq 0\right\}} \frac{\mu^{i,j}}{\sum_{i \in \tilde{I}} \mu^{i,j}} \left(\alpha_t^{f,\tau} + \alpha_t^{\omega,\tau,j} + \bar{r}_t^{NF,\tau}\right) \\
&+ \frac{1}{\Theta^j} \sum_{\left\{i \in I: \Delta X_t^{i,j} \neq 0\right\}} \frac{\mu^{i,j}}{\widehat{P^j Q^j}} \left(\varepsilon_t^{r,i} + \varepsilon_t^{f,i} + \varepsilon_t^{\omega,i,j}\right) - \frac{1}{\Theta^j} \Delta q_t^j. \\
\Theta^j &= \left(1 - \left(\sum_{\tau \in \Upsilon} \sum_{\left\{i:\ i \in \tilde{I} \cap i \in \tau \cap \Delta X_t^{i,j} = 0\right\}} \frac{\mu^{i,j}}{\sum_{i \in \tilde{I}} \mu^{i,j}}\right)\right).
\end{aligned}
$$

We arrive at the following decomposition:

$$
\Delta p_t^j = \underbrace{\Delta \tilde{d}_t^{s,j} + \underbrace{\Delta \tilde{d}_t^{f,j} + \Delta \tilde{d}_t^{\omega,j} + \Delta \tilde{d}_t^{r^{NF},j}}_{\Delta \tilde{d}_t^{ROS,j}}}_{\Delta \tilde{d}_t^j} + \tilde{d}_t^{Resid,j} - \frac{1}{\Theta^j} \Delta q_t^j \tag{22}
$$

where

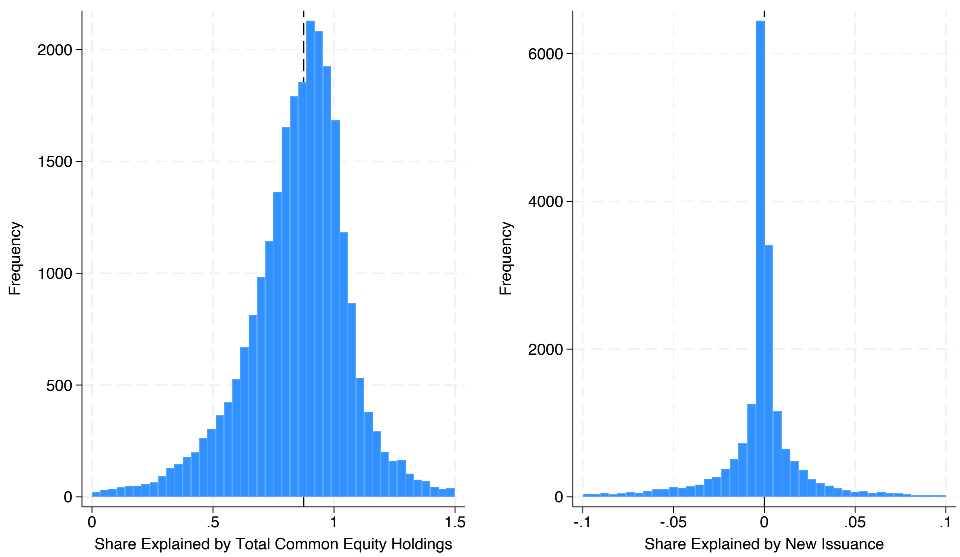
$$
\begin{aligned}
\Delta \tilde{d}_t^{s,j} &= \frac{1}{\Theta^j} \sum_{\tau \in \Upsilon} \sum_{\left\{i:\ i \in \tilde{I} \cap c^i \in m \cap \Delta X_t^{i,j} \neq 0\right\}} \frac{\mu^{i,j}}{\sum_{i \in \tilde{I}} \mu^{i,j}} \left(\Delta s_t^{l/m}\right), \\
\Delta \tilde{d}_t^{f,j} &= \frac{1}{\Theta^j} \sum_{\tau \in \Upsilon} \sum_{\left\{i:\ i \in \tilde{I} \cap i \in \tau \cap \Delta X_t^{i,j} \neq 0\right\}} \frac{\mu^{i,j}}{\sum_{i \in \tilde{I}} \mu^{i,j}} \left(\alpha_t^{f,\tau}\right), \\
\Delta \tilde{d}_t^{\omega,j} &= \frac{1}{\Theta^j} \sum_{\tau \in \Upsilon} \sum_{\left\{i:\ i \in \tilde{I} \cap i \in \tau \cap \Delta X_t^{i,j} \neq 0\right\}} \frac{\mu^{i,j}}{\sum_{i \in \tilde{I}} \mu^{i,j}} \left(\alpha_t^{\omega,\tau,j}\right), \\
\Delta \tilde{d}_t^{r^{NF},j} &= \frac{1}{\Theta^j} \sum_{\tau \in \Upsilon} \sum_{\left\{i:\ i \in \tilde{I} \cap i \in \tau \cap \Delta X_t^{i,j} \neq 0\right\}} \frac{\mu^{i,j}}{\sum_{i \in \tilde{I}} \mu^{i,j}} \left(\bar{r}_t^{NF,\tau}\right), \\
\tilde{d}_t^{Resid,j} &= \frac{1}{\Theta^j} \sum_{\left\{i \in I: \Delta X_t^{i,j} \neq 0\right\}} \frac{\mu^{i,j}}{\widehat{P^j Q^j}} \left(\varepsilon_t^{r,i} + \varepsilon_t^{f,i} + \varepsilon_t^{\omega,i,j}\right).
\end{aligned}
$$

The main difference with equation (11) from the main text is that in the "marginal trader decomposition" the equity holdings' subcomponents are scaled up by the factor $\frac{1}{\Theta^j}$ and we consider only the holdings of the marginal traders when constructing the common subcomponents of equity holdings.

At monthly frequency, in our sample, equity mutual funds change their shares held across two consecutive months, on average, about 59% of the time, for a given ISIN.[36] That number is around 78% at quarterly frequency. The equivalent numbers for allocation funds are 51% at monthly and 70% at quarterly frequency.[37]

Below, we present the monthly results of our marginal traders' decomposition and point out that the results are very similar to our benchmark specification which does not exclude the non-marginal traders. As we argue in the text, the lack of change of the shares held likely reveals meaningful information related to the lack of significant news for the ISIN over the period, which is also reflected in smaller price movements for that ISIN over that same period. This is why, we do not observe a significant difference between the results from our benchmark decomposition vs the results from the decomposition based on only marginal traders' holdings.

Figure E.26: ISIN-Level Equity Price Growth Rate Decomposition: Histograms (Marginal Traders)



[36]This number is based on the average frequency of rebalancing variable across funds defined in the main text.

[37]In contrast, for fixed income funds, the equivalent numbers are 34% and 50% for monthly and quarterly frequency, respectively, implying that fixed income funds are much more likely than equity funds to buy and hold a security without adjusting the shares held.

Figure E.27: ISIN-Level Equity Price Growth Rate Decomposition: Histograms subcomponents (Marginal Traders)

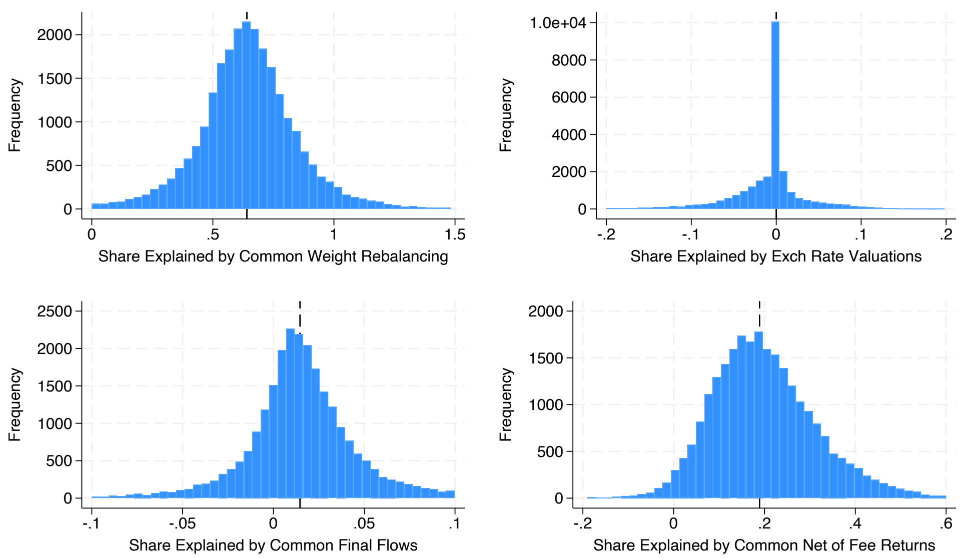
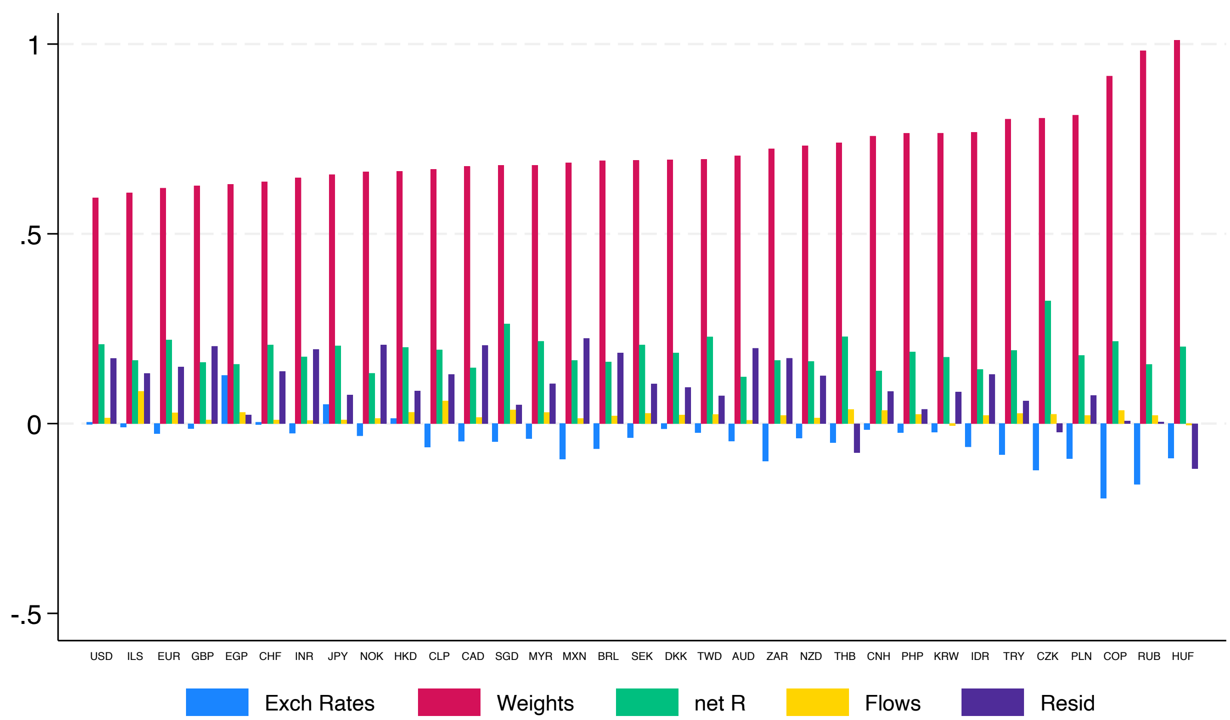
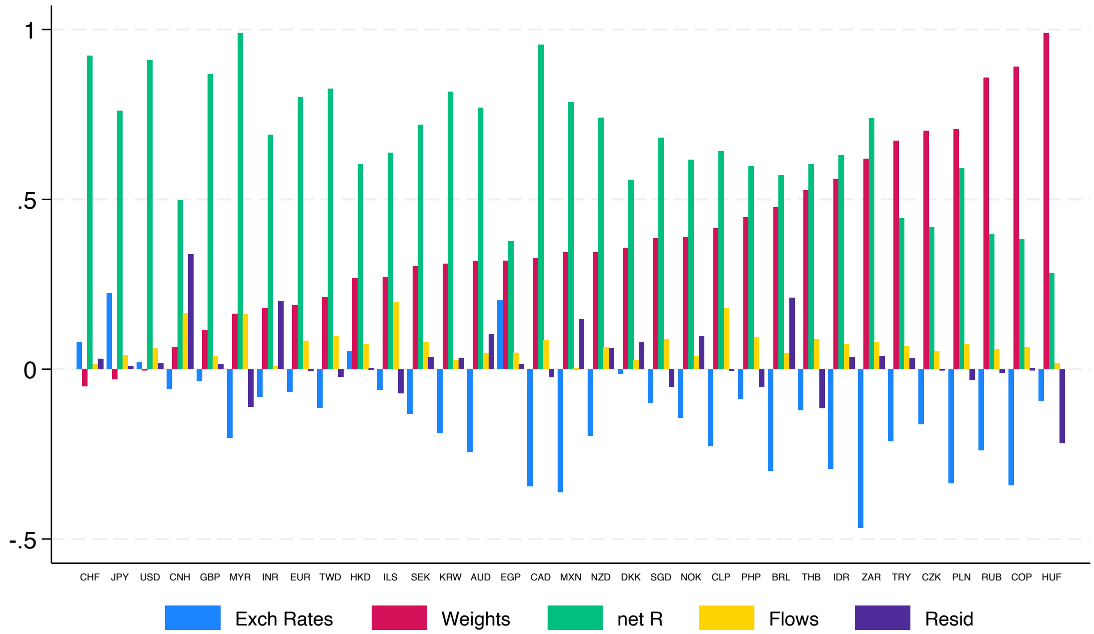


Figure E.28: ISIN-Level Equity Price Growth Rate Decomposition:: Panel Regressions (Marginal Traders)



Notes: This figure presents the coefficients from panel regressions of the equity holdings subcomponents of marginal investors on Δp_t^j by stock market (as denoted by the currency associated with that stock market). "Exch Rates" is the exchange rate "common" subcomponent, $\Delta\tilde{d}_t^{s,j}$; "Weights" is the portfolio weight changes "common" subcomponent, $\Delta\tilde{d}_t^{\omega,j}$; "net R" is the net-of-fee returns "common" subcomponent, $\Delta\tilde{d}_t^{r^{NF},j}$; "Flows" is the final flows "common" subcomponent, $\Delta\tilde{d}_t^{f,j}$; and "Resid" is the residual (unobservable) subcomponent, $\Delta\tilde{d}_t^{Resid,j}$. We allow for ISIN-level fixed effects.

Figure E.29: Aggregate Stock Market Price Growth Rate Decomposition



Notes: This figure presents OLS coefficients from regressions of the equity holdings subcomponents of marginal investors on the aggregate stock market price growth rate, $\Delta p_t^{SM,l}$ (where the stock market is denoted by the currency associated with that market). "Exch Rates" is the exchange rate "common" subcomponent, $\Delta \tilde{D}_t^{s,l}$; "Weights" is the portfolio weight changes "common" subcomponent, $\Delta \tilde{D}_t^{\omega,l}$; "net R" is the net-of-fee returns "common" subcomponent, $\Delta \tilde{D}_t^{r^{NF},l}$; "Flows" is the final flows "common" subcomponent, $\Delta \tilde{D}_t^{f,l}$; and "Resid" is the residual (unobservable) subcomponent, $\Delta \tilde{D}_t^{Resid,l}$.

Table E.6: ISIN-Level Equity Price Growth Rate Decomposition: Panel Regressions (Marginal Traders)

Currency	$\Delta\tilde{d}_t^j$	$\Delta\tilde{d}_t^{\omega,j}$	$\Delta\tilde{d}_t^{s,j}$	$\Delta\tilde{d}_t^{f,j}$	$\Delta\tilde{d}_t^{r^{NF},j}$	$\Delta\tilde{d}_t^{Resid,j}$	Δq_t^j
AUD	0.792***	0.706***	-0.046***	0.009***	0.123***	0.199***	-0.006***
BRL	0.809***	0.693***	-0.067***	0.021***	0.162***	0.187***	-0.004
CAD	0.794***	0.678***	-0.047***	0.016***	0.147***	0.206***	0.001
CHF	0.856***	0.638***	0.001	0.010***	0.208***	0.137***	-0.006**
CLP	0.864***	0.670***	-0.062***	0.060***	0.195***	0.130***	0.000
CNH	0.915***	0.758***	-0.016***	0.035***	0.139***	0.085***	0.000
COP	0.970***	0.916***	-0.197***	0.035***	0.216***	0.007	-0.005
CZK	1.031***	0.805***	-0.123***	0.025	0.323***	-0.023	0.006
DKK	0.891***	0.695***	-0.014***	0.023***	0.187***	0.095***	-0.012**
EGP	0.945***	0.631***	0.128***	0.030***	0.157***	0.023	-0.029***
EUR	0.843***	0.621***	-0.027***	0.029***	0.220***	0.149***	-0.006***
GBP	0.785***	0.627***	-0.013***	0.010***	0.162***	0.204***	-0.007**
HKD	0.910***	0.665***	0.014***	0.030***	0.201***	0.086***	-0.002
HUF	1.118***	1.010***	-0.091**	-0.004	0.203***	-0.119	-0.000
IDR	0.871***	0.768***	-0.062***	0.022***	0.143***	0.129***	0.001
ILS	0.850***	0.608***	-0.010***	0.086***	0.167***	0.132***	-0.016***
INR	0.806***	0.647***	-0.026***	0.008***	0.176***	0.196***	0.002
JPY	0.923***	0.657***	0.050***	0.010***	0.205***	0.076***	-0.002***
KRW	0.913***	0.766***	-0.023***	-0.005***	0.175***	0.083***	-0.003**
MXN	0.773***	0.688***	-0.094***	0.013***	0.166***	0.225***	-0.001
MYR	0.888***	0.681***	-0.040***	0.029***	0.217***	0.105***	-0.004
NOK	0.778***	0.664***	-0.033***	0.014***	0.133***	0.207***	-0.013
NZD	0.873***	0.733***	-0.038***	0.015***	0.164***	0.126***	-0.001
PHP	0.956***	0.766***	-0.024***	0.025***	0.189***	0.038**	-0.004
PLN	0.922***	0.813***	-0.093***	0.022***	0.180***	0.074***	-0.004
RUB	1.000***	0.983***	-0.161***	0.021***	0.156***	0.005	0.004
SEK	0.891***	0.694***	-0.038***	0.027***	0.207***	0.105***	-0.002
SGD	0.931***	0.680***	-0.048***	0.036***	0.262***	0.050***	-0.014*
THB	0.956***	0.740***	-0.051***	0.038***	0.229***	-0.076*	-0.107***
TRY	0.940***	0.803***	-0.082***	0.027***	0.193***	0.060***	0.000
TWD	0.925***	0.696***	-0.024***	0.024***	0.229***	0.074***	-0.000
USD	0.820***	0.595***	0.001***	0.015***	0.209***	0.172***	-0.003***
ZAR	0.813***	0.724***	-0.099***	0.021***	0.166***	0.173***	-0.012*

Note: This table reports the coefficients from panel regressions of the total common component of equity holdings of marginal traders, Δd_t^j, and its subcomponents on Δp_t^j by stock market (as denoted by the currency associated with that stock market). The subcomponents are the portfolio weight changes "common" subcomponent, $\Delta d_t^{\omega,j}$; the exchange rate "common" subcomponent, $\Delta d_t^{s,j}$; the final flows "common" subcomponent, $\Delta d_t^{f,j}$; and the net-of-fee returns "common" subcomponent, $\Delta d_t^{r^{NF},j}$. We also report regressions for the residual (unobservable) subcomponent, $\Delta d_t^{Resid,j}$, and for the change in shares outstanding, Δq_t^j. We allow for ISIN-level fixed effects and cluster the standard errors by ISIN. * – significant at 10%; ** – significant at 5% ; *** – significant at 1%.

Table E.7: Aggregate Stock Market Price Growth Rate Decomposition

Currency	$\Delta\tilde{D}^{l}$	R^2	$\Delta\tilde{D}^{s,l}$	R^2	$\Delta\tilde{D}^{\omega,l}$	R^2	$\Delta\tilde{D}^{r^{NF},l}$	R^2	$\Delta\tilde{D}^{f,l}$	R^2	$\Delta\tilde{D}^{Resid,l}$	R^2
AUD	0.89***	0.90	-0.24***	0.22	0.32***	0.41	0.77***	0.72	0.05***	0.05	0.10***	0.09
BRL	0.80***	0.83	-0.30***	0.40	0.48***	0.54	0.57***	0.70	0.05***	0.05	0.21***	0.27
CAD	1.02***	0.87	-0.34***	0.33	0.33***	0.26	0.96***	0.73	0.09***	0.13	-0.02	-0.00
CHF	0.97***	0.93	0.08**	0.04	-0.05	0.01	0.92***	0.79	0.01	-0.00	0.03	0.01
CLP	1.01***	0.69	-0.23***	0.15	0.41***	0.20	0.64***	0.42	0.18***	0.22	-0.00	-0.01
CNH	0.67***	0.40	-0.06***	0.12	0.06	-0.00	0.50***	0.47	0.16***	0.23	0.34***	0.14
COP	1.00***	0.76	-0.34***	0.32	0.89***	0.67	0.38***	0.36	0.06***	0.05	-0.00	-0.01
CZK	1.01***	0.70	-0.16***	0.12	0.70***	0.38	0.42***	0.33	0.05***	0.04	-0.00	-0.01
DKK	0.93***	0.83	-0.01	-0.00	0.36***	0.34	0.56***	0.65	0.03	0.03	0.08*	0.03
EGP	0.95***	0.72	0.20	0.09	0.32**	0.12	0.38***	0.41	0.05***	0.06	0.02	-0.01
EUR	1.01***	0.94	-0.07***	0.07	0.19***	0.37	0.80***	0.93	0.08***	0.13	-0.00	-0.01
GBP	0.99***	0.94	-0.03*	0.02	0.11***	0.13	0.87***	0.89	0.04***	0.06	0.01	-0.00
HKD	1.00***	0.95	0.05***	0.40	0.27***	0.33	0.60***	0.75	0.07***	0.25	0.00	-0.01
HUF	1.20***	0.59	-0.09	0.02	0.99***	0.42	0.28***	0.14	0.02	-0.00	-0.22**	0.04
IDR	0.97***	0.85	-0.29***	0.44	0.56***	0.43	0.63***	0.56	0.07***	0.12	0.04	0.00
ILS	1.04***	0.71	-0.06**	0.05	0.27***	0.17	0.64***	0.57	0.20***	0.19	-0.07	0.00
INR	0.80***	0.91	-0.08***	0.30	0.18***	0.29	0.69***	0.89	0.01	-0.00	0.20***	0.37
JPY	1.00***	0.88	0.22***	0.41	-0.03	0.00	0.76***	0.81	0.04	0.01	0.01	-0.01
KRW	0.97***	0.89	-0.19***	0.19	0.31***	0.37	0.82***	0.78	0.03	0.00	0.03	0.00
MXN	0.77***	0.68	-0.36***	0.38	0.34***	0.28	0.79***	0.69	0.00	-0.01	0.15***	0.06
MYR	1.11***	0.73	-0.20***	0.13	0.16*	0.02	0.99***	0.50	0.16***	0.13	-0.11**	0.02
NOK	0.90***	0.86	-0.14***	0.35	0.39***	0.45	0.62***	0.78	0.04**	0.03	0.10***	0.06
NZD	0.95***	0.64	-0.20***	0.07	0.34***	0.14	0.74***	0.48	0.07***	0.04	0.06	0.00
PHP	1.05***	0.83	-0.09***	0.11	0.45***	0.31	0.60***	0.45	0.09***	0.12	-0.05	0.01
PLN	1.04***	0.77	-0.34***	0.37	0.71***	0.49	0.59***	0.57	0.07***	0.11	-0.03	-0.00
RUB	1.08***	0.68	-0.24**	0.14	0.86***	0.43	0.40***	0.42	0.06**	0.06	-0.01	-0.01
SEK	0.97***	0.89	-0.13***	0.16	0.30***	0.38	0.72***	0.84	0.08***	0.13	0.04	0.00
SGD	1.06***	0.92	-0.10***	0.17	0.39***	0.40	0.68***	0.73	0.09***	0.20	-0.05*	0.02
THB	1.10***	0.65	-0.12***	0.21	0.53***	0.23	0.60***	0.52	0.09***	0.07	-0.11*	0.01
TRY	0.97***	0.88	-0.21***	0.11	0.67***	0.54	0.44***	0.46	0.07***	0.13	0.03	0.00
TWD	1.02***	0.86	-0.11***	0.20	0.21***	0.12	0.83***	0.67	0.10***	0.12	-0.02	-0.00
USD	0.99***	0.98	0.02***	0.24	-0.00	-0.01	0.91***	0.98	0.06***	0.22	0.02	0.00
ZAR	0.97***	0.80	-0.47***	0.28	0.62***	0.43	0.74***	0.50	0.08***	0.05	0.04	0.00

Note: This table reports OLS coefficients from regressions of the total "common" component of equity holdings of marginal traders, ΔD^{l}, and its subcomponents on the aggregate stock market price growth rate (where the stock market is denoted by the currency associated with that market). The subcomponents are the exchange rate "common" subcomponent, $\Delta D^{s,l}$; the portfolio weight changes "common" subcomponent, $\Delta D^{\omega,l}$; the net-of-fee returns "common" subcomponent, $\Delta D^{r^{NF},l}$; and the final flows "common" subcomponent, $\Delta D^{f,l}$. We also report results for the residual (unobservable) subcomponent, $\Delta D^{Resid,l}$. The table also presents the corresponding R^2 values next to each component. Robust standard errors. * significant at 10%; ** at 5%; *** at 1%.

F Additional Figures Using Monthly Sample

Figure F.30: Total AUM USD Trillions; Monthly

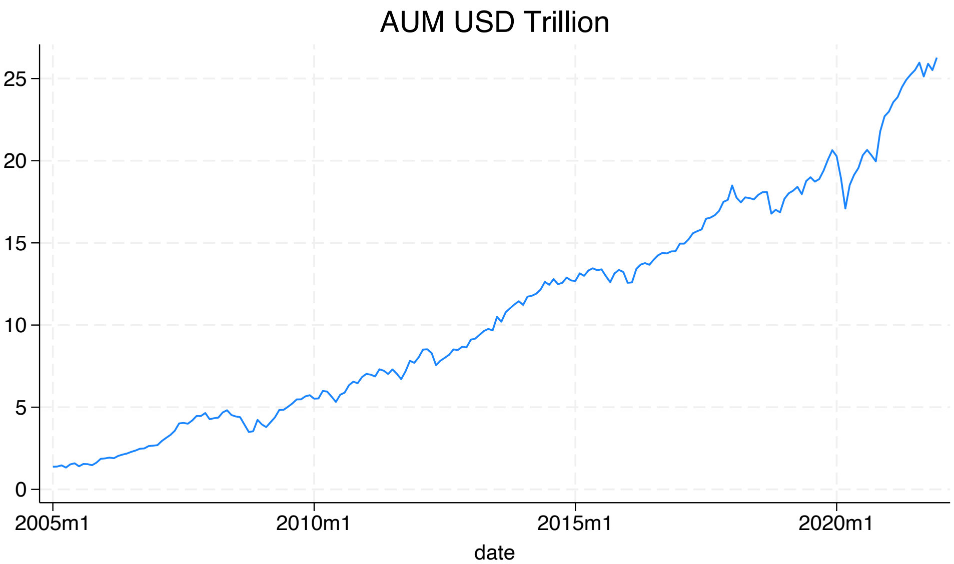


Figure F.31: Sample Aggregate vs Market Index Stock Return Correlations

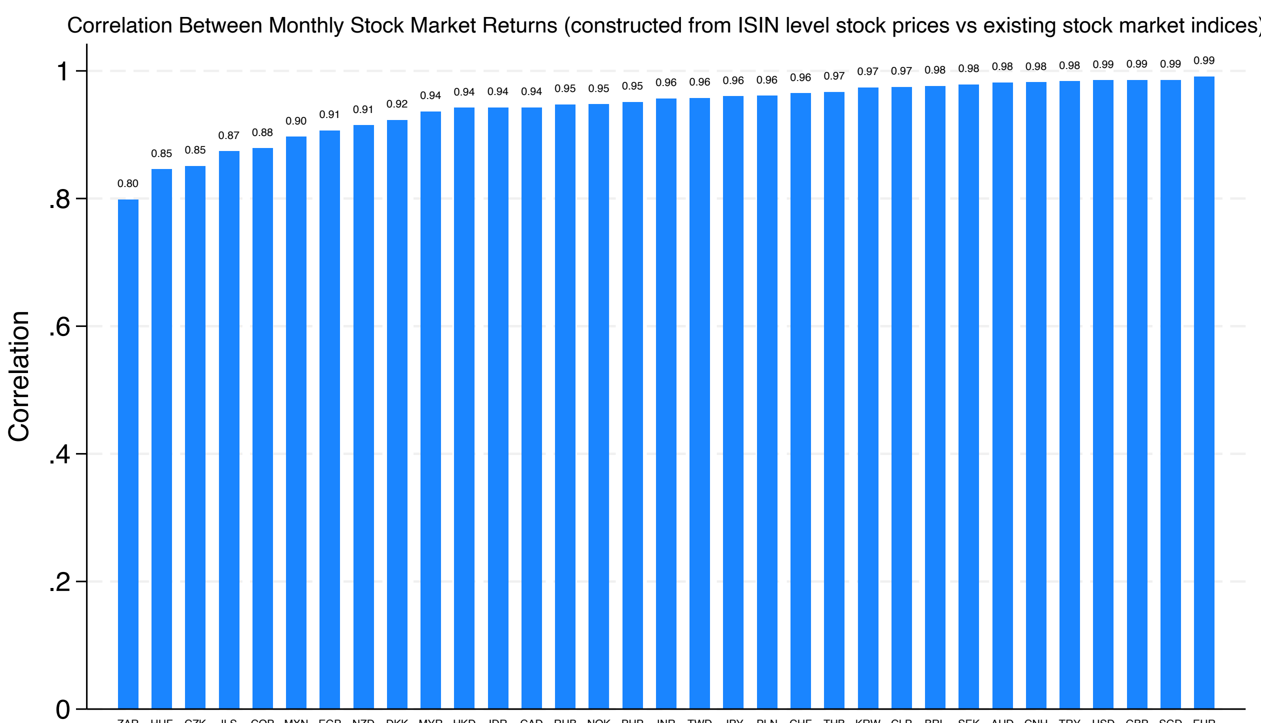


Figure F.32: Number of Funds Within Each Type (for Net-of-Fee Returns and Flows Components)

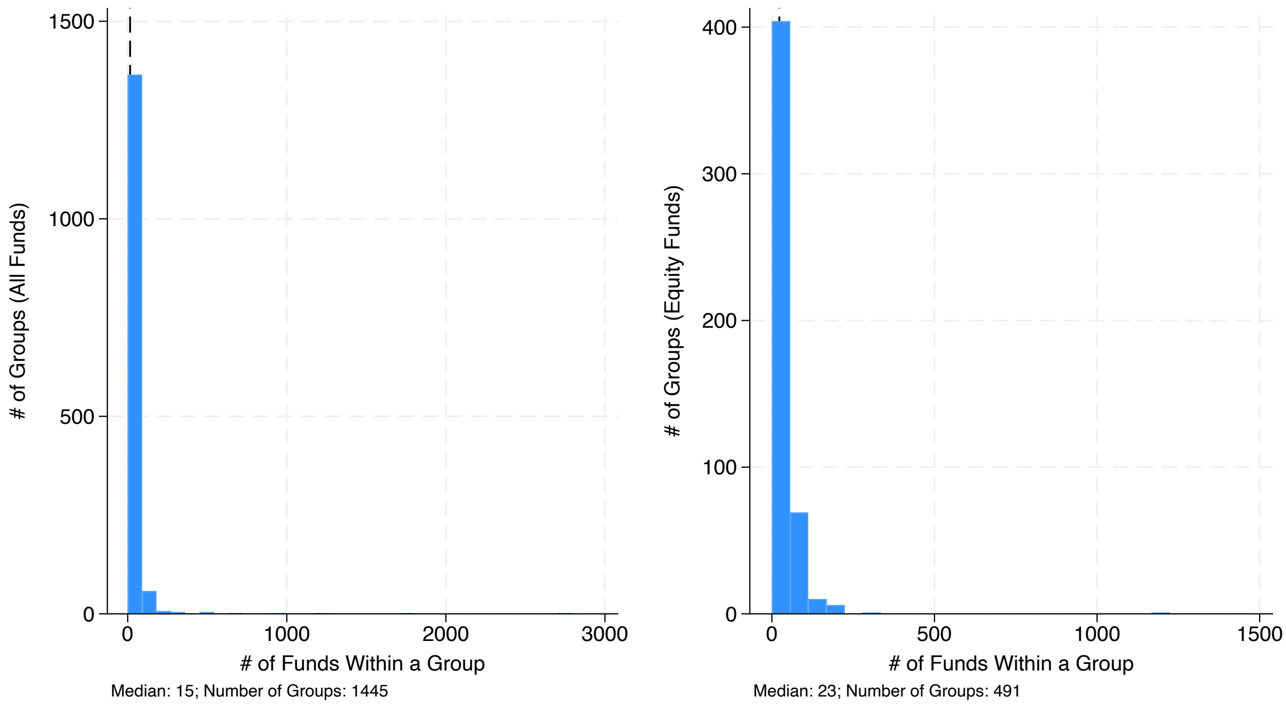
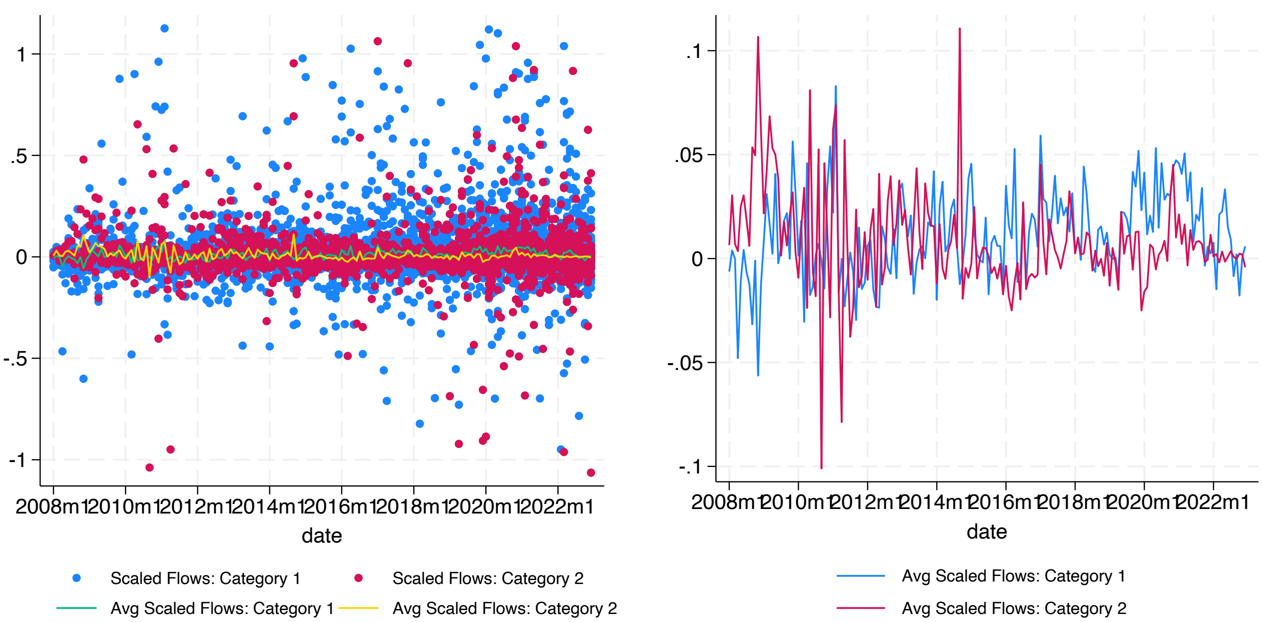
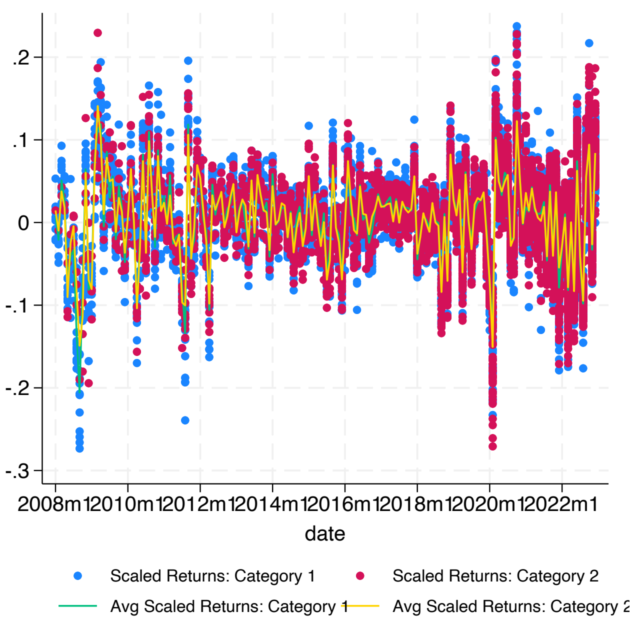


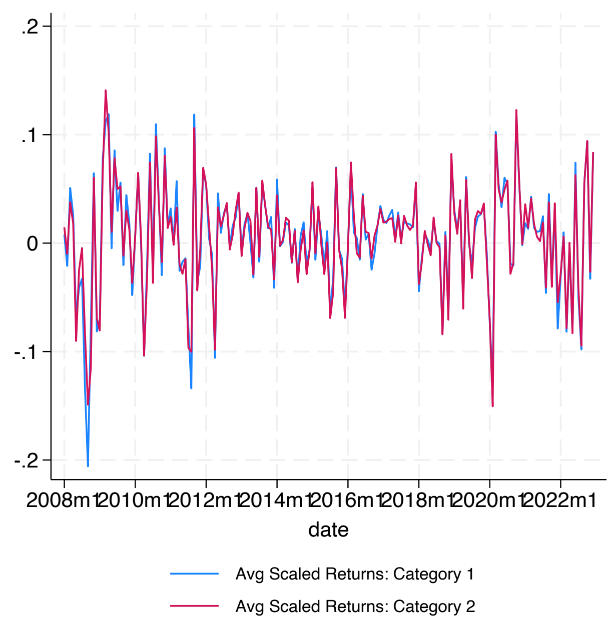
Figure F.33: Examples of Fund-level and Average Scaled Flows For Select Categories



Equity Funds; USD ROS currency;
Category 1: Active: more active; Freq Rebalance: re-balancing frequently; size of fund: <=1bil and >100mil; GlobalCategory: Global Equity Large Cap
Category 2: Active: more active; Freq Rebalance: re-balancing less frequently; size of fund: <=100mil; GlobalCategory: Global Equity Large Cap

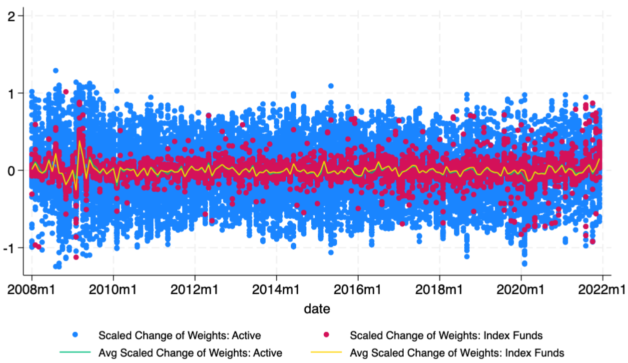
Figure F.34: Examples of Fund-level and Average Scaled Net-of-Fee Returns For Select Categories



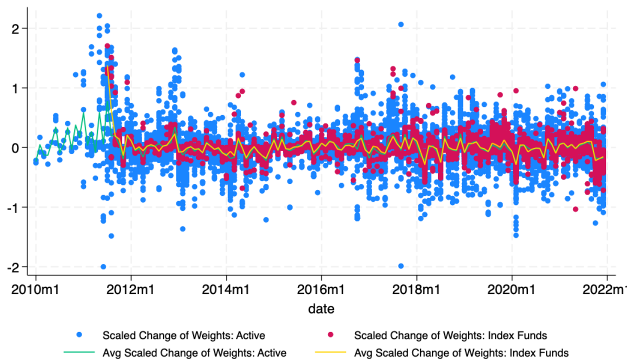


Equity Funds; USD ROS currency;
Category 1: Active: more active; Freq Rebalance: re-balancing frequently; size of fund: <=1bil and >100mil; GlobalCategory: Global Equity Large Cap
Category 2: Active: more active; Freq Rebalance: re-balancing less frequently; size of fund: <=100mil; GlobalCategory: Global Equity Large Cap

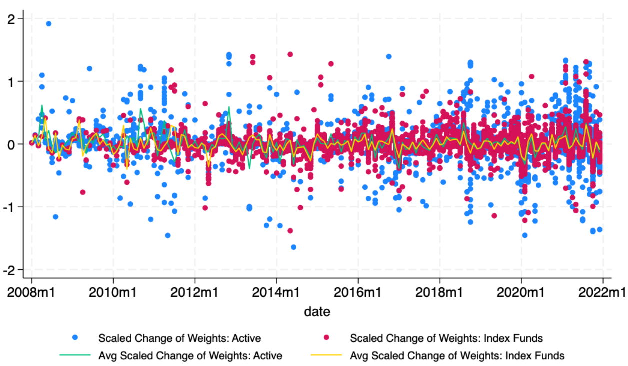
Figure F.35: Portfolio Weight Changes for Select Stocks



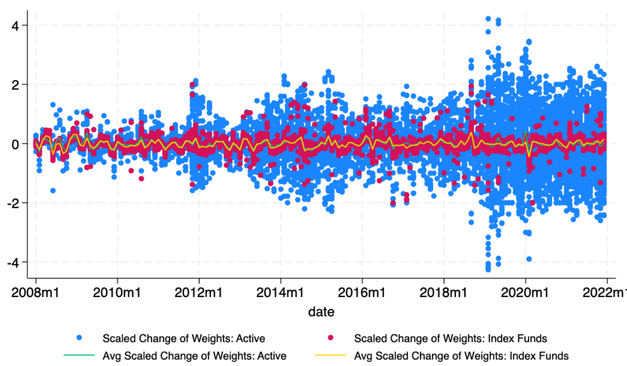
(a) HSBC



(b) Sberbank Rossii



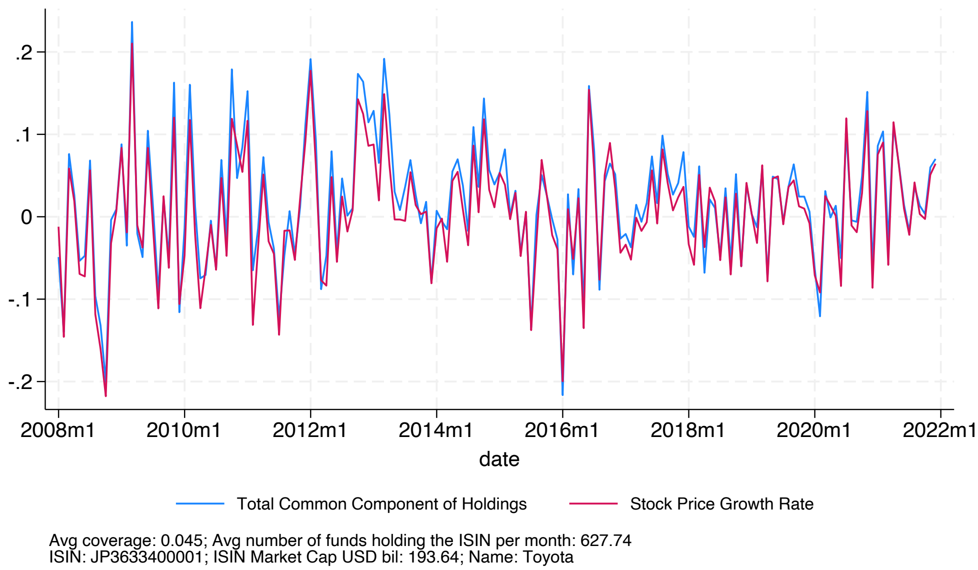
(c) Rosneft



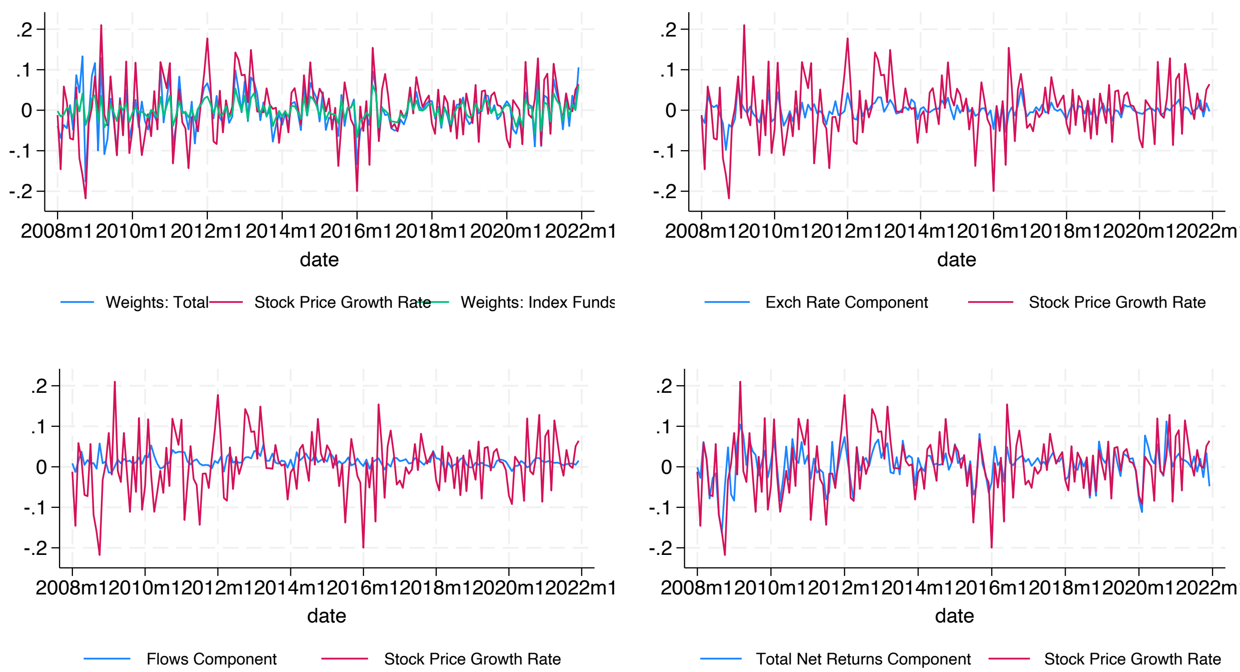
(d) Petrobras

(e) Tesla

Figure F.36: Common Equity Holdings Components: Toyota

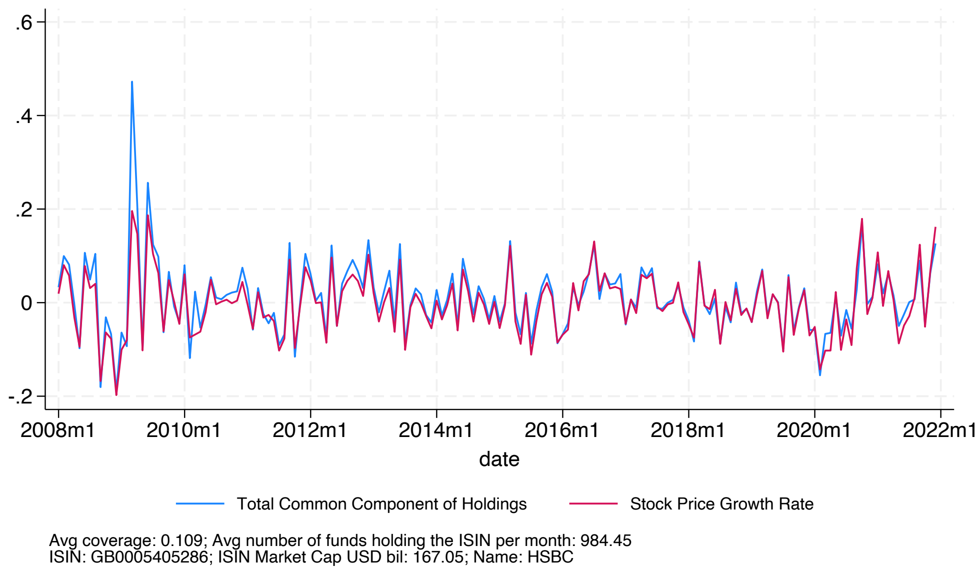


(a) Total

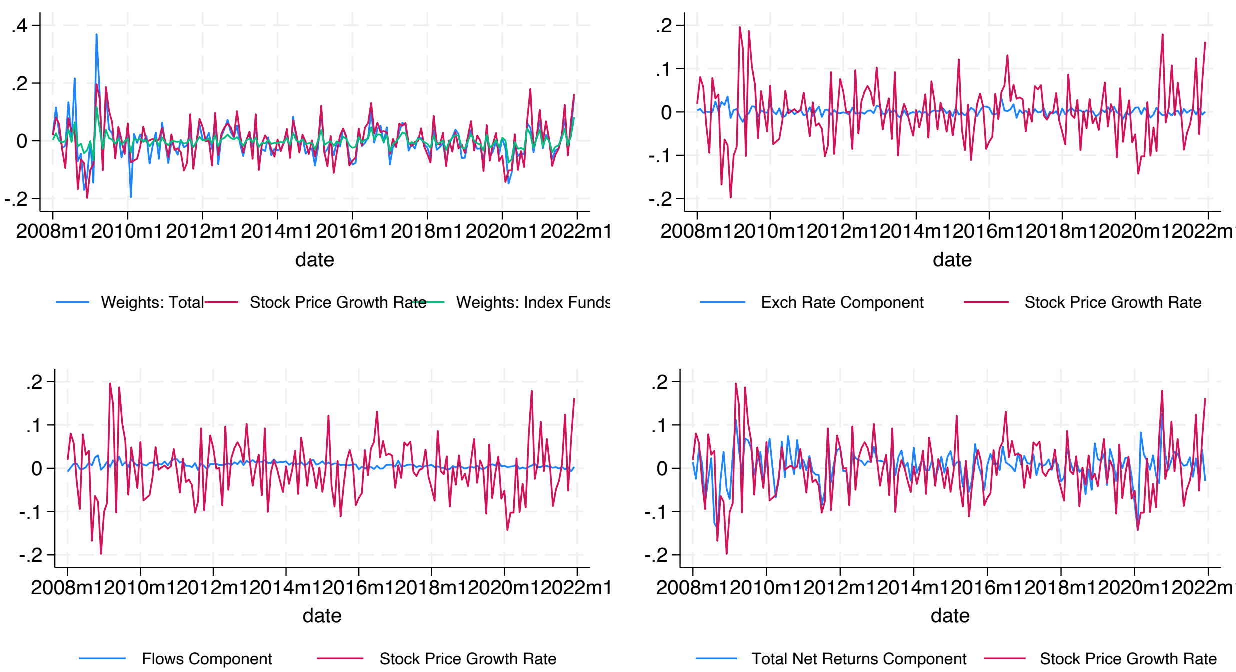


(b) subcomponents

Figure F.37: Common Equity Holdings Components: HSBC

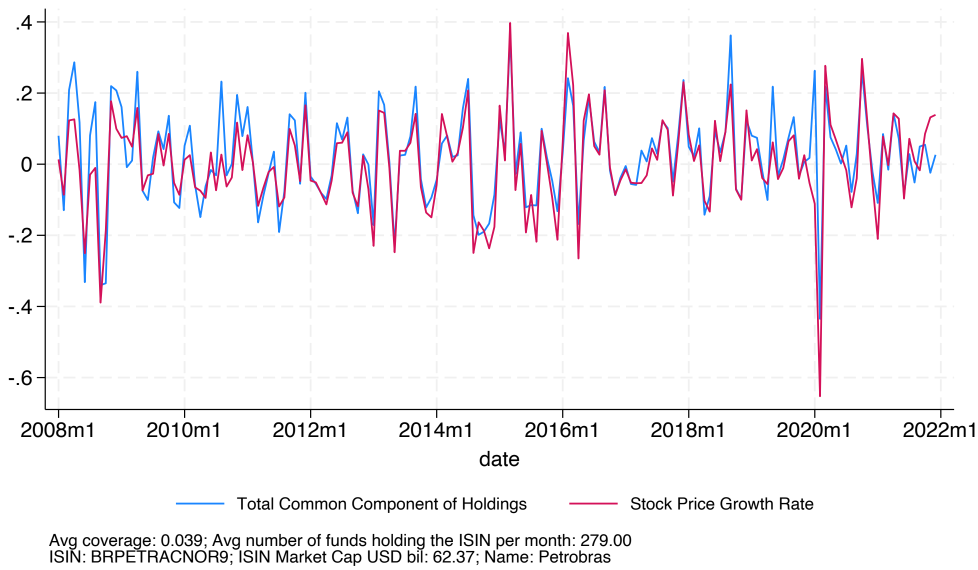


(a) Total

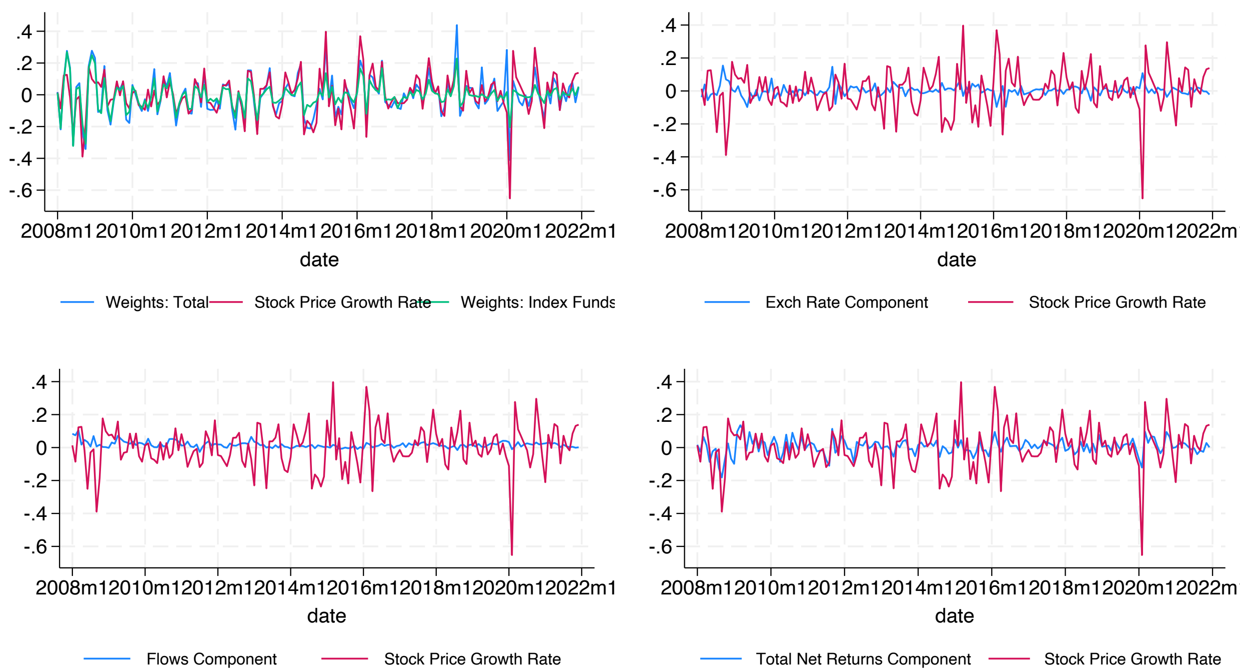


(b) subcomponents

Figure F.38: Common Equity Holdings Components: Petrobras

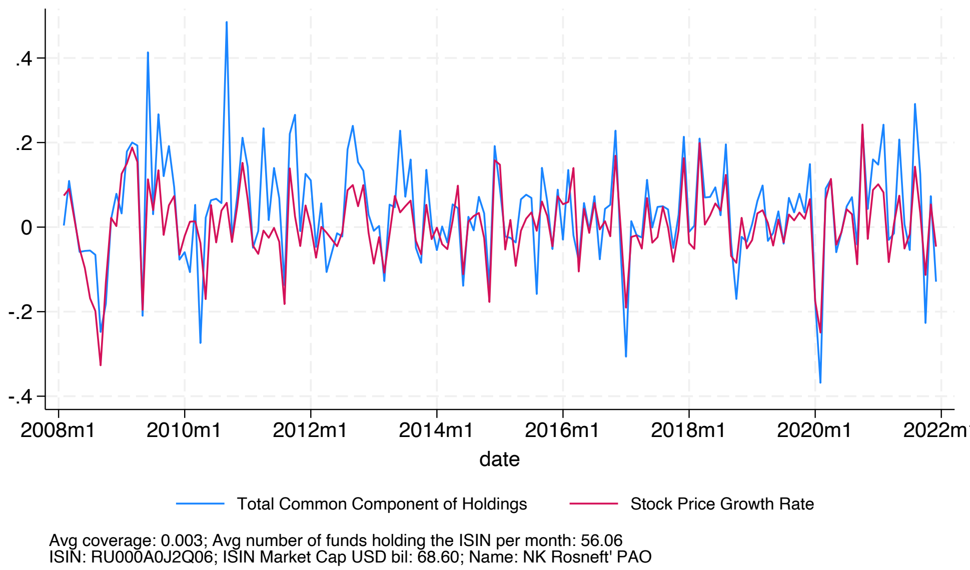


(a) Total

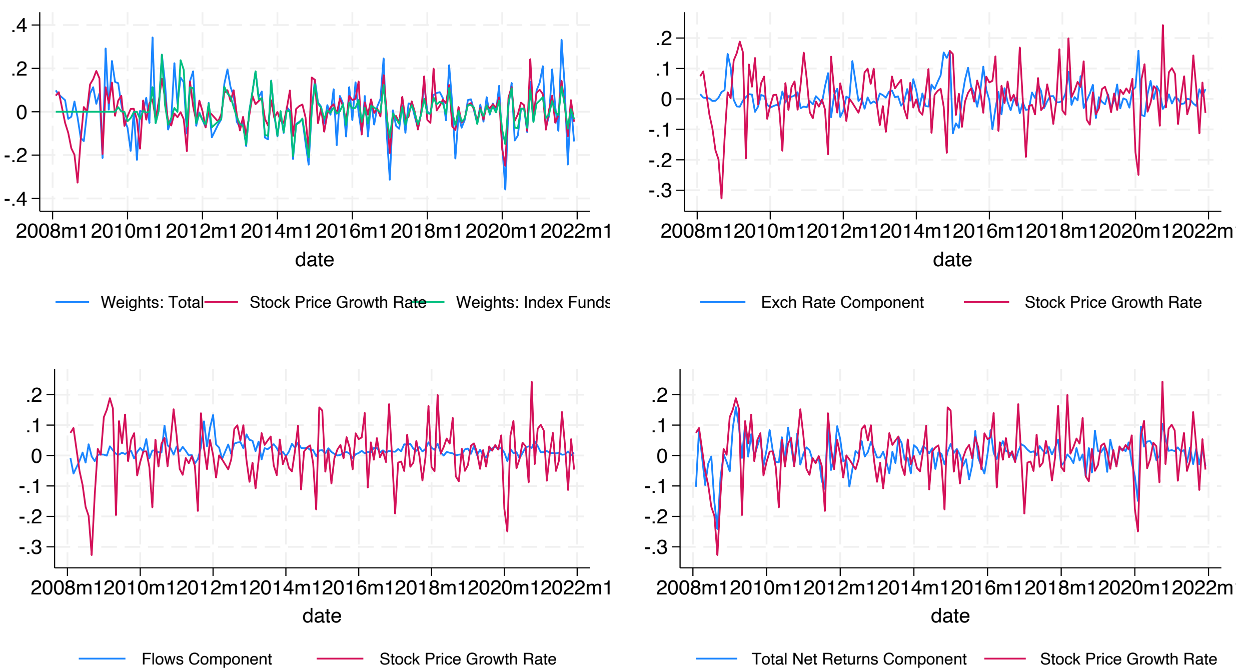


(b) subcomponents

Figure F.39: Common Equity Holdings Components: NK Rosneft' PAO

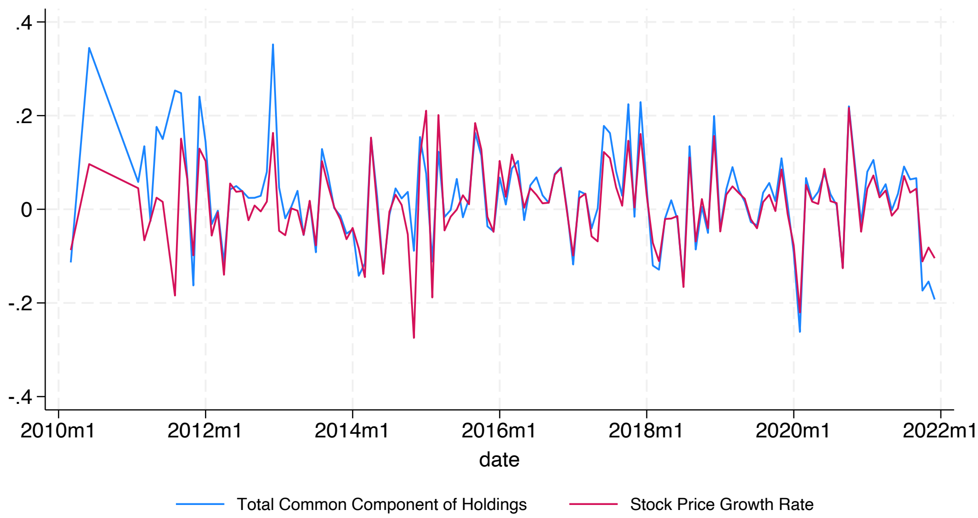


(a) Total



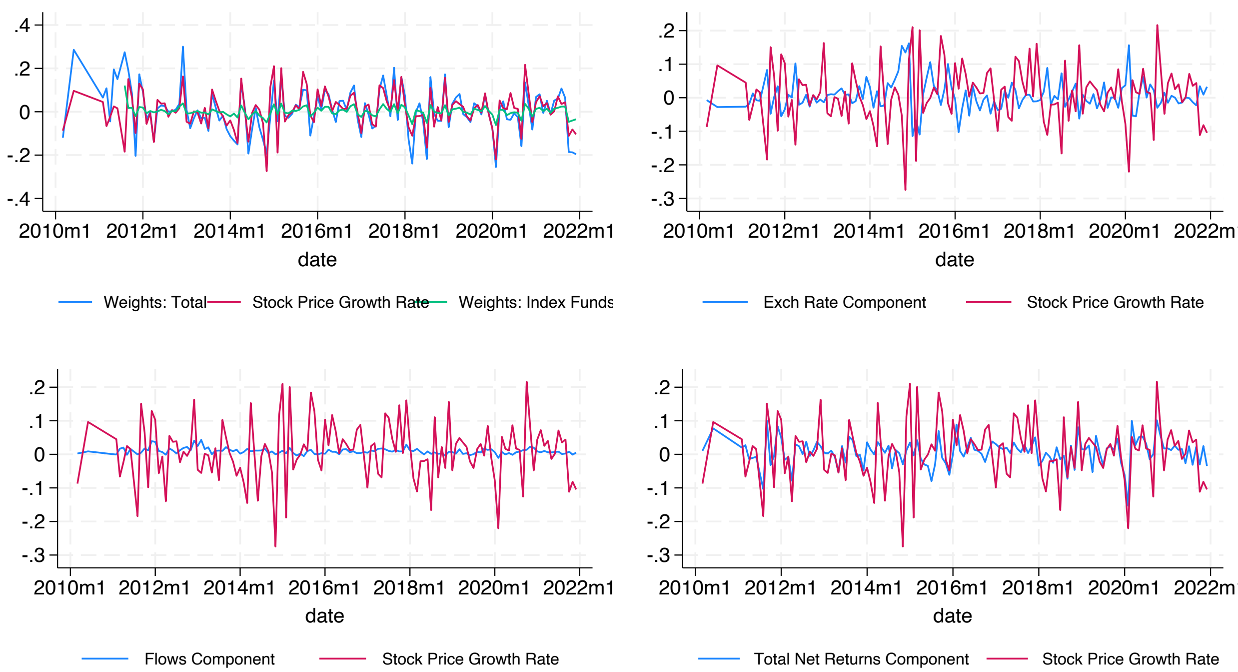
(b) subcomponents

Figure F.40: Common Equity Holdings Components: Sberbank Rossii



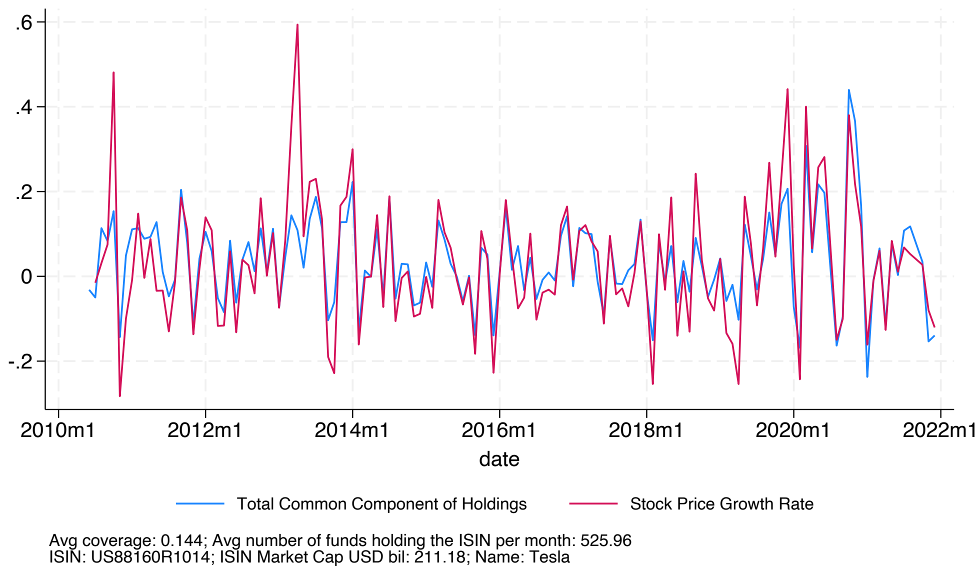
Avg coverage: 0.034; Avg number of funds holding the ISIN per month: 183.36
ISIN: RU0009029540; ISIN Market Cap USD bil: 59.01; Name: Sberbank Rossii

(a) Total

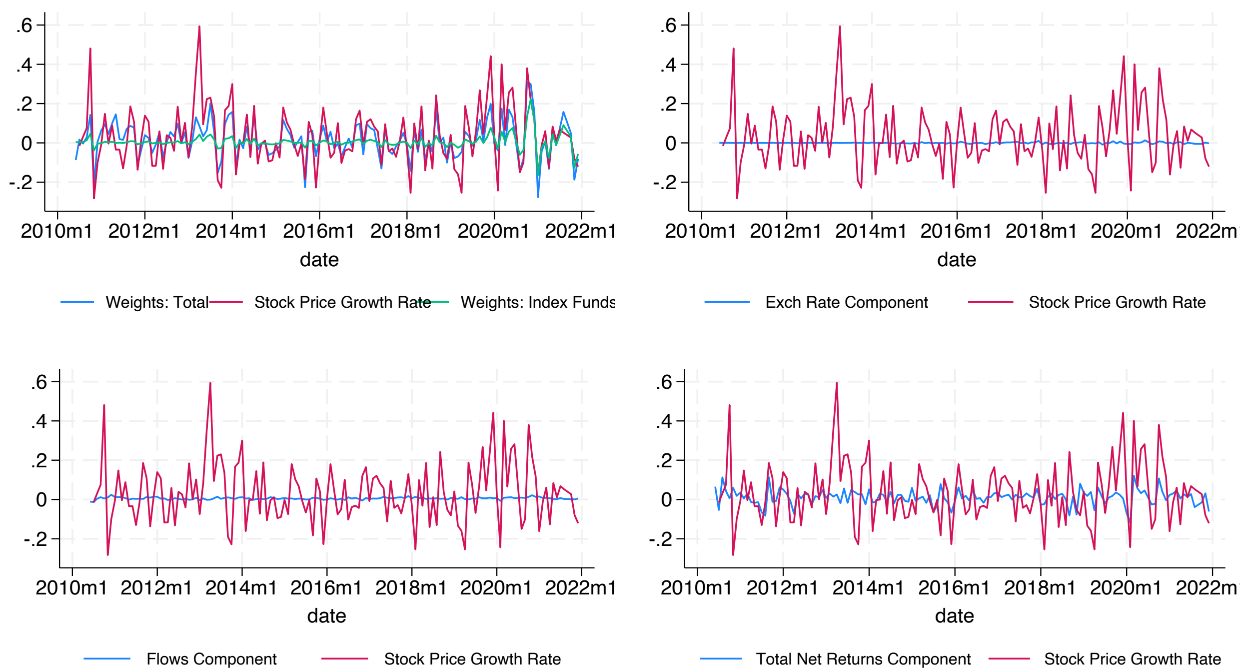


(b) subcomponents

Figure F.41: Common Equity Holdings Components: Tesla

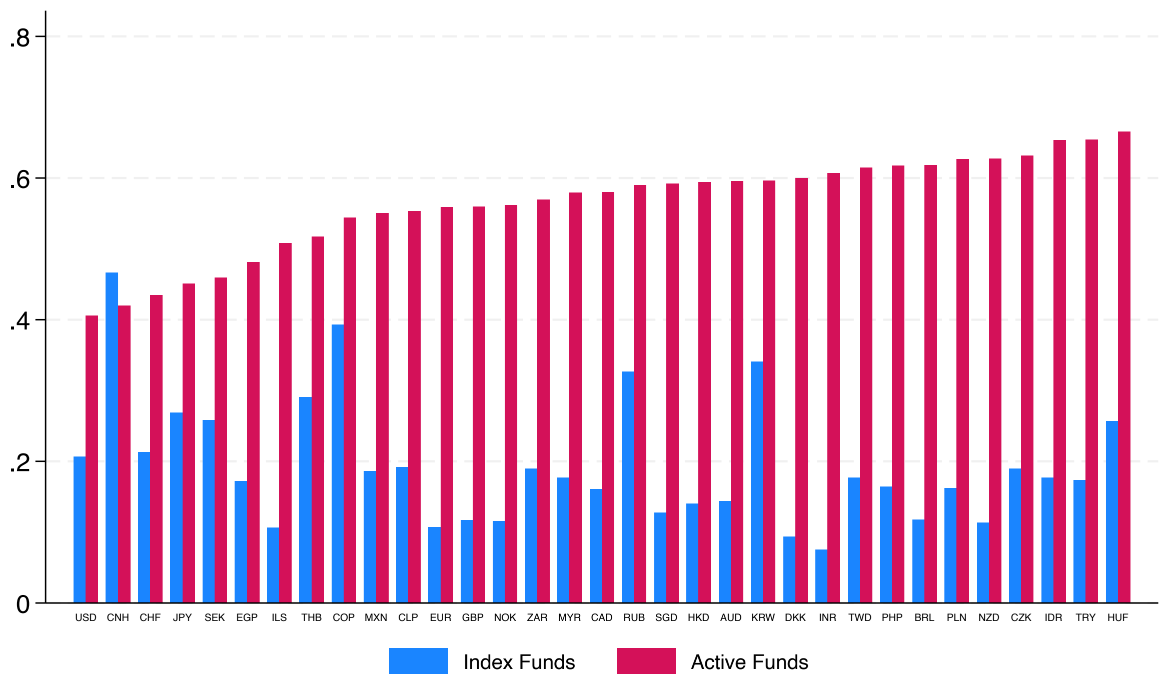


(a) Total



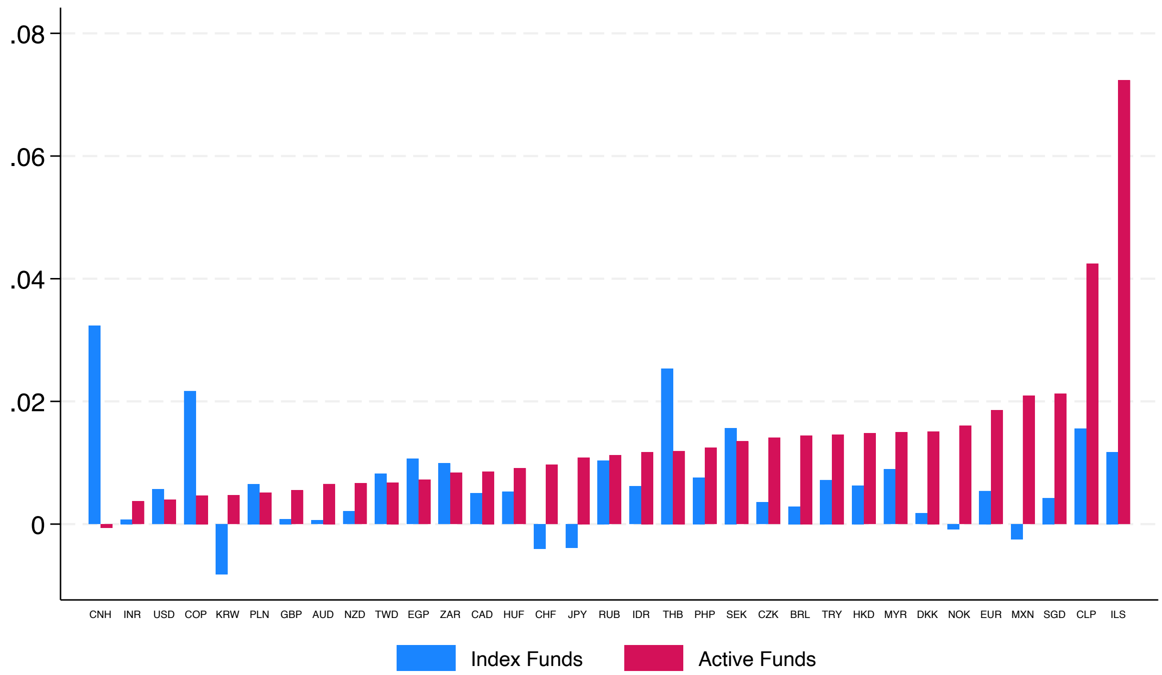
(b) subcomponents

Figure F.42: ISIN-Level Equity Price Growth Rate Decomposition: Index Funds vs Active Funds Portfolio Weight Changes: Panel Regressions



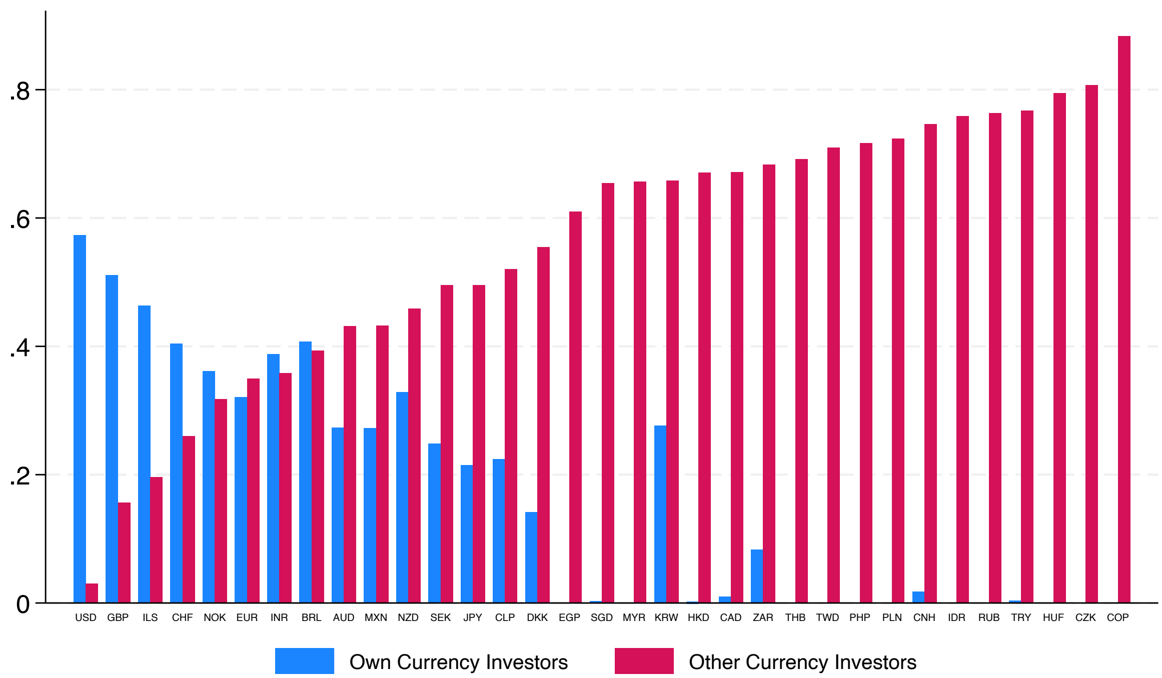
This figure presents coefficients from panel regressions of the portfolio weight changes "common" subcomponents, broken down by index and active funds, on Δp_t^j by stock market (as denoted by the currency associated with that market).

Figure F.43: ISIN-Level Equity Price Growth Rate Decomposition: Index Funds vs Active Funds Flows: Panel Regressions



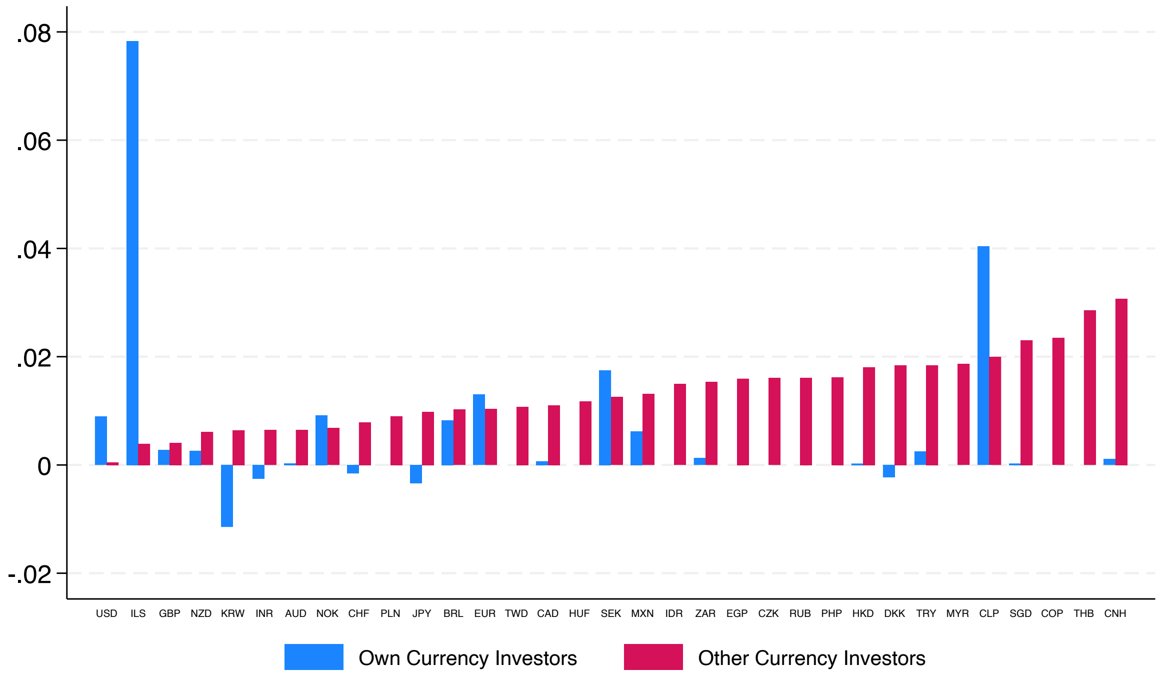
This figure presents coefficients from panel regressions of the final flows "common" subcomponents, broken down by index and active funds, on Δp_t^j by stock market (as denoted by the currency associated with that market).

Figure F.44: ISIN-Level Equity Price Growth Rate Decomposition: Local vs Other Currency Investors Portfolio Weight Changes: Panel Regressions



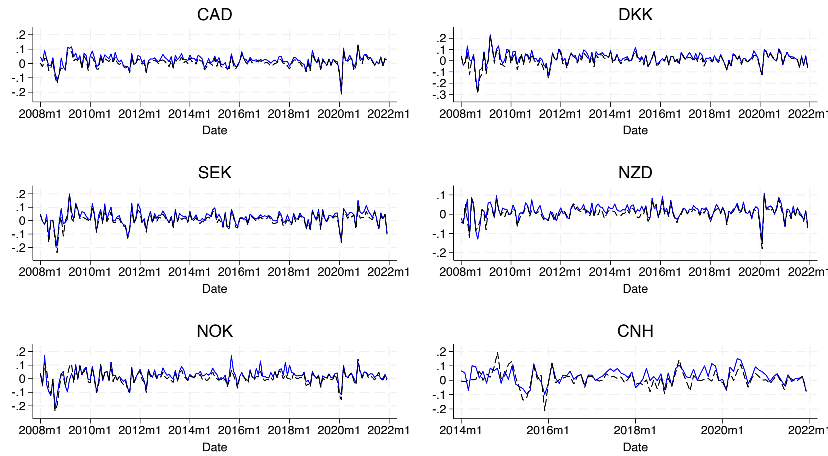
This figure presents coefficients from panel regressions of the portfolio weight changes "common" subcomponents, broken down by local-currency and foreign-currency investors, on Δp_t^j by stock market (as denoted by the currency associated with that market).

Figure F.45: ISIN Level Equity Price Growth Rate Decomposition: Local vs Other Currency Investors Flows: Panel Regressions



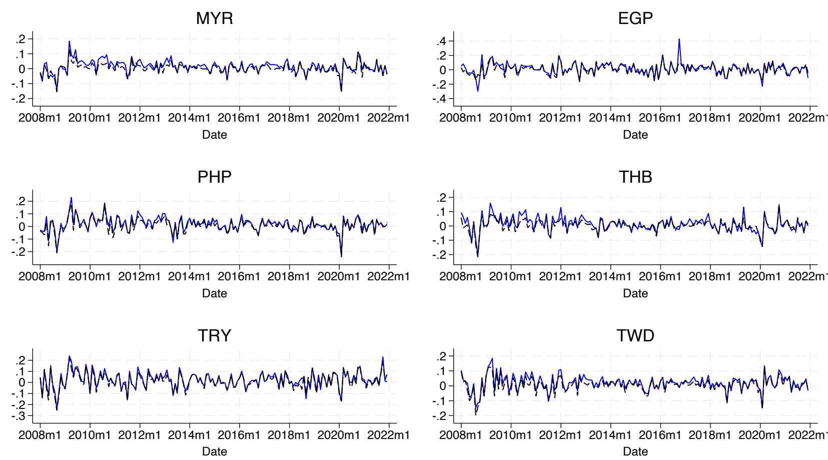
This figure presents coefficients from panel regressions of the final flows "common" subcomponents, broken down by local-currency and foreign-currency investors, on Δp_t^j by stock market (as denoted by the currency associated with that market).

Figure F.46: Stock Market Price Growth Rate vs Total Common Component of Equilibrium Holdings



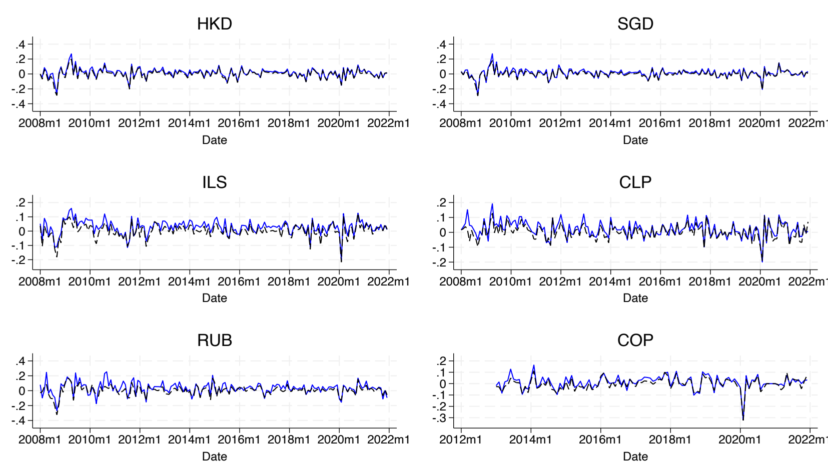
The black dashed line represents the stock price growth rate and the solid blue line is the change in total common equity holdings.

(a) Select Advanced Economies



The black dashed line represents the stock price growth rate and the solid blue line is the change in total common equity holdings.

(b) Select Emerging Markets



The black dashed line represents the stock price growth rate and the solid blue line is the change in total common equity holdings.

(c) Select Emerging Markets (cont.)

G Quarterly Sample Results

Figure G.47: Total AUM USD Trillions; Quarterly

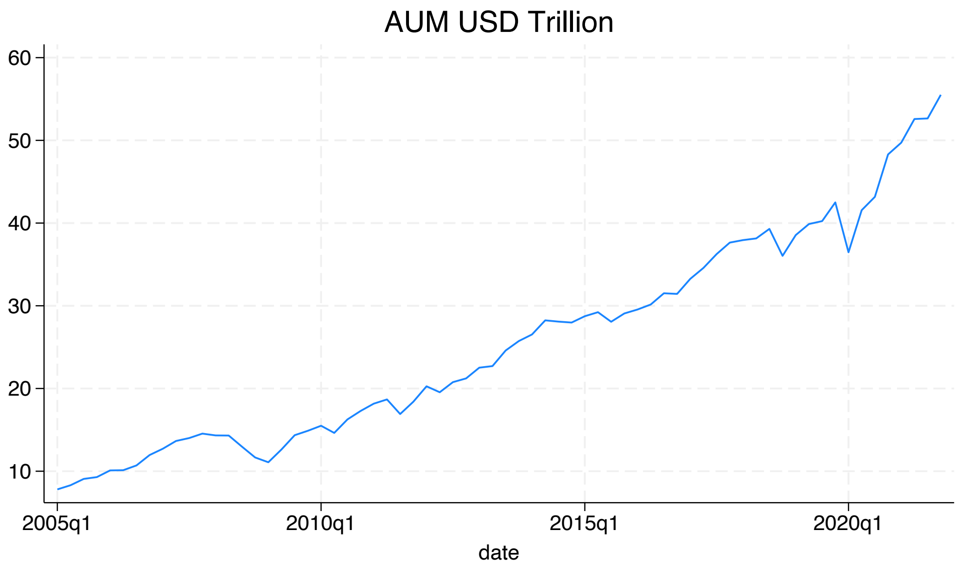


Figure G.48: AUM by Investment Type and ROS Currency (Quarterly Sample, USD Trillions)

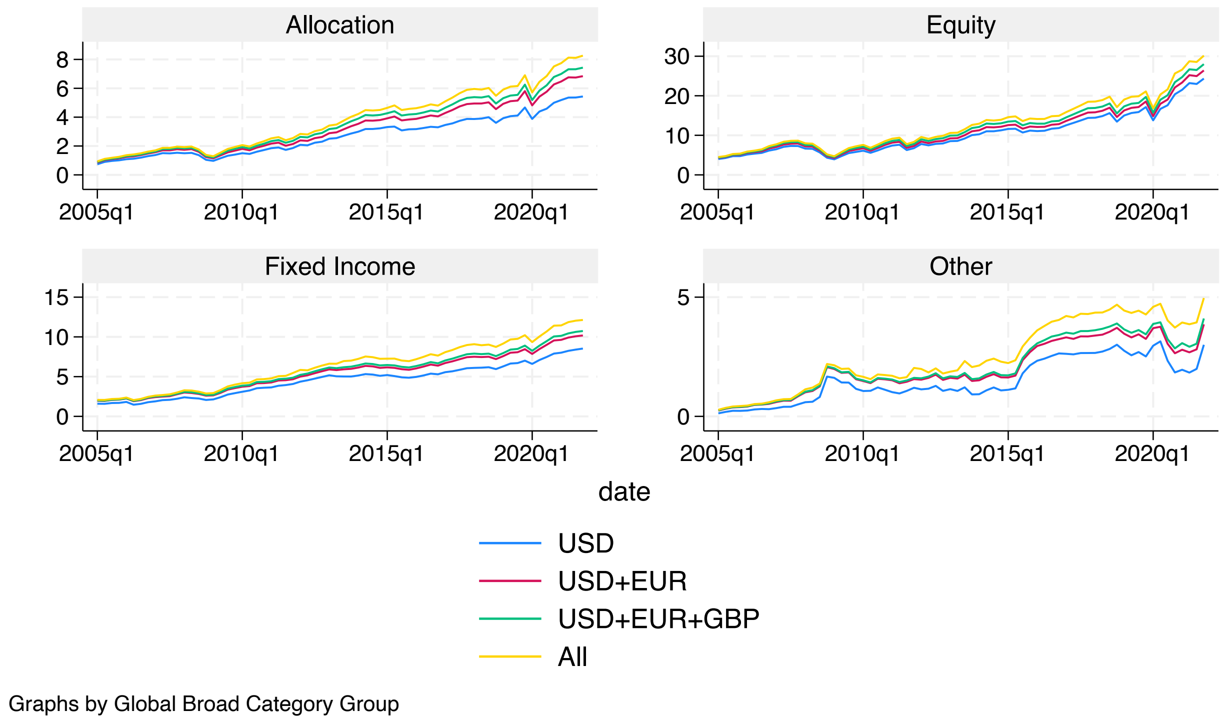


Figure G.49: AUM by Investment Type and Index Funds/Active Funds (Quarterly Sample, USD Trillions)

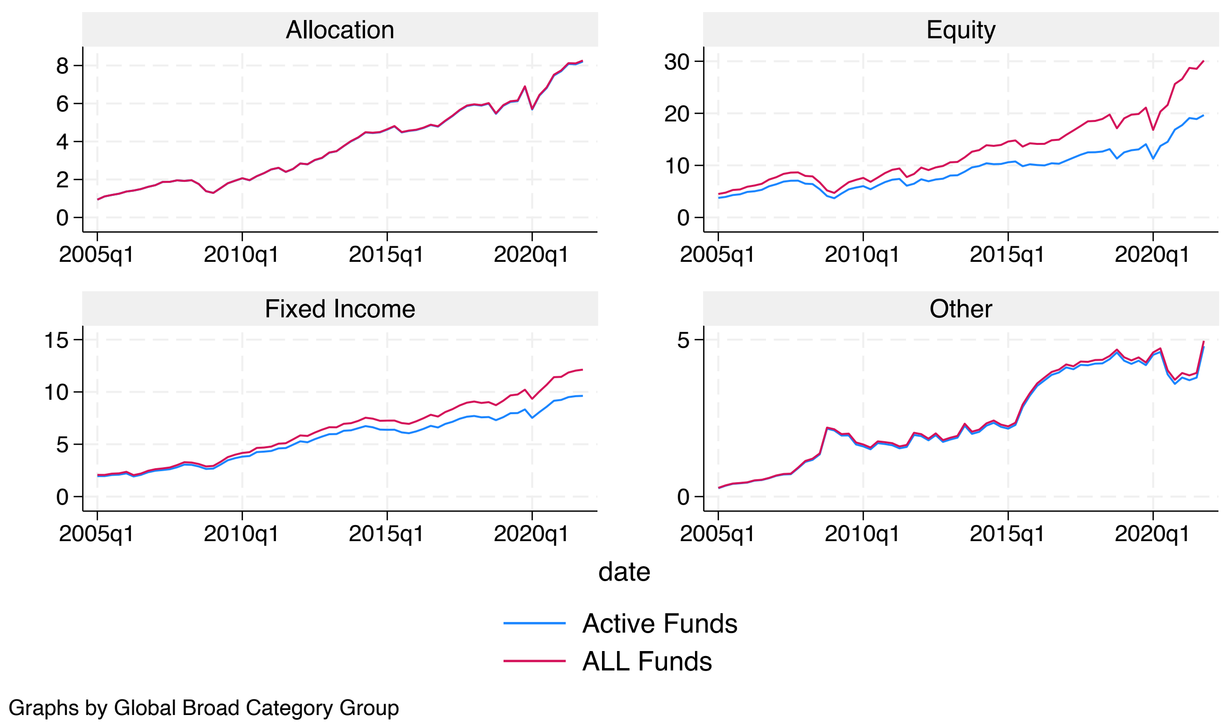
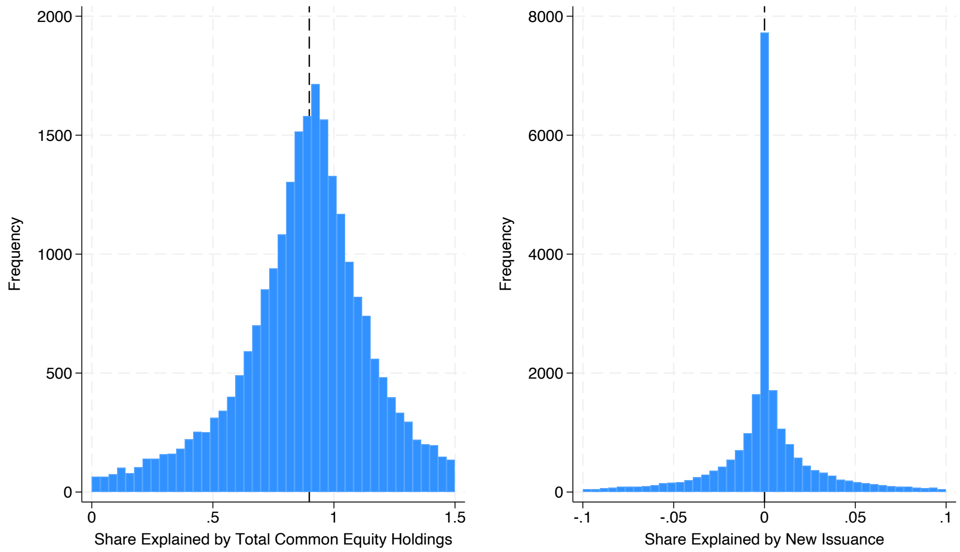


Table G.8: Coverage and Market Capitalization (Quarterly Sample)

Currency	*AvgCoverage*	*CoverageStart*	*CoverageEnd*	*AvgMarketCapUSDbil*	*MarketCapStartUSDbil*	*MarketCapEndUSDbil*	*ISINs*
AUD	0.13	0.10	0.17	965.58	824.02	1391.19	665.00
BRL	0.11	0.04	0.20	745.65	768.39	652.62	269.00
CAD	0.11	0.08	0.16	1367.25	1017.48	2098.44	679.00
CHF	0.19	0.09	0.27	1201.98	979.68	1910.70	216.00
CLP	0.03	0.01	0.05	176.79	161.77	118.47	71.00
CNH	0.03	0.00	0.10	3284.02	669.38	8445.96	1150.00
COP	0.02	0.00	0.04	110.89	79.68	73.89	20.00
CZK	0.08	0.06	0.06	28.24	58.20	32.42	6.00
DKK	0.15	0.05	0.24	206.52	150.99	416.52	93.00
EGP	0.05	0.04	0.05	33.74	66.95	28.37	51.00
EUR	0.16	0.09	0.24	5983.49	6566.57	9242.04	1779.00
GBP	0.22	0.09	0.34	2547.03	2556.40	3029.97	1220.00
HKD	0.12	0.08	0.16	907.22	648.64	1051.90	482.00
HUF	0.22	0.14	0.30	9.27	14.23	15.17	11.00
IDR	0.08	0.04	0.09	325.79	135.30	413.33	212.00
ILS	0.04	0.04	0.07	148.12	122.18	267.71	252.00
INR	0.12	0.05	0.18	1434.99	906.18	3157.44	943.00
JPY	0.10	0.06	0.16	4581.66	3620.58	6619.88	2763.00
KRW	0.15	0.14	0.16	1144.16	802.22	1896.85	1416.00
MXN	0.09	0.05	0.13	315.77	287.70	365.28	112.00
MYR	0.05	0.06	0.04	309.53	214.21	321.80	344.00
NOK	0.10	0.07	0.20	227.10	255.97	354.74	182.00
NZD	0.11	0.05	0.17	51.22	19.94	104.19	78.00
PHP	0.07	0.06	0.05	172.41	62.13	234.21	102.00
PLN	0.05	0.03	0.07	125.73	114.19	159.07	118.00
RUB	0.03	0.01	0.04	323.45	353.51	391.72	66.00
SEK	0.20	0.14	0.28	424.34	327.64	865.42	377.00
SGD	0.10	0.09	0.13	320.90	299.06	325.55	212.00
THB	0.05	0.04	0.04	450.00	216.89	622.26	281.00
TRY	0.08	0.07	0.04	187.22	159.91	129.72	176.00
TWD	0.12	0.09	0.18	910.49	665.58	2069.62	982.00
USD	0.31	0.23	0.35	22409.96	14088.58	47634.64	5726.00
ZAR	0.12	0.08	0.14	335.60	292.10	334.20	230.00

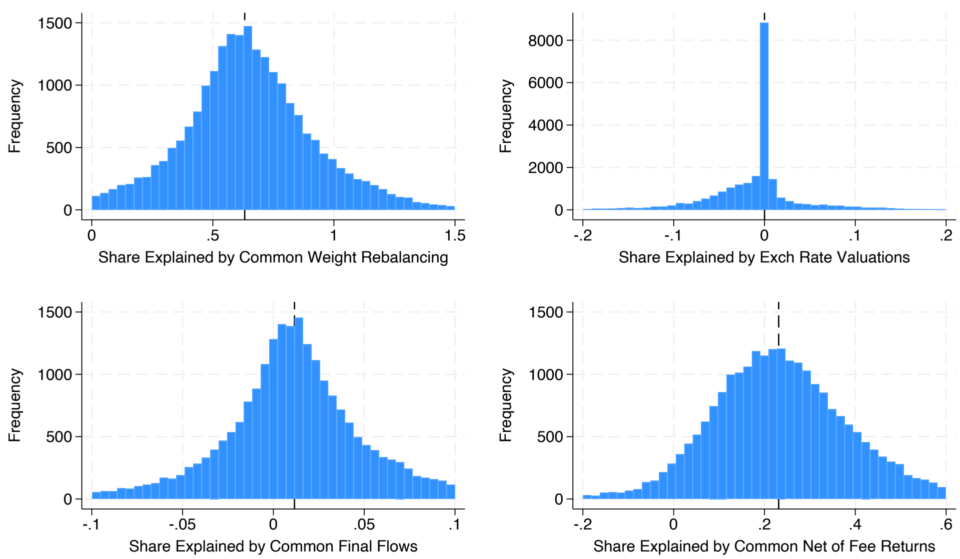
This table presents the sample average, starting date and ending date coverage ratios, weighted by the market capitalization of the ISIN. The coverage ratio for an ISIN is defined as total observed holdings of this ISIN in our data set over the market capitalization of the ISIN, translated in the same currency. It also reports the sample average, starting and ending date market capitalization for all ISINs issued in a given currency and the number of ISINs in our sample. We have kept only firms for which the currency of issuance is the same as the main region of operation.

Figure G.50: ISIN-Level Equity Price Growth Rate Decomposition: Histograms (Quarterly Sample)



We plot only the set of ISINs for which $\frac{Cov\left(\Delta d^j, \Delta p_t^j\right)}{Var\left(\Delta p_t^j\right)}$ is between 0 and 1.5.

Figure G.51: ISIN-Level Equity Price Growth Rate Decomposition: Historgams subcomponents (Quarterly Sample)



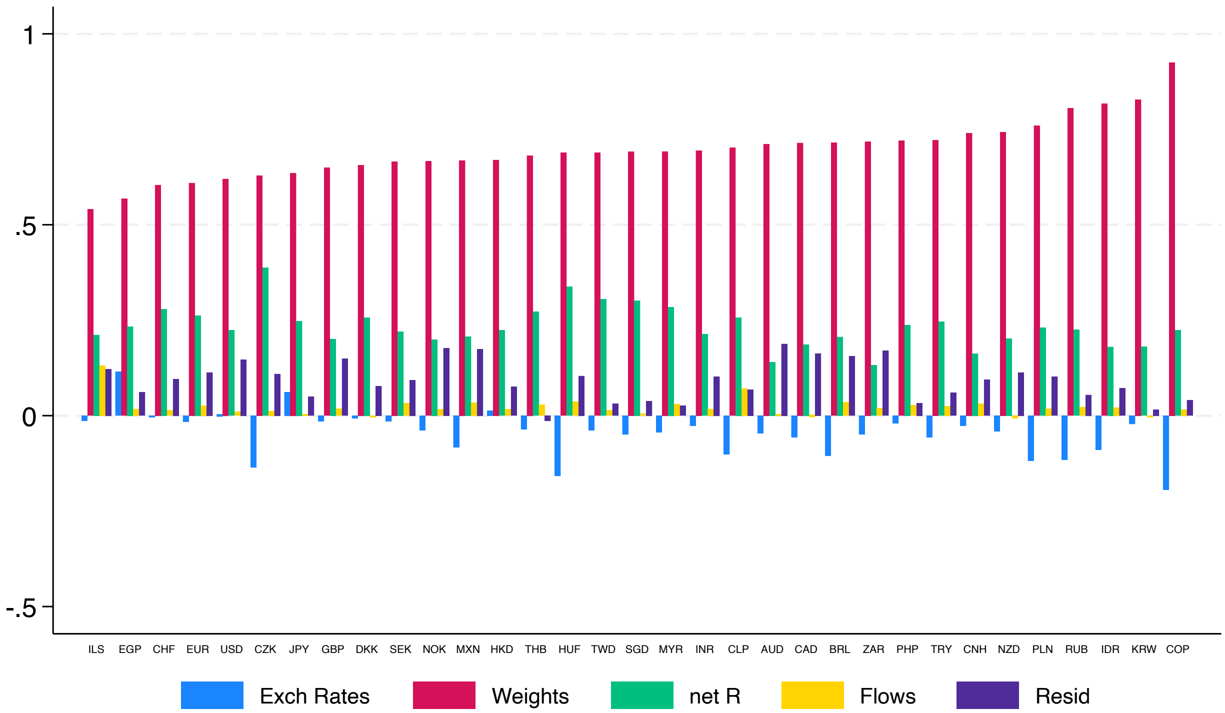
We plot only the set of ISINs for which $\frac{Cov\left(\Delta d^j, \Delta p_t^j\right)}{Var\left(\Delta p_t^j\right)}$ is between 0 and 1.5.

Table G.9: ISIN-Level Equity Price Growth Rate Decomposition: Panel Regressions (Quarterly Sample)

Currency	Δd_t^j	$\Delta d_t^{\omega,j}$	$\Delta d_t^{s,j}$	$\Delta d_t^{f,j}$	$\Delta d_t^{r^{NF},j}$	$\Delta d_t^{Resid,j}$	Δq_t^j
AUD	0.809***	0.712***	-0.047***	0.004**	0.140***	0.188***	-0.003
BRL	0.851***	0.715***	-0.105***	0.035***	0.206***	0.156***	0.007
CAD	0.842***	0.714***	-0.057***	-0.002	0.186***	0.163***	0.005**
CHF	0.893***	0.604***	-0.004**	0.014***	0.279***	0.096***	-0.011**
CLP	0.928***	0.702***	-0.102***	0.071***	0.257***	0.068***	-0.003
CNH	0.908***	0.740***	-0.027***	0.032***	0.163***	0.094***	0.002
COP	0.971***	0.925***	-0.194***	0.016***	0.223***	0.040	0.011
CZK	0.892***	0.629***	-0.136**	0.012	0.387***	0.109	0.002
DKK	0.901***	0.656***	-0.007**	-0.005	0.257***	0.077***	-0.022**
EGP	0.934***	0.568***	0.115***	0.018***	0.233***	0.061**	-0.005
EUR	0.882***	0.609***	-0.016***	0.026***	0.262***	0.113***	-0.005***
GBP	0.854***	0.649***	-0.015***	0.018***	0.201***	0.149***	0.003
HKD	0.924***	0.670***	0.013***	0.017***	0.224***	0.076***	-0.001
HUF	0.904***	0.689***	-0.158***	0.036**	0.337***	0.104	0.008
IDR	0.929***	0.817***	-0.089***	0.022***	0.180***	0.072***	0.001
ILS	0.869***	0.541***	-0.014***	0.131***	0.212***	0.122***	-0.008
INR	0.899***	0.694***	-0.026***	0.018***	0.213***	0.102***	0.001
JPY	0.948***	0.635***	0.062***	0.003***	0.248***	0.050***	-0.002***
KRW	0.982***	0.828***	-0.022***	-0.004***	0.180***	0.016**	-0.002
MXN	0.827***	0.669***	-0.083***	0.034***	0.208***	0.175***	0.002
MYR	0.963***	0.692***	-0.044***	0.031***	0.284***	0.026**	-0.011**
NOK	0.844***	0.666***	-0.038***	0.017***	0.199***	0.177***	0.021
NZD	0.896***	0.743***	-0.042***	-0.007	0.202***	0.113***	0.010
PHP	0.965***	0.720***	-0.020***	0.027***	0.238***	0.033*	-0.002
PLN	0.889***	0.759***	-0.119***	0.019***	0.230***	0.102***	-0.008
RUB	0.936***	0.805***	-0.116***	0.022***	0.225***	0.054*	-0.009**
SEK	0.903***	0.665***	-0.015***	0.032***	0.220***	0.093***	-0.004
SGD	0.948***	0.691***	-0.050***	0.005	0.301***	0.038**	-0.013
THB	0.947***	0.681***	-0.036***	0.029***	0.272***	-0.014	-0.067***
TRY	0.936***	0.722***	-0.057***	0.025***	0.246***	0.060***	-0.004
TWD	0.969***	0.689***	-0.038***	0.014***	0.305***	0.031***	0.000
USD	0.855***	0.620***	0.001***	0.010***	0.223***	0.147***	0.002*
ZAR	0.820***	0.718***	-0.049***	0.019***	0.132***	0.170***	-0.010*

Note: This table reports the coefficients from panel regressions of the total common component of equity holdings, Δd_t^j, and its subcomponents on Δp_t^j by stock market (as denoted by the currency associated with that stock market). The subcomponents are the portfolio weight changes "common" subcomponent, $\Delta d_t^{\omega,j}$; the exchange rate "common" subcomponent, $\Delta d_t^{s,j}$; the final flows "common" subcomponent, $\Delta d_t^{f,j}$; and the net-of-fee returns "common" subcomponent, $\Delta d_t^{r^{NF},j}$. We also report regressions for the residual (unobservable) subcomponent, $\Delta d_t^{Resid,j}$, and for the change in shares outstanding, Δq_t^j. We allow for ISIN-level fixed effects and cluster the standard errors by ISIN. * – significant at 10%; ** – significant at 5% ; *** – significant at 1%.

Figure G.52: ISIN-Level Equity Price Growth Rate Decomposition: Panel Regressions (Quarterly Sample)



Notes: This figure presents the coefficients from panel regressions of the equity holdings subcomponents on Δp_t^j by stock market (as denoted by the currency associated with that stock market). "Exch Rates" is the exchange rate "common" subcomponent, $\Delta d_t^{s,j}$; "Weights" is the portfolio weight changes "common" subcomponent, $\Delta d_t^{\omega,j}$; "net R" is the net-of-fee returns "common" subcomponent, $\Delta d_t^{r^{NF},j}$; "Flows" is the final flows "common" subcomponent, $\Delta d_t^{f,j}$; and "Resid" is the residual (unobservable) subcomponent, $\Delta d_t^{Resid,j}$. We allow for ISIN-level fixed effects.

Table G.10: ISIN-Level Equity Price Growth Rate Decomposition: Index Funds vs Active Funds Portfolio Weight Changes and Flows: Panel Regressions (Quarterly Sample)

Currency	$\Delta d^{\omega,j}_{Index}$	$\Delta d^{\omega,j}_{Active}$	$\Delta d^{f,j}_{Index}$	$\Delta d^{f,j}_{Active}$
AUD	0.175***	0.608***	-0.002	0.007***
BRL	0.101***	0.642***	0.003**	0.033***
CAD	0.129***	0.639***	0.005***	-0.003*
CHF	0.144***	0.471***	0.000	0.014***
CLP	0.230***	0.564***	0.018***	0.062***
CNH	0.394***	0.473***	0.034***	0.004***
COP	0.418***	0.520***	0.018***	-0.002
CZK	0.096	0.541***	0.003	0.019*
DKK	0.068***	0.612***	0.001	-0.005
EGP	0.156***	0.464***	0.014**	0.008*
EUR	0.073***	0.565***	0.006***	0.023***
GBP	0.089***	0.599***	0.001***	0.018***
HKD	0.142***	0.589***	0.007***	0.014***
HUF	0.227	0.598***	0.010	0.036**
IDR	0.172***	0.714***	0.009***	0.017***
ILS	0.106***	0.463***	0.018***	0.118***
INR	0.070***	0.657***	0.002***	0.020***
JPY	0.240***	0.444***	0.011***	-0.006***
KRW	0.245***	0.694***	-0.004***	-0.000
MXN	0.167***	0.539***	0.002	0.034***
MYR	0.161***	0.618***	0.005***	0.030***
NOK	0.094***	0.605***	0.003*	0.015***
NZD	0.135***	0.663***	0.005	-0.011
PHP	0.129***	0.645***	0.009***	0.024***
PLN	0.192***	0.636***	0.013***	0.013***
RUB	0.316***	0.672***	0.005	0.026***
SEK	0.203***	0.504***	0.020***	0.016***
SGD	0.121***	0.630***	0.005*	0.004
THB	0.169***	0.562***	0.016***	0.018***
TRY	0.166***	0.610***	0.011***	0.020***
TWD	0.177***	0.579***	0.008***	0.010***
USD	0.214***	0.419***	0.006***	0.005***
ZAR	0.093***	0.651***	0.003**	0.018***

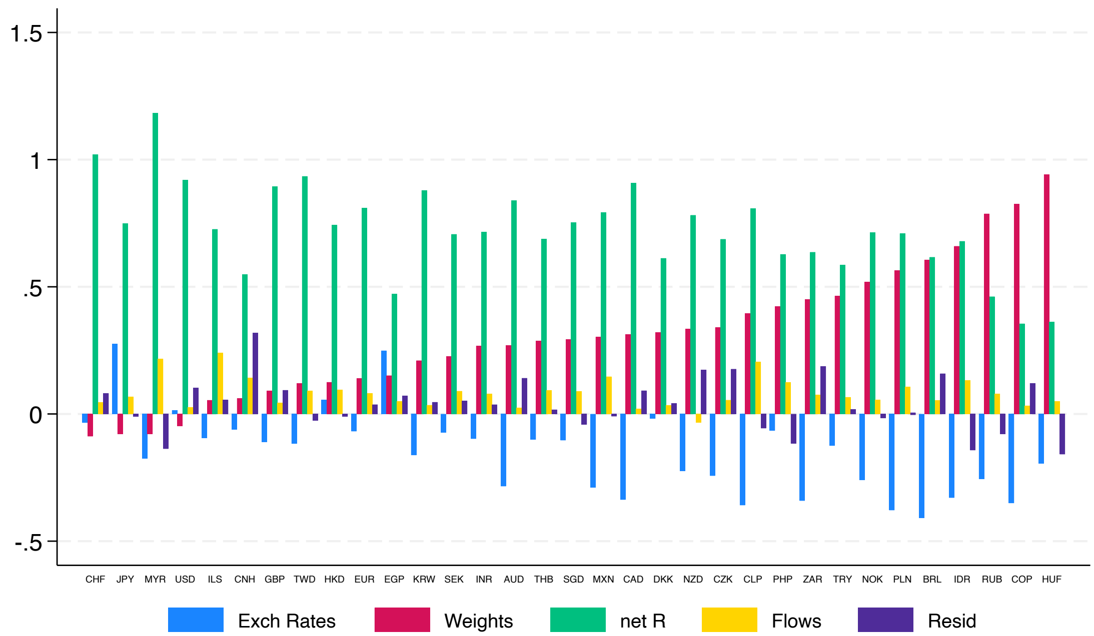
Note: This table reports coefficients from panel regressions of the portfolio weight changes and final flows "common" subcomponents, broken down by index and active funds, on Δp^j_t by stock market (as denoted by the currency associated with that market). Specifically, $\Delta d^{\omega,j}_{Index}$ and $\Delta d^{\omega,j}_{Active}$ denote the portfolio weight changes "common" subcomponents of index and active funds, respectively, while $\Delta d^{f,j}_{Index}$ and $\Delta d^{f,j}_{Active}$ denote the final flows "common" subcomponents of index and active funds, respectively. We allow for ISIN-level fixed effects and cluster the standard errors by ISIN. * significant at 10%; ** at 5%; *** at 1%.

Table G.11: ISIN-Level Equity Price Growth Rate Decomposition: Local vs Other Currency Investors Portfolio Weight Changes and Flows: Panel Regressions (Quarterly Sample)

Currency	$\Delta d^{\omega,j}_{LocalCurr}$	$\Delta d^{\omega,j}_{OtherCurr}$	$\Delta d^{f,j}_{LocalCurr}$	$\Delta d^{f,j}_{OtherCurr}$
AUD	0.299***	0.448***	0.007***	-0.002
BRL	0.358***	0.455***	0.018***	0.021***
CAD	0.005***	0.713***	0.000***	-0.001
CHF	0.308***	0.317***	0.006***	0.010***
CLP	0.186***	0.592***	0.057***	0.030***
CNH	0.012***	0.750***	0.000	0.031***
COP	.	0.921***	.	0.016***
CZK	.	0.629***	.	0.012
DKK	0.101***	0.579***	0.000	-0.005
EGP	.	0.571***	.	0.018***
EUR	0.332***	0.321***	0.029***	-0.002**
GBP	0.469***	0.235***	0.016***	0.003***
HKD	0.003***	0.671***	0.001***	0.017***
HUF	.	0.692***	.	0.036**
IDR	.	0.818***	.	0.022***
ILS	0.397***	0.225***	0.129***	0.004**
INR	0.376***	0.415***	0.013***	0.010***
JPY	0.188***	0.484***	0.007***	-0.003***
KRW	0.498***	0.462***	-0.009***	0.004***
MXN	0.221***	0.462***	0.010**	0.025***
MYR	0.045***	0.685***	-0.002	0.032***
NOK	0.286***	0.423***	0.015***	0.003*
NZD	0.376***	0.437***	0.003	-0.012*
PHP	.	0.720***	.	0.027***
PLN	.	0.758***	.	0.019***
RUB	.	0.835***	.	0.022***
SEK	0.436***	0.274***	0.032***	0.002
SGD	0.021***	0.689***	-0.000	0.005
THB	0.616***	0.288***	0.017***	0.021***
TRY	0.003	0.721***	0.006*	0.024***
TWD	0.069***	0.664***	-0.006***	0.016***
USD	0.604***	0.019***	0.010***	0.001***
ZAR	0.429***	0.356***	0.015***	0.007***

Note: This table reports coefficients from panel regressions of the portfolio weight changes and final flows "common" subcomponents, broken down by local-currency and foreign-currency investors, on Δp^j_t by stock market (as denoted by the currency associated with that market). Specifically, $\Delta d^{\omega,j}_{LocalCurr}$ and $\Delta d^{\omega,j}_{OtherCurr}$ denote the portfolio weight changes "common" subcomponents of local-currency and foreign-currency investors, respectively, while $\Delta d^{f,j}_{LocalCurr}$ and $\Delta d^{f,j}_{OtherCurr}$ denote the final flows "common" subcomponents of local-currency and foreign-currency investors, respectively. We allow for ISIN-level fixed effects and cluster the standard errors by ISIN. * significant at 10%; ** at 5%; *** at 1%.

Figure G.53: Aggregate Stock Market Price Growth Rate Decomposition (Quarterly Sample)



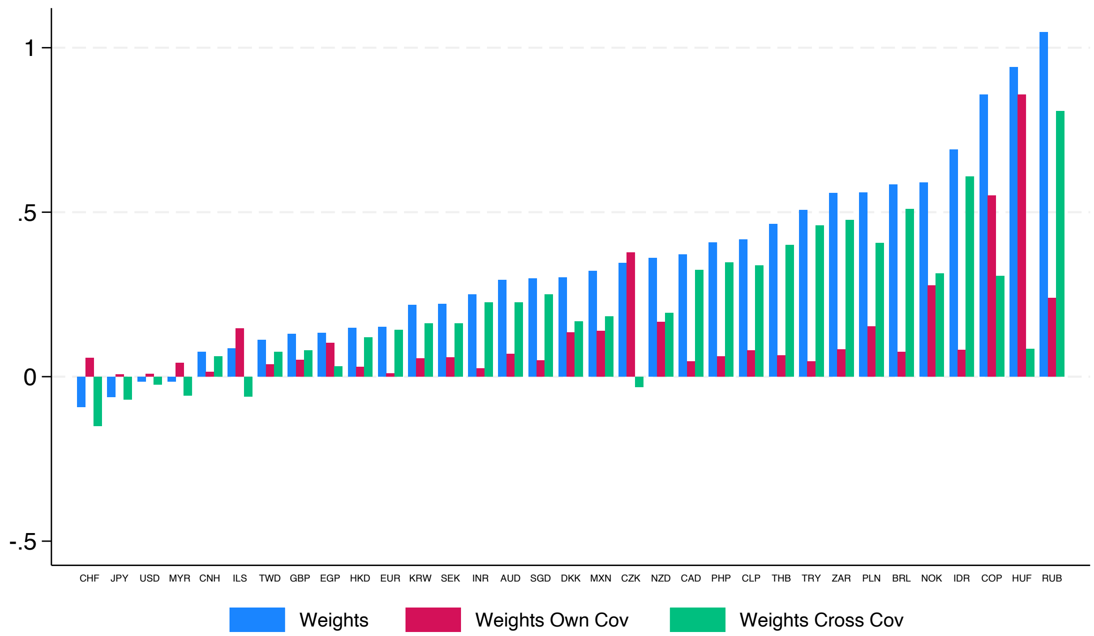
Notes: This figure presents OLS coefficients from regressions of the equity holdings subcomponents on the aggregate stock market price growth rate, $\Delta p_t^{SM,l}$ (where the stock market is denoted by the currency associated with that market). "Exch Rates" is the exchange rate "common" subcomponent, $\Delta D_t^{s,l}$; "Weights" is the portfolio weight changes "common" subcomponent, $\Delta D_t^{\omega,l}$; "net R" is the net-of-fee returns "common" subcomponent, $\Delta D_t^{r^{NF},l}$; "Flows" is the final flows "common" subcomponent, $\Delta D_t^{f,l}$; and "Resid" is the residual (unobservable) subcomponent, $\Delta D_t^{Resid,l}$.

Table G.12: Aggregate Stock Market Price Growth Rate Decomposition (Quarterly Sample)

Currency	ΔD^{l}	R^2	$\Delta D^{s,l}$	R^2	$\Delta D^{\omega,l}$	R^2	$\Delta D^{r^{NF},l}$	R^2	$\Delta D^{f,l}$	R^2	$\Delta D^{Resid,l}$	R^2
AUD	0.85***	0.89	-0.28***	0.40	0.27***	0.30	0.84***	0.83	0.02	-0.00	0.14***	0.15
BRL	0.87***	0.74	-0.41***	0.59	0.61***	0.55	0.62***	0.75	0.05**	0.06	0.16**	0.08
CAD	0.90***	0.84	-0.34***	0.57	0.31***	0.27	0.91***	0.78	0.02	-0.01	0.09	0.04
CHF	0.94***	0.67	-0.03	-0.01	-0.09	-0.00	1.02***	0.85	0.05*	0.02	0.08	-0.00
CLP	1.05***	0.75	-0.36***	0.37	0.40***	0.16	0.81***	0.54	0.21***	0.25	-0.06	-0.01
CNH	0.69***	0.38	-0.06***	0.12	0.06	-0.02	0.55***	0.54	0.14**	0.13	0.32	0.09
COP	0.86***	0.75	-0.35***	0.43	0.83***	0.71	0.36***	0.33	0.03	0.00	0.12	0.03
CZK	0.84***	0.81	-0.24***	0.21	0.34***	0.15	0.69***	0.53	0.05*	0.03	0.18***	0.14
DKK	0.95***	0.85	-0.02	-0.01	0.32***	0.42	0.61***	0.76	0.03	0.04	0.04	-0.01
EGP	0.92***	0.84	0.25	0.12	0.15	0.03	0.47***	0.47	0.05	0.04	0.07	0.01
EUR	0.96***	0.91	-0.07*	0.05	0.14***	0.23	0.81***	0.92	0.08***	0.12	0.04	-0.00
GBP	0.92***	0.86	-0.11*	0.10	0.09	0.05	0.89***	0.88	0.04*	0.02	0.09	0.05
HKD	1.02***	0.89	0.06***	0.50	0.13	0.05	0.74***	0.83	0.10***	0.25	-0.01	-0.02
HUF	1.16***	0.92	-0.20***	0.39	0.94***	0.80	0.36***	0.58	0.05***	0.12	-0.16***	0.17
IDR	1.14***	0.77	-0.33***	0.52	0.66***	0.32	0.68***	0.55	0.13***	0.25	-0.14	0.03
ILS	0.93***	0.70	-0.10**	0.12	0.05	-0.01	0.73***	0.67	0.24***	0.27	0.06	-0.01
INR	0.97***	0.88	-0.10***	0.27	0.27***	0.33	0.72***	0.86	0.08*	0.16	0.04	-0.01
JPY	1.01***	0.90	0.28***	0.37	-0.08	0.01	0.75***	0.71	0.07*	0.05	-0.01	-0.02
KRW	0.96***	0.89	-0.16***	0.26	0.21***	0.28	0.88***	0.85	0.04	0.01	0.05	0.00
MXN	0.95***	0.77	-0.29***	0.36	0.30***	0.26	0.79***	0.74	0.15***	0.08	-0.01	-0.02
MYR	1.15***	0.79	-0.18***	0.11	-0.08	-0.01	1.18***	0.73	0.22***	0.19	-0.14	0.03
NOK	1.03***	0.66	-0.26***	0.45	0.52***	0.28	0.71***	0.75	0.06**	0.05	-0.02	-0.02
NZD	0.86***	0.71	-0.22***	0.16	0.33***	0.13	0.78***	0.48	-0.03	-0.01	0.17***	0.08
PHP	1.11***	0.90	-0.07*	0.09	0.42***	0.27	0.63***	0.50	0.12***	0.21	-0.12**	0.08
PLN	1.00***	0.86	-0.38***	0.47	0.56***	0.48	0.71***	0.68	0.11***	0.15	0.00	-0.02
RUB	1.07***	0.35	-0.26***	0.20	0.79*	0.19	0.46***	0.49	0.08***	0.11	-0.08	-0.02
SEK	0.95***	0.91	-0.07***	0.20	0.23***	0.36	0.71***	0.89	0.09***	0.26	0.05	0.01
SGD	1.03***	0.89	-0.10***	0.21	0.29***	0.24	0.75***	0.75	0.09***	0.16	-0.04	-0.00
THB	0.97***	0.70	-0.10***	0.35	0.29***	0.14	0.69***	0.77	0.09**	0.09	0.02	-0.02
TRY	0.99***	0.86	-0.13	0.02	0.46***	0.27	0.59***	0.57	0.07**	0.08	0.02	-0.02
TWD	1.03***	0.88	-0.12***	0.23	0.12**	0.09	0.93***	0.81	0.09***	0.09	-0.03	-0.01
USD	0.91***	0.94	0.01***	0.24	-0.05	0.09	0.92***	0.98	0.03	0.01	0.10**	0.17
ZAR	0.82***	0.79	-0.34***	0.44	0.45***	0.36	0.64***	0.50	0.08***	0.06	0.19***	0.15

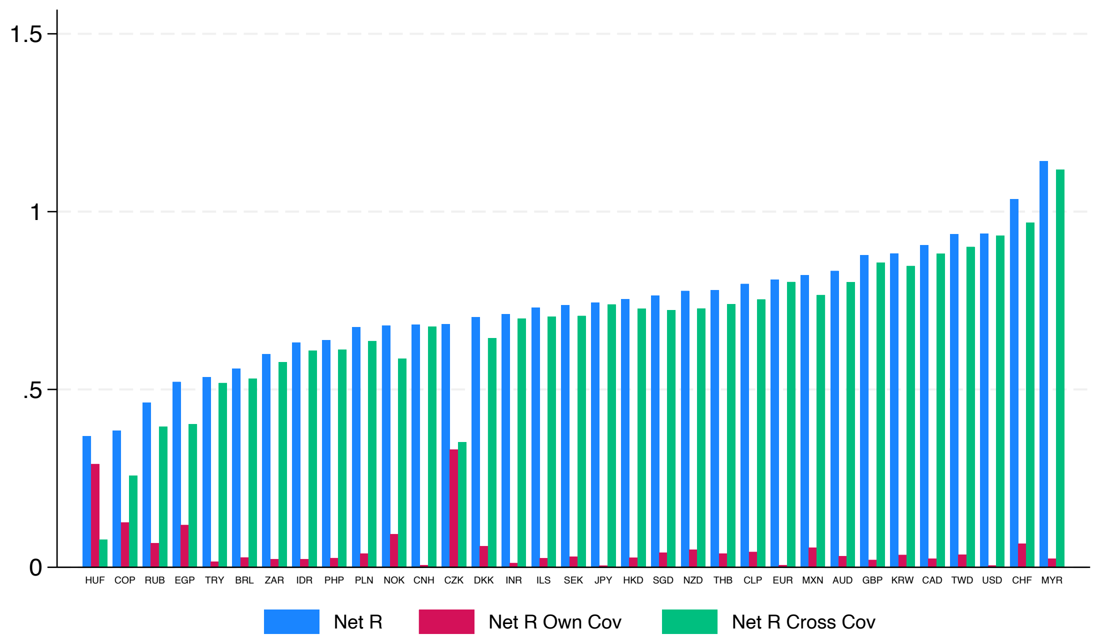
Note: This table reports OLS coefficients from regressions of the total "common" component of equity holdings, ΔD^{l}, and its subcomponents on the aggregate stock market price growth rate (where the stock market is denoted by the currency associated with that market). The subcomponents are the exchange rate "common" subcomponent, $\Delta D^{s,l}$; the portfolio weight changes "common" subcomponent, $\Delta D^{\omega,l}$; the net-of-fee returns "common" subcomponent, $\Delta D^{r^{NF},l}$; and the final flows "common" subcomponent, $\Delta D^{f,l}$. We also report results for the residual (unobservable) subcomponent, $\Delta D^{Resid,l}$. The table also presents the corresponding R^2 values next to each component. Robust standard errors. * significant at 10%; ** at 5%; *** at 1%.

Figure G.54: The Importance of Own vs Cross-Covariance Subcomponents: Portfolio Weight Changes (Quarterly Sample)



Notes: This figure presents coefficients from panel regressions of the portfolio weight changes "common" subcomponent, $\Delta D_t^{\omega,l}$, on Δp_t^j by stock market (as denoted by the currency associated with that market). The estimates are further decomposed into parts associated with *own* and *cross* comovements between portfolio weight changes and equity price growth rates. "Weight" refers to the total portfolio weight changes "common" subcomponent, $\Delta D_t^{\omega,l}$. "Weights Own Cov" corresponds to β^{ω}_{OwnCov}, defined in (13), and captures how much of the overall stock price movement is explained by the ISIN-level comovement of portfolio weight changes with their own-ISIN prices, scaled appropriately. "Weights Cross Cov" corresponds to $\beta^{\omega}_{CrossCov}$, also defined in (13), and measures the contribution of ISIN-level comovement between portfolio weight changes and cross-ISIN prices, scaled appropriately.

Figure G.55: The Importance of Own vs Cross-Covariance subcomponents: Net-of-Fee Returns (Quarterly Sample)



Notes: This figure presents coefficients from panel regressions of the net-of-fee returns "common" subcomponent, $\Delta D_t^{r^{NF},l}$ on $\Delta p_t^{SM,l}$ by stock market (as denoted by the currency associated with that market). The estimates are further decomposed into parts associated with *own* and *cross* comovements between net-of-fee returns and equity price growth rates. "Net R" refers to the total net-of-fee returns "common" subcomponent, $\Delta D_t^{r^{NF},l}$. "Net R Own Cov" corresponds to $\beta_{OwnCov}^{r^{NF}} = \sum_j \left(\nu^{j,l}\right)^2 \frac{\mathrm{Var}\left(\Delta p_t^j\right)}{\mathrm{Var}\left(\sum_j \nu^{j,l} \Delta p_t^j\right)} \frac{\mathrm{Cov}\left(\Delta p_t^j, \Delta d_t^{j,r^{NF}}\right)}{\mathrm{Var}(\Delta p_t^j)}$, and captures how much of the overall stock price movement is explained by the ISIN-level comovement of net-of-fee returns with their own-ISIN prices, scaled appropriately. "Net R Cross Cov" corresponds to $\beta_{CrossCov}^{r^{NF}} = \sum_j \sum_{k \neq j} \nu^{j,l} \nu^{k,l} \frac{\mathrm{Cov}\left(\Delta d_t^{j,r^{NF}}, \Delta p_t^k\right)}{\mathrm{Var}(\Delta p_t^k)} \frac{\mathrm{Var}(\Delta p_t^k)}{\mathrm{Var}\left(\sum_j \nu^{j,l} \Delta p_t^j\right)}$, and measures the contribution of ISIN-level comovement between net-of-fee returns and cross-ISIN prices, scaled appropriately.

H Structural model

H.1 Optimal active fund portfolio shares

Recall that the an active fund i's optimization problem is to solve:

$$\max_{\{\omega_t^{i,j,A}\}} c^p \left(\sum_{c=1}^{C} \sum_{j \in J^c} \omega_t^{i,j,A} E_t^i \frac{P_{t+1}^{j,USD}}{P_t^{j,USD}} \right) - \sum_{c=1}^{C} \sum_{j \in J^c} \frac{\varphi}{2} \left(\omega_t^{i,j,A} \right)^2 - \sum_{z=1}^{Z} \frac{\mu^z}{2} \left(\sum_{j \in J^z} \omega_t^{i,j,A} \right)^2 - \sum_{c=1}^{C} \frac{\mu^c}{2} \left(\sum_{j \in J^c} \omega_t^{i,j,A} \right)^2,$$

subject to the constraint that the weights need to sum-up to one:

$$\sum_{c=1}^{C} \sum_{j \in J^c} \omega_t^{i,j,A} \leq 1, \tag{23}$$

with Lagrange multiplier λ_t^A.

Then, the first-order conditions (FOC) imply that we can express a single asset manager's optimal portfolio weight in terms of its expected return and the total weights placed on the stocks in its industry and its country:

$$\omega_t^{i,j,A} : \varphi \omega_t^{i,j,A} = c^p \left(E_t^i \frac{P_{t+1}^{j,USD}}{P_t^{j,USD}} \right) - \mu^z \left(\sum_{j \in J^z} \omega_t^{i,j,A} \right) - \mu^c \left(\sum_{j \in J^c} \omega_t^{i,j,A} \right) - \lambda_t^A. \tag{24}$$

We then sum this expression across different groups of stocks to solve out for these total industry and total country weights as well as for the λ_t^A Lagrange multiplier (using equation 23).

$$\begin{aligned} \sum_{j \in J^c} \omega_t^{i,j,A} &= \frac{c^p \sum_{j \in J^c} \left(E_t^i \frac{P_{t+1}^{j,USD}}{P_t^{j,USD}} \right) - \frac{N^c}{Z} \mu^z \sum_{z=1}^{Z} \left(\sum_{j \in J^z} \omega_t^{i,j,A} \right) - N^c \lambda_t^A}{N^c \mu^c + \varphi}, \\ &= \frac{c^p \sum_{j \in J^c} \left(E_t^i \frac{P_{t+1}^{j,USD}}{P_t^{j,USD}} \right) - \frac{N^c}{Z} \mu^z - N^c \lambda_t^A}{N^c \mu^c + \varphi}. \end{aligned} \tag{25}$$

To obtain the first line of this equation, note that this sum is over all firms in country c, each of which belongs to a particular industry z (e.g., the technology industry for Apple). For each of these firms, the industry diversification motive means that the portfolio weight allocated to that entire industry *globally* enters into the FOC in equation (24). That is, for fund i's optimal weight on Apple, the fund takes into account its total allocation to all global technology firms including ones in other countries, like Samsung. But importantly, this same industry-level weight also matters for fund i's weight on other same-country technology firms, like Microsoft. Thus, when we sum over all country c firms, we obtain a sum over the industry-level portfolio weights of all industries, *each* *multiplied by the number of country c firms in that industry.* With our assumption of a uniform firm distribution across countries and industries, this simplifies to a constant $\frac{N^c}{Z}$ times the sum of fund i's weights allocated to all industries.

Because this sum $\sum_{z=1}^{Z}\left(\sum_{j\in J^z}\omega_t^{i,j,A}\right)$ is just the sum of fund i's weights on all stocks, it will be equal to 1, thus delivering the second line of this equation.[38]

We analogously sum equation (24) over industries to solve for the total portfolio weight on industry z which when combined with the equation above implies:

$$\begin{aligned}\sum_{j\in J^z}\omega_t^{i,j,A} &= \frac{c^p\sum_{j\in J^z}\left(E_t^i\frac{P_{t+1}^{j,USD}}{P_t^{j,USD}}\right)-\frac{N^z}{C}\mu^c\sum_{c=1}^{C}\left(\sum_{j\in J^c}\omega_t^{i,j,A}\right)-N^z\lambda_t^A}{N^z\mu^z+\varphi},\\ &= \frac{c^p\sum_{j\in J^z}\left(E_t^i\frac{P_{t+1}^{j,USD}}{P_t^{j,USD}}\right)-\frac{N^z}{C}\mu^c-N^z\lambda_t^A}{N^z\mu^z+\varphi}. \end{aligned} \tag{26}$$

Then, summing equation (25) over all countries and again using the summing-up condition allows us to express the Lagrange multiplier as the expected fee earned from the unweighted average return over all stocks globally less each of the diversification preference parameters scaled by the size of the relevant group (number of industries, countries, or all stocks).

$$\lambda_t^A=\frac{c^p}{CN^c}\sum_{c=1}^{C}\sum_{j\in J^c}\left(E_t^i\frac{P_{t+1}^{j,USD}}{P_t^{j,USD}}\right)-\frac{\mu^z}{Z}-\frac{\mu^c}{C}-\frac{\varphi}{CN^c}.$$

Then, we can substitute this expression back into equations (25) and (26) to obtain the optimal country and industry weights:

$$\begin{aligned}\sum_{j\in J^c}\omega_t^{i,j,A} &= \frac{c^pE_t^i\left[\frac{1}{N^c}\sum_{j\in J^c}E_t^i\left(\frac{P_{t+1}^{j,USD}}{P_t^{j,USD}}\right)-\frac{1}{CN^c}\sum_{c=1}^{C}\sum_{j\in J^c}\left(E_t^i\frac{P_{t+1}^{j,USD}}{P_t^{j,USD}}\right)\right]}{\mu^c+\frac{\varphi}{N^c}}+\frac{1}{C}\\ \text{and}\quad \sum_{j\in J^z}\omega_t^{i,j,A} &= \frac{c^pE_t^i\left[\frac{1}{N^z}\sum_{j\in J^z}E_t^i\left(\frac{P_{t+1}^{j,USD}}{P_t^{j,USD}}\right)-\frac{1}{CN^c}\sum_{c=1}^{C}\sum_{j\in J^c}\left(E_t^i\frac{P_{t+1}^{j,USD}}{P_t^{j,USD}}\right)\right]}{\mu^z+\frac{\varphi}{N^z}}+\frac{1}{Z},\end{aligned}$$

[38] This sums first within each industry and then across all industries while equation (23) sums first within each country and then across all countries, but both methods arrive at the sum over all firms in the global investment universe.

We then substitute these expressions into equation (24) to obtain the optimal asset j weight:

$$\begin{aligned}
\omega_t^{i,j,A} &= \frac{c^p E_t^i \left[\frac{P_{t+1}^{j,USD}}{P_t^{j,USD}} - \tilde{R}_{t+1}^{c,z} \right]}{\varphi} + \frac{1}{CN^c}, \\
\text{where } \tilde{R}_{t+1}^{c,z} &\equiv \frac{1 - \tilde{\mu}^z - \tilde{\mu}^c}{CN^c} \sum_{c=1}^{C} \sum_{j \in J^c} \frac{P_{t+1}^{j,USD}}{P_t^{j,USD}} + \frac{\tilde{\mu}^z}{N^z} \sum_{j \in J^z} \frac{P_{t+1}^{j,USD}}{P_t^{j,USD}} + \frac{\tilde{\mu}^c}{N^c} \sum_{j \in J^c} \frac{P_{t+1}^{j,USD}}{P_t^{j,USD}}, \\
\tilde{\mu}^c &\equiv \frac{\mu^c}{\mu^c + \frac{\varphi}{N^c}} \text{ and } \tilde{\mu}^z \equiv \frac{\mu^z}{\mu^z + \frac{\varphi}{N^z}}.
\end{aligned}$$

where we use the fact that the total number of assets is $CN^c = ZN^z$. The country (industry) weight can be intuitively interpreted as the uniform weight, but tilted toward the expected unweighted average country (industry) return relative to the unweighted average global return. This relative return's role in determining these weights rises with the fund fee rate and falls with the strength of the country (industry) diversification preference.

H.2 Solving for asset prices

Market clearing with all index and active funds is:

$$\sum_{i \in I^A} \omega_t^{i,j,A} W_t^{i,A} + \omega_t^{j,I^c} W_t^{I^c} = P_t^{j,USD} Q^j$$

where the portfolio weights and wealth AUMs derived above are:

$$\omega_t^{j,I^c} = \frac{P_t^{j,USD} Q^j}{\sum_{k=1}^{J^c} P_t^{k,USD} Q^k}$$

$$\omega_t^{i,j,A} = \frac{c^p E_t^i \left[\frac{P_{t+1}^{j,USD}}{P_t^{j,USD}} - \tilde{R}_{t+1}^{c,z} \right]}{\varphi} + \frac{1}{CN^c}$$

$$W_t^{i,A} = (1 - c^p) W_{t-1}^{i,A} \sum_{c=1}^{C} \sum_{j \in J^c} \omega_{t-1}^{i,j,A} \frac{P_t^{j,USD}}{P_{t-1}^{j,USD}} + Flow_t^{i,A}$$

$$W_t^{I^c} = (1 - c^p) W_{t-1}^{I^c} \sum_{j \in J^c} \frac{P_t^{j,USD}}{P_{t-1}^{j,USD}} \omega_{t-1}^{j,I^c} + Flow_t^{I^c}$$

Recalling that fund returns are just average (gross) price growth rates (as we abstract from dividends), we can then linearize the model and solve for price changes as a function of returns beliefs (through weights) and flows.

Log-linearized weight changes: For index funds, we have:

$$\Delta \ln \omega_t^{j,I^c} \;=\; \Delta p_t^{j,USD} - \sum_{k\in J^c} \bar{\omega}^{k,I^c} \Delta p_t^{k,USD} = \left(1-\bar{\omega}^{j,I^c}\right) \Delta p_t^{j,USD} - \sum_{k\in J^c\setminus j} \bar{\omega}^{k,I^c} \Delta p_t^{k,USD}$$

For active funds, ignoring Jensen inequality terms and writing the returns in terms of log price changes we have:

$$\begin{aligned}\ln \omega_t^{i,j,A} = &\frac{1}{\bar{\omega}^{i,j,A} C N^c} + \frac{c^p}{\bar{\omega}^{i,j,A}\varphi} E_t^i \Delta p_{t+1}^{j,USD} - \frac{c^p \tilde{\mu}^c}{\bar{\omega}^{i,j,A}\varphi N^c} \sum_{j\in J^c} E_t^i \Delta p_{t+1}^{j,USD} \\ &- \frac{c^p \tilde{\mu}^z}{\bar{\omega}^{i,j,A}\varphi N^z} \sum_{j\in J^z} E_t^i \Delta p_{t+1}^{j,USD} - \frac{c^p\left(1-\tilde{\mu}^z-\tilde{\mu}^c\right)}{\bar{\omega}^{i,j,A}\varphi C N^c} \sum_{c=1}^{C} \sum_{j\in J^c} E_t^i \Delta p_{t+1}^{j,USD}.\end{aligned}$$

Then, in changes, we have

$$\begin{aligned}\Delta \ln \omega_t^{i,j,A} = &\frac{c^p}{\bar{\omega}^{i,j,A}\varphi}(E_t^i \Delta p_{t+1}^{j,USD} - E_{t-1}^i \Delta p_t^{j,USD}) - \frac{c^p \tilde{\mu}^c}{\bar{\omega}^{i,j,A}\varphi N^c} \sum_{j\in J^c}(E_t^i \Delta p_{t+1}^{j,USD} - E_{t-1}^i \Delta p_t^{j,USD}) \\ &- \frac{c^p \tilde{\mu}^z}{\bar{\omega}^{i,j,A}\varphi N^z} \sum_{j\in J^z}(E_t^i \Delta p_{t+1}^{j,USD} - E_{t-1}^i \Delta p_t^{j,USD}) \\ &- \frac{c^p\left(1-\tilde{\mu}^z-\tilde{\mu}^c\right)}{\bar{\omega}^{i,j,A}\varphi C N^c} \sum_{c=1}^{C} \sum_{j\in J^c}(E_t^i \Delta p_{t+1}^{j,USD} - E_{t-1}^i \Delta p_t^{j,USD}).\end{aligned} \tag{27}$$

Linearized market clearing conditions: As we do in Section 3, we linearize the market clearing conditions in logs of weights and levels of flows (as flows can take on negative values). Unlike in Section 3, we do not have an exchange rate term since we've written asset prices in USD terms:

$$\sum_{i\in I^A} \mu^{i,j,A} \ln \omega_t^{i,j,A} + \sum_{i\in I^A} \mu^{i,j,A} w_t^{i,A} + \mu^{j,I^c}\left(\ln \omega_t^{j,I^c} + w_t^{I^c}\right) = p_t^{j,USD},$$

where, given our linearization, we have sums of individual funds' portfolio weights and flows weighted by steady state holdings of a particular stock j as shares of the stock's steady-state market cap.

$$\mu^{i,j,A} = \frac{\bar{\omega}^{i,j,A}\bar{W}^{i,A}}{\bar{P}^{j,USD} Q_j^c}; \mu^{j,I^c} = \frac{\bar{\omega}^{j,I^c}\bar{W}^{I^c}}{\bar{P}^{j,USD} Q_j^c}.$$

In changes, this is:

$$\sum_{i\in I^A} \mu^{i,j,A} \Delta \ln \omega_t^{i,j,A} + \sum_{i\in I^A} \mu^{i,j,A} \Delta w_t^{i,A} + \mu^{j,I^c}\left(\Delta \ln \omega_t^{j,I^c} + \Delta w_t^{I^c}\right) = \Delta p_t^{j,USD},$$

where the linearized evolution of AUMs for our two fund times are:

$$\begin{aligned}
\exp \Delta w_t^{I^c} &= \left(1 - c^{p,I}\right) \sum_{j \in J^c} \exp \Delta p_t^{j,USD} \omega_{t-1}^{j,I^c} + flow_t^{I^c} \\
\text{and} \quad \exp \Delta w_t^{i,A} &= \left(1 - c^{p}\right) \sum_{c=1}^{C} \sum_{j \in J^c} \exp \Delta p_t^{j,USD} \omega_{t-1}^{i,j,A} + flow_t^{i,A}, \\
\text{where} \quad flow_t^{I^c} &= \frac{Flow_t^{I^c}}{W_{t-1}^{I^c}} \text{ and } flow_t^{i,A} = \frac{Flow_t^{i,A}}{W_{t-1}^{i,A}}.
\end{aligned}$$

Then, in changes, and approximating around $\overline{\Delta p^{j,USD}} = 0$,

$$\Delta w_t^{I^c} = \left(1 - c^{p,I}\right) \sum_{j \in J^c} \Delta p_t^{j,USD} \bar{\omega}^{j,I^c} + flow_t^{I^c}$$

$$\text{and} \quad \Delta w_t^{i,A} = \left(1 - c^{p}\right) \sum_{c=1}^{C} \sum_{j \in J^c} \Delta p_t^{j,USD} \bar{\omega}^{i,j,A} + flow_t^{i,A}.$$

Combining all linearized equations:

$$\begin{aligned}
&\sum_{i \in I^A} \mu^{i,j,A} \Delta \ln \omega_t^{i,j,A} + \sum_{i \in I^A} \mu^{i,j,A} flow_t^{i,A} + \mu^{j,I^c} flow_t^{I^c} \\
= \;& \left(1 - \mu^{j,I^c}\right) \Delta p_t^{j,USD} - \left(1 - c^{p}\right) \sum_{c=1}^{C} \sum_{k \in J^c} \left(\sum_{i \in I^A} \mu^{i,j,A} \bar{\omega}^{i,k,A} \Delta p_t^{k,USD} \right) + \mu^{j,I^c} c^{p,I} \sum_{k \in J^c} \bar{\omega}^{k,I^c} \Delta p_t^{k,USD}
\end{aligned}$$

The equation above exists for all stocks where $j = 1, ..., CN^c$. For simplicity, assume that the index fund fees are close to zero, i.e. $c^{p,I} \rightarrow 0$. The set of all equations forms a linear matrix equation in the vector of all price changes and we can use it to solve for the vector of all prices as a function of weights, and flows.

$$\begin{aligned}
\mathbf{\Delta P}_t^{USD} &= \mathbf{\Phi}^{-1} \left[\mathbf{\Delta} \ln \boldsymbol{\omega}_t^{j,A} + \mathbf{flow}_t^{A} + \mathbf{flow}_t^{I^c} \right], \\
\text{where} \quad \mathbf{\Delta P}_t^{USD} &= \left[\Delta p_t^{1,USD} \;\; ... \;\; \Delta p_t^{CN^c,USD} \right]', \\
\mathbf{\Delta} \ln \boldsymbol{\omega}_t^{A} &= \left[\sum_{i \in I^A} \mu^{i,1,A} \Delta \ln \omega_t^{i,1,A} \;\; ... \;\; \sum_{i \in I^A} \mu^{i,CN^c,A} \Delta \ln \omega_t^{i,CN^c,A} \right]', \\
\mathbf{flow}_t^{A} &= \left[\sum_{i \in I^A} \mu^{i,1,A} flow_t^{i,A} \;\; ... \;\; \sum_{i \in I^A} \mu^{i,CN^c,A} flow_t^{i,A} \right]', \\
\text{and} \quad \mathbf{flow}_t^{I^c} &= \left[\mu^{1,I^c} flow_t^{I^c} \;\; ... \;\; \mu^{CN^c,I^c} flow_t^{I^c} \right]'.
\end{aligned}$$

The matrix $\mathbf{\Phi}$ is:

$$\mathbf{\Phi} = \begin{bmatrix} 1-\mu^{1,I^c}-(1-c^p)\sum_{i\in I^A}\mu^{i,1,A}\bar{\omega}^{i,1,A} & -(1-c^p)\sum_{i\in I^A}\mu^{i,1,A}\bar{\omega}^{i,2,A} & \cdots & -(1-c^p)\sum_{i\in I^A}\mu^{i,1,A}\bar{\omega}^{i,CN^c,A} \\ -(1-c^p)\sum_{i\in I^A}\mu^{i,2,A}\bar{\omega}^{i,1,A} & 1-\mu^{2,I^c}-(1-c^p)\sum_{i\in I^A}\mu^{i,2,A}\bar{\omega}^{i,2,A} & \cdots & -(1-c^p)\sum_{i\in I^A}\mu^{i,2,A}\bar{\omega}^{i,CN^c,A} \\ \vdots & \vdots & \ddots & \vdots \\ -(1-c^p)\sum_{i\in I^A}\mu^{i,CN^c,A}\bar{\omega}^{i,1,A} & -(1-c^p)\sum_{i\in I^A}\mu^{i,CN^c,A}\bar{\omega}^{i,2,A} & \cdots & 1-\mu^{CN^c,I^c}-(1-c^p)\sum_{i\in I^A}\mu^{i,CN^c,A}\bar{\omega}^{i,CN^c,A} \end{bmatrix}$$

H.3 Empirical Implementation

Flows

To further assess the drivers of $\Delta \ln \omega_t^{i,j,A}$, $flow_t^{i,A}$ and $flow_t^{I^{US}}$ based on the model described in the previous section, we amend the representativeness model of Section 3. Moreover, we utilize the marginal trader decomposition in Internet Appendix Section E which uses information only from the portfolio weight changes if the fund is also changing the number of shares held.

More specifically, we replace $\alpha_t^{f,\tau}$ and $\alpha_t^{\omega,\tau,j}$ with the following term constructed from a number of panel regressions using the functional forms in the previous section. Starting with the common component of final fund flows, we express $\alpha_t^{f,\tau}$ as

$$\alpha_t^{f,\tau} = \alpha_t^{f,macro,\tau} + \alpha_t^{f,risk,\tau} + \alpha_t^{f,perform,\tau} + \alpha_t^{f,sentiment,\tau}. \tag{28}$$

Each of these terms on the right are parts of the fitted value from the following panel regression across funds:

$$\begin{aligned} flow_t^{i,\tau} \quad = \quad & \mu^{i,f,\tau} + \mu^{f,\tau,macro}\Delta S\&P_t^{macro,US} + \mu^{f,\tau,risk}RA_t^{news} \\ & + \sum_{l=1}^{6}\mu_l^{f,\tau,NF}r_{t-l}^{i,NF} + \sum_{l=1}^{6}\mu_l^{f,\tau,US}\Delta p_{t-l}^{SM,US} + \sum_{l=1}^{6}\mu_l^{f,\tau,c}\Delta p_{t-l}^{SM,c} + \varepsilon_t^{i,flow}. \end{aligned} \tag{29}$$

where $\Delta S\&P_t^{macro,US}$ and RA_t^{news} are an S&P macro news index and risk aversion news, each constructed as in Rey and Stavrakeva (2024). $\Delta S\&P_t^{macro,US}$ is constructed by regressing the daily S&P growth rate on a set of contemporaneous and lagged macroeconomic news and summing the daily fitted values of this regression to monthly frequency. RA_t^{news} is the residuals of a daily regression of the risk aversion measure developed by Bekaert et al. (2017) on contemporaneous and lagged macro news, also summed to the monthly frequency. That is, risk aversion news are movements in the risk aversion measure that are orthogonal to contemporaneous and lagged US macroeconomic news at daily frequency. The other regressors include past fund performance in the form of lagged fund i net-of-fee returns, lagged S&P performance, and ROS stock market performance for non-US funds. To increase the number of observations in these regressions, we now define types by $\{Index \times Broad\ Strategy \times ROS\ Currency\}$ with $Index$ being an indicator of index funds.

The subcomponents in equation (28) are then within-fund-type averages of the fund-level fitted values from regression (29) as follows:[39]

$$
\begin{aligned}
\alpha_t^{f,macro,\tau} &= \mu^{f,\tau,macro} \Delta S\&P_t^{macro,US} \\
\alpha_t^{f,risk,\tau} &= \mu^{f,\tau,risk} RA_t^{news} \\
\alpha_t^{f,perform,\tau} &= \sum_{l=1}^{6} \mu_l^{f,\tau,NF} \sum_{k\in\tau} \frac{r_{t-l}^{k,NF}}{|\tau|} + \sum_{l=1}^{6} \mu_l^{f,\tau,US} \Delta p_{t-l}^{SM,US} + \sum_{l=1}^{6} \mu_l^{f,\tau,c} \Delta p_{t-l}^{SM,c} \\
\alpha_t^{f,sentiment,\tau} &= \sum_{k\in\tau} \frac{\mu^{k,f,\tau} + \varepsilon_t^{k,flow}}{|\tau|}
\end{aligned}
$$

The definition of the $\alpha_t^{f,sentiment,\tau}$ term would essentially capture a time fixed effect not explained by the other regressors in regression (29). As such, it is similar to the cross-fund average of the fund flow shocks in Dou et al. (Forthcoming).

If we do not have enough observations within any type of funds to estimate the panel regression (at least 50 funds and 500 fund-time observations), we revert to our simple unweighted within-type average based on the finer type definitions as in the baseline case of Section 3. In our results below, this average variation gets attributed to $\alpha_t^{f,sentiment,\tau}$ with the other subcomponents being set to zero.

Portfolio Weights

Next, we similarly decompose $\alpha_t^{\omega,\tau',j}$ as follows:

$$
\alpha_t^{\omega,\tau',j} = \alpha_t^{\omega,\tau',prices,j} + \alpha_t^{\omega,\tau',firm\ news,j} + \alpha_t^{\omega,\tau',sentiment,j}, \tag{30}
$$

with investor type τ' now defined by the set $\{Index \times Broad\ Strategy \times ROS\ Local\ Currency\}$ and $Index$ being an indicator of index funds.

We construct the subcomponents based on the fitted values in two stages, again restricting attention to the "marginal" trader version of the decomposition. First, we regress the portfolio weight changes on lagged price drivers of expectations. In a second stage, we regress the residual from this regression on own and industry-specific firm news. This will give a conservative estimate of the importance of firm news as any correlation of this news with lagged prices drivers will be

[39] Because regression (29) contains fund-level past returns, $\alpha_t^{f,\tau}$ does not exactly equal the simple within-type, within-month averages $\alpha_t^{f,\tau}$ in the corresponding baseline marginal investors decomposition (estimated in Section E in the Internet Appendix), but they correspond very closely in the data.

attributed to those terms.[40]

The estimation procedure also accounts for the mixed frequency between quarterly earnings report surprise measures of firm news and monthly holdings in a way that retains information about the dynamics of responses to firm news. This is done by estimating separate regressions for months that are concurrent with the earnings report and that are one, two, and three months out from the report where this latter case only occurs for December end-of-quarter reports that are released in January. This approach is quite flexible as it also allows for other terms, like those associated with momentum and reversal, to become relatively less important during months of report releases.

Specifically, we first estimate the following for each p, an index of the timing of months relative to the release months of quarterly reports:

$$\begin{aligned}\frac{\Delta\omega^{i,j,A}_{t(p)}}{\widehat{\omega}^{i,j,A}} &= \mu_1^{i,j,\omega,\tau'} + \sum_{k\in\{Ind,US\}}\sum_{l=1}^{2}\mu^{j,\tau',k,l}\left(\Delta p^{j,USD}_{t(p)-l} - \Delta p^{k,avg}_{t(p)-l}\right)\\ &\quad + \sum_{k\in\{Ind,US\}}\mu^{j,\tau',k,mom}\frac{\sum_{l=3}^{12}\left(\Delta p^{j,USD}_{t(p)-l} - \Delta p^{k,avg}_{t(p)-l}\right)}{10} + \varepsilon^{i,j,\omega}_{1,t(p)},\end{aligned}$$

The first two lags are meant to capture reversal-type strategies while the average price growth rate between months 3 and 12 captures momentum-type strategies. We focus on relative price reversal and momentum (relative to the industry and country-level stock market prices) as the theoretical model we build suggests, which is also consistent with these type of strategies being executed in a long/short manner. We obtain the fitted lagged price terms:

$$\begin{aligned}\alpha^{\omega,\tau',prices,j}_{t(p)} &= \sum_{k\in\{Ind,US\}}\sum_{l=1}^{2}\mu^{j,\tau',k,l}\left(\Delta p^{j,USD}_{t(p)-l} - \Delta p^{k,avg}_{t(p)-l}\right)\\ &\quad + \sum_{k\in\{Ind,US\}}\mu^{j,\tau',k,mom}\frac{\sum_{l=3}^{12}\left(\Delta p^{j,USD}_{t(p)-l} - \Delta p^{k,avg}_{t(p)-l}\right)}{10}.\end{aligned}$$

The second regression is the portfolio weight change less the lagged price terms regressed on principal components of the IBES surprises for firm j (defined as the surprise divided by the dispersion in forecasts which is referred to as SUE score in the IBES data) and the 5 largest other firms in firm

[40] While rational earnings report surprises should be unforecastable by lagged price movements, this is not the case in reality for IBES surprises (see Chan et al. 1996).

j's industry, denoted by the set $J^{j,other}$:

$$\frac{\Delta\omega_{t(p)}^{i,j,A}}{\widehat{\omega}^{i,j,A}} - \alpha_{t(p)}^{\omega,\tau',prices,j} = \mu_2^{i,j,\omega,\tau'} + \sum_{m=1}^{P^j} \mu_{own}^{j,\omega,m,\tau'} PC_{t(p)}^{firm,m,j} + \sum_{j' \in J^{j,other}} \sum_{m=1}^{P^{j'}} \mu_{j'}^{j,\omega,m,\tau'} PC_{t(p)}^{firm,m,j'} + \varepsilon_{2,t(p)}^{i,j,\omega}, \tag{31}$$

from which we obtain the fitted values:[41]

$$\alpha_{t(p)}^{\omega,\tau',firm\ news,j} = \sum_{m=1}^{P^j} \mu_{own}^{j,\omega,m,\tau'} PC_{t(p)}^{firm,m,j} + \sum_{j' \in J^{j,other}} \sum_{m=1}^{P^{j'}} \mu_{j'}^{j,\omega,m,\tau'} PC_{t(p)}^{firm,m,j'} \tag{32}$$

$$\alpha_{t(p)}^{\omega,\tau',sentiment,j} = \sum_{k \in \tau'} \frac{1}{|\tau'|} \left(\mu_2^{i,j,\omega,\tau'} + \varepsilon_{2,t(p)}^{i,j,\omega} \right). \tag{33}$$

$\left\{ PC_{t(p)}^{firm,m,j} \right\}_{m=1}^{P^j}$ are the first P^j principal components of the scaled IBES surprises where P^j is the firm-specific number of components that explain at least 80 percent of the variation of these surprises.[42] Sentiment is captured by the average residual. Once again, if there are not enough observations for a given type of investor-ISIN group (defined as at least 50 funds and at least 500 observations), we use the previous simple average within type defined by $\{Index \times Broad\ Strategy \times ROS\ Local\ Currency\}$ and this variation gets attributed to $\alpha_{t(p)}^{\omega,\tau',sentiment,j}$ with the other subcomponents set to 0 for that type.

Our alternative structural decomposition then consists of substituting the estimates of $\alpha_t^{\omega,\tau',j}$ and $\alpha_t^{f,\tau}$ into equation (22) in the Internet Appendix to construct:

$$\Delta \tilde{d}_t^{f,z,j,NonIndex} = \frac{1}{\Theta^j} \sum_{\tau \in \Upsilon} \left(\sum_{\left\{ i \in \tilde{I} \cap NonIndex \cap \tau | \Delta X_t^{i,j} \neq 0 \right\}} \frac{\mu^{i,j}}{\sum_{i \in \tilde{I}} \mu^{i,j}} \right) \alpha_t^{f,\tau,z},$$

$$\Delta \tilde{d}_t^{f,z,j,Index} = \frac{1}{\Theta^j} \sum_{\tau \in \Upsilon} \left(\sum_{\left\{ i \in \tilde{I} \cap Index \cap \tau | \Delta X_t^{i,j} \neq 0 \right\}} \frac{\mu^{i,j}}{\sum_{i \in \tilde{I}} \mu^{i,j}} \right) \alpha_t^{f,\tau,z},$$

for $z = \{macro, risk, perform, sentiment\}$.

$$\Delta \tilde{d}_t^{\omega,m,j,NonIndex} = \frac{1}{\Theta^j} \sum_{\tau \in \Upsilon} \left(\sum_{\left\{ i \in \tilde{I} \cap NonIndex \cap \tau | \Delta X_t^{i,j} \neq 0 \right\}} \frac{\mu^{i,j}}{\sum_{i \in \tilde{I}} \mu^{i,j}} \right) \alpha_t^{\omega,\tau',m,j},$$

[41] Since the regressors in equations (31) and (33) contain no fund-level information, equation (30) further decomposes the same common component of active funds portfolio weight change as in the corresponding marginal trader decomposition in Internet Appendix Section E.

[42] The news terms in these monthly regressions are observations from the most recent quarterly release.