GCAP Public Security-Level Data on U.S. Fund Holdings

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October 2025

Abstract

We construct representative security-fund-level longitudinal data for the United States using regulatory filings of portfolio holdings from Form N-PORT. We validate our dataset by comparing coverage and composition to official statistics from the Federal Reserve's Financial Accounts of the United States (formerly known as the Flow of Funds) and Treasury International Capital (TIC) System, and to micro-level commercial datasets. We showcase an application by replicating and updating Maggiori, Neiman and Schreger (2020) findings on home currency bias using N-PORT instead of commercial fund holdings data. Our results confirm that N-PORT data offer a comprehensive, reliable, and public source for research in macroeconomics and finance. We make all the security-level data on holdings available in a public repository of the GCAP Lab and provide code for updating the data.

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We thank Max Feng, Angus Lewis, Amanda dos Santos, and participants in the 2025 GCAP Big-Data Initiative in International Macro-Finance for useful comments and suggestions. Our analysis makes use of data that are proprietary to Morningstar and/or its content providers. Neither Morningstar nor its content providers are responsible for any of the views expressed in this article. All code to download, process, and clean SEC Form N-PORT raw files are available at our GitHub repository. For any questions on the data and code please email: info@globalcapitalallocation.com.

1 Introduction

Empirical research in domestic and international macroeconomics and finance increasingly relies on detailed micro-level data. A central goal of this literature is to understand how the portfolio choices of financial intermediaries shape aggregate outcomes, from capital flows and currency markets to financial stability. In addressing these questions, researchers have increasingly found it crucial to access fund-security-level information (Florez-Orrego, Maggiori, Schreger, Sun and Tinda, 2024). Yet this type of data is typically commercial, proprietary, or regulatory data, which increases the barriers to entry for new researchers or those with more limited research budgets (like PhD students). The release of N-PORT data on U.S. mutual fund holdings at the security level is a major step in changing the research landscape. This short paper reviews this new data and provides tools (code, repositories of the data) to make it as easy as possible to use this new data source for research.

Historically, most empirical work on portfolio holdings has drawn on commercial datasets. Prominent examples include the Center for Research in Security Prices (CRSP), Morningstar, FactSet Ownership, and Lipper (now part of London Stock Exchange Group, formerly Refinitiv and part of Thomson Reuters). These sources provide detailed portfolio- or fund-level information, but extensive coverage of the fund universe is often an issue, as well as the monetary cost of accessing the commercial data.

By contrast, official macroeconomic datasets such as the U.S. Treasury International Capital (TIC) data, the IMF's Portfolio Investment Positions by Counterpart Economy (formerly Coordinated Portfolio Investment Survey, or CPIS), and the Federal Reserve's Flow of Funds[1] are authoritative and publicly available, but necessarily aggregated to preserve confidentiality. They provide total U.S. holdings of foreign bonds, for example, but not the distribution of those holdings across funds or the characteristics of individual securities. As a result, researchers relying only on aggregate sources cannot study

[1] Throughout the paper, we use "Flow of Funds" and "Financial Accounts of the United States" interchangeably. The latter is the current official name adopted by the Federal Reserve, while "Flow of Funds" remains in common use in the academic literature.

heterogeneity across funds, portfolio tilts by security or currency, or higher-frequency dynamics. When these datasets are built based on underlying security-level data (such as TIC in the U.S., or the Security Holding Statistics (SHS) at the European Central Bank (ECB)), researchers could aim to access the underlying data in partnership with the relevant official institutions. This avenue has also proved beneficial for research, but comes with its own limits and barriers to access and confidentiality.

The introduction of Form N-PORT by the Securities and Exchange Commission (SEC) offers a new option: comprehensive security-level data for the near universe of U.S. mutual funds. The data is free to access and available to the public. Since 2019, all U.S.-registered mutual funds have been required to disclose detailed portfolio holdings on a quarterly basis, filed electronically and made publicly available through the SEC's Electronic Data Gathering, Analysis, and Retrieval (EDGAR) system. Each filing reports the full universe of securities held by the fund, including identifiers (CUSIP, ISIN, LEI)[2], issuer country, currency denomination, maturity, coupon, and market value. N-PORT thus provides a comprehensive, security-level view of the entire U.S. mutual fund industry, covering more than 11,000 funds with over USD 35 trillion in assets as of the end of 2024, while remaining entirely public.

In this short paper we have three objectives. First, we show how to construct a nationally representative longitudinal dataset from raw N-PORT filings. Second, we validate its representativeness relative to both official and commercial benchmarks. Third, we showcase a specific application in international macro-finance. Most importantly, we release a fully reproducible pipeline for bulk downloading, parsing, cleaning, and harmonization of N-PORT filings; code and documentation are in our GitHub repository.

We find that N-PORT replicates the major stylized facts of U.S. mutual funds. Their aggregate assets and composition align with Flow of Funds, their foreign positions and currency exposures match TIC, and their security-level holdings are consistent with Morn-

[2]CUSIP is a nine-character code for securities used primarily in the United States and Canada, assigned by CUSIP Global Services (CGS). ISIN is a twelve-character global security code defined by ISO 6166 and often builds on the local identifier. LEI is a twenty-character code for legal entities defined by ISO 17442. CUSIP and ISIN identify securities (e.g., stocks, bonds), while LEI identifies organizations (e.g., bond issuers). Learn more at cusip.com, isin.org, and gleif.org

ingstar data for the United States. In our economic application, we replicate the Maggiori, Neiman and Schreger (2020) findings on home currency bias: U.S. funds systematically overweight USD-denominated bonds relative to otherwise similar foreign-currency bonds. These findings highlight the value of N-PORT as a foundation for research in international macroeconomics and finance.

2 Data

Form N-PORT is the SEC's mandatory reporting form for registered management investment companies and exchange-traded funds (ETFs), excluding money market funds and small business investment companies. Since 2019, following the Investment Company Act rule 30b1-9, funds have been required to maintain the information for each month and to file the three months of a fiscal quarter within sixty days of quarter end through EDGAR. Only the last month of each quarter is disseminated publicly, and amendments can be filed at any time and replace the entire submission. In effect, N-PORT produces a point-in-time regulatory census of U.S.-domiciled mutual funds and ETFs, with a documented amendment trail and stable legal identifiers.

Because the Commission publishes the data as flat, tab-delimited files extracted from the as-filed XML, the structure is simple to use yet rich in detail.[3] Conceptually, the public files organize along two dimensions (i.e., submission and position), with a set of satellite tables extending information to each.[4] Along the submission dimension, ACCESSION_NUMBER uniquely identifies a filing and ties together filing metadata (SUBMISSION), registrant identification (REGISTRANT), and fund-level metrics (FUND_REPORTED_INFO). Submission-based datasets offer a variety of fund statistics, including interest-rate risk, securities lending, monthly returns, and value-at-risk measures, each of which is likewise keyed by ACCESSION_NUMBER.

[3] Throughout, we typeset variables in small caps (e.g., ACCESSION_NUMBER, HOLDING_ID, REPORT_DATE) and N-PORT dataset names in sans serif (e.g., SUBMISSION, REGISTRANT, FUND_REPORTED_INFO). With that convention, it is helpful to understand how the data is organized across and within files.

[4] For the complete schema and data definitions, see the U.S. Securities and Exchange Commission's official documentation at sec.gov/nport.

Along the position or holding dimension, HOLDING_ID indexes each record in the schedule of investments (FUND_REPORTED_HOLDING) for a given ACCESSION_NUMBER. It is a filing-specific position key: two funds that hold the same instrument will have distinct HOLDING_IDs, and the same fund will receive new HOLDING_IDs in different filings. The HOLDING_ID then anchors position-level subsidiaries that supply additional details. Examples are security identifiers (IDENTIFIERS) and instrument-specific characteristics such as maturity date (DEBT_SECURITY), repurchase rate (REPURCHASE_AGREEMENT), collateral category and amount (REPURCHASE_COLLATERAL), and identifier of derivative counterparty (DERIVATIVE_COUNTERPARTY). This two-key structure makes the dataset easy to work with: ACCESSION_NUMBER takes any position back to its fund and filing vintage, while HOLDING_ID gathers all attributes for that position in one place.

The content of each holding is standardized by the form, which in turn simplifies merging and aggregation. Every record carries issuer-level information (name and, when available, LEI), multiple security identifiers (CUSIP and at least one of ISIN, ticker, or another unique security identifier), the amount held with units, the currency of denomination, the U.S.-dollar value together with the exchange rate used, and the holding's share of fund net assets. In addition, funds report a payoff side (long or short), categorical classifications for asset and issuer type, an ISO country for the issuer's organization, a restricted-security flag, and the ASC-820 fair-value level. Open-end funds also assign liquidity buckets. Debt, repo, and derivative instruments extend the core record with maturity and coupon information, counterparty LEIs, contract terms, and, when relevant, index or basket descriptions, all linked back to the spine by HOLDING_ID. As a result, each filing contains sufficient information to reconstruct both the fund-level balance sheet and the security-level schedule of investments.

However, not all fields are public. Even in the disseminated third month, the SEC withholds certain liquidity, VaR, and delta fields, as well as country-of-risk and economic-exposure items, and some details about miscellaneous securities. The first two months of the quarter are never released at the fund level. We treat these omissions as missing by design rather than missing at random and structure our aggregation accordingly.

Given this organization, the logic for constructing the panel dataset follows straightforwardly. We treat FUND_REPORTED_HOLDING as the position's anchor dataset, attach IDENTIFIERS by HOLDING_ID, and then integrate data from SUBMISSION, REGISTRANT, and FUND_REPORTED_INFO by ACCESSION_NUMBER. Where necessary, for example, to recover debt characteristics such as maturity date or coupon rate, we extend the position with its one-to-one mappings, again keyed by HOLDING_ID. Because the posted files are "as filed," we first consolidate within-quarter amendments and retain the latest portfolio per fund so that each position appears once per report date.

Processing choices follow from the same principles. We read the Commission's flat files as published, standardize identifiers to their canonical formats (ISIN 12 characters in uppercase with no punctuation, CUSIP 9 characters with a verified check digit, LEI 20 characters in uppercase), and harmonize country and currency codes to ISO-3166 (alpha-2) and ISO-4217 (alpha-2 country code and the initial of the currency's main unit), respectively. We validate ISIN and CUSIP check digits, carry forward the reported keys without fuzzy re-keying on names, and standardize issuer strings while preserving legal suffixes and linking to LEIs where available. We then index observations by REPORT_DATE and retain accession numbers to track dissemination vintages and amendments. Consequently, the final panel is a fund–security–quarter dataset that preserves point-in-time consistency and scales cleanly. The same structure supports multiple aggregation methods, including issuer, country, currency, maturity, counterparty, instrument type, and fair-value level.

Although the public schema supports many such dimensions, our analysis ultimately collapses the data to two of them. First, a fund–quarter panel derived from the headers provides net assets, flows, and basic characteristics keyed by ACCESSION_NUMBER and REPORT_DATE. Second, a fund–security–quarter panel built from the holdings spine and identifiers provides positions at the instrument level. This reduction preserves the ability to re-aggregate along issuer, country, or currency when needed while keeping the empirical design transparent and replicable.[5]

[5]All code to download, parse, and construct the panel is available in our GitHub repository.

2.1 Coverage

The public N-PORT dataset begins in October 2019 and is updated quarterly. It spans the entire universe of U.S.-domiciled open-end mutual funds and ETFs, excluding only money market funds.[6] Compared to commercial databases, N-PORT captures both flagship funds and small niche strategies, ensuring a near-complete picture of the industry.[7] Coverage extends across the main asset classes held by registered funds, including equities, corporate and government bonds, structured products, derivatives, and other alternative instruments.

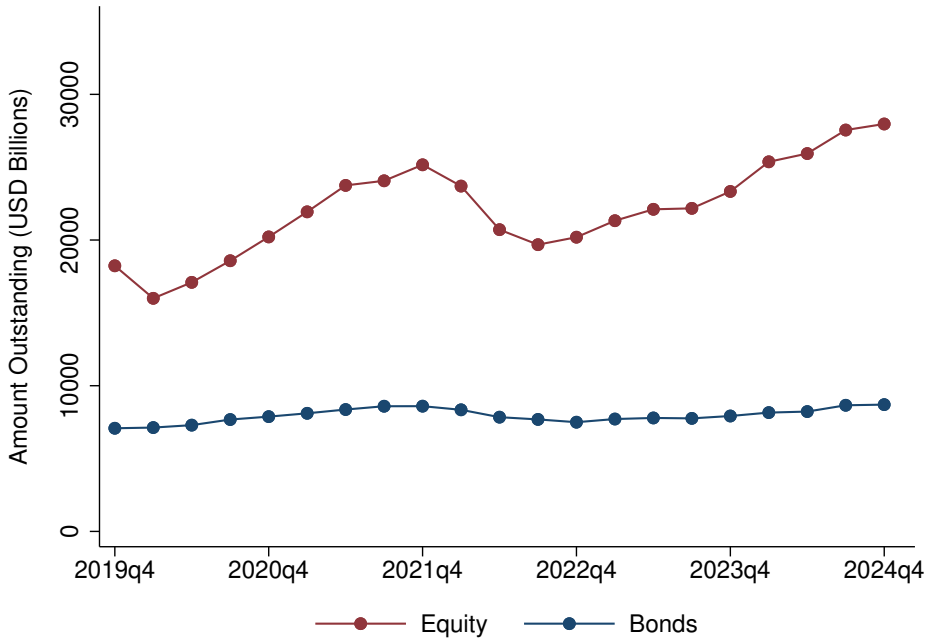
The scale and quality of N-PORT reporting are substantial. Each quarterly release contains on the order of four to five million fund–security observations, corresponding to approximately 12,000–13,000 reporting funds. This density permits analysis at multiple levels of aggregation, from the overall footprint of U.S. mutual funds in global bond markets to the behavior of individual fund families, investment strategies, or issuers. Figure 1 documents the aggregate coverage, showing that N-PORT consistently captures more than USD 20 trillion in equity holdings and USD 7–10 trillion in bond holdings between 2019 and 2024, with clear cyclical variation over the sample period.

Table 1 provides further evidence on the integrity of the dataset. Value-weighted coverage across key identifiers (i.e., country, currency, security ID, ISIN, and issuer) exceeds 95 percent in all quarters, with ISIN and security IDs improving over time. This high level of identifier completeness enables reliable aggregation of holdings by issuer, country, currency, and maturity, and facilitates merging with external datasets without substantial loss of coverage. In light of both its scale and data quality, N-PORT offers a versatile platform for research well beyond the aggregate benchmarks or security-level regressions

[6] Money market mutual funds report analogous monthly portfolio holdings on SEC Form N-MFP. Filings cover positions as of the last business day of the prior month and must be filed no later than the fifth business day of the following month. The SEC releases the public data on a 60-day delay, and machine-readable flat files extracted from EDGAR are posted at https://www.sec.gov/data-research/sec-markets-data/dera-form-n-mfp-data-sets. See the form and instructions at https://www.sec.gov/files/formn-mfp.pdf.

[7] We say *near-complete* because N-PORT excludes money market funds and small business investment companies, covers only U.S.-registered funds, and some fields are withheld from public release (e.g., derivative transactions, specified VaR and delta metrics, country of risk and economic exposure, and liquidity classifications). Our masterfiles consolidate amendments and incorporate late filings to minimize vintage gaps.

Figure 1: Aggregate Equity and Bond Holdings in N-PORT



highlighted here, enabling investigations into a broad spectrum of questions in domestic and international macroeconomics and finance.

2.2 Comparison with Other Datasets

Relative to official sources, N-PORT provides security-level, fund-identified positions that are unavailable elsewhere. The Federal Reserve's Flow of Funds quarterly reports sectoral stocks and flows by broad instrument category (e.g., mutual fund sector's holdings of Treasuries, corporates, and equities), but it does not disclose security identifiers, issuer details, currencies, or fund-level positions. By contrast, Treasury's TIC data measures cross-border portfolios via the SHC/SHCA surveys and related reports; annual public tables provide aggregates by country of issuer, security type, and (only for the case of long-term debt) currency groups and holder categories, but the underlying security- or investor-level microdata is confidential. For mutual funds over recent years, N-PORT offers a useful addition by providing security-level, fund-identified holdings, both domestic and foreign, enabling granular analyses that are otherwise infeasible with publicly available data.

Table 1: Summary Statistics

Quarter	N (#)	Funds (#)	Total (USD B)	Country	Currency	Security ID	ISIN	Issuer
				Value-Weighted Coverage (%)				
2019q4	4,200,922	11,059	25.5	99.7	99.9	99.3	94.6	99.9
2020q1	3,988,448	11,686	23.0	99.7	99.9	99.2	95.8	99.9
2020q2	4,516,646	12,195	24.6	99.8	99.9	99.1	95.3	99.9
2020q3	4,297,607	12,116	26.4	99.8	99.9	99.1	96.0	99.9
2020q4	4,344,117	12,023	28.3	99.8	99.9	99.1	96.0	99.9
2021q1	4,131,102	12,081	30.3	99.7	99.9	99.1	95.9	99.9
2021q2	4,487,949	12,114	32.4	99.3	99.9	99.0	96.0	99.9
2021q3	4,381,809	12,169	33.0	99.9	99.9	99.0	96.2	99.9
2021q4	6,314,913	12,267	34.1	99.9	99.9	99.1	96.2	99.9
2022q1	5,150,736	12,389	32.3	99.9	99.9	99.1	96.5	99.9
2022q2	8,904,819	12,450	28.9	99.8	99.9	99.0	96.3	99.9
2022q3	5,204,129	12,510	27.6	99.9	99.9	99.1	96.5	99.9
2022q4	6,237,100	12,551	27.9	99.9	99.9	99.1	96.5	99.9
2023q1	5,165,422	12,610	29.3	99.9	99.9	99.2	96.6	99.9
2023q2	5,859,300	12,575	30.2	99.9	99.9	99.2	96.6	99.9
2023q3	5,040,847	12,584	30.2	99.9	99.9	99.1	96.6	99.9
2023q4	6,187,696	12,584	31.5	99.9	99.9	99.1	96.7	99.9
2024q1	5,037,258	12,629	33.8	99.8	99.9	99.2	96.7	99.9
2024q2	5,947,488	12,598	34.5	99.9	99.9	99.1	96.7	99.9
2024q3	5,028,131	12,719	36.5	99.9	99.9	99.1	96.8	99.9
2024q4	5,890,688	12,807	37.0	99.8	99.9	99.1	96.8	99.9

Relative to commercial holdings vendors, N-PORT is a regulatory, public, and free source for the U.S.-registered mutual fund universe. Providers including Morningstar, Lipper, and FactSet Ownership distribute security-level fund holdings as subscription products that offer longer histories, many more countries, and more characteristics of the funds or securities. Yet, for U.S. open-end funds and ETFs, the N-PORT filings are the statutory source, filed on a fixed schedule with an amendment trail and stable legal identifiers (CIK, LEI, ISIN, CUSIP). In practice, N-PORT allows bulk downloading and unrestricted redistribution of the raw filings, which directly supports replication. Commercial platforms require paid licenses, typically restrict bulk extraction through user-interface quotas or API rate limits, and prohibit redistribution of raw data. Commercial histories can also reflect backfills or carry-forwards rather than point-in-time snapshots, and cov-

erage may be uneven for small or specialized vehicles.

The limitations of N-PORT are well defined: U.S. domicile only, public dissemination once per quarter for the last month, and a time series that begins only in 2019. Commercial vendors can extend beyond that envelope with pre-2019 histories, non-U.S. domiciles, and convenience features such as standardized classifications and duration or rating aggregates. Our approach in this short paper adopts N-PORT as the primary source because it permits open bulk access, preserves point-in-time vintages via accession numbers, and enables full auditability. Where scope requires information that N-PORT does not provide, we treat vendor inputs as optional add-ons and document any use explicitly, so that our key figures and tables remain reproducible without a subscription and without violating download or redistribution limits.

3 Validation: Representativeness of N-PORT

To assess the representativeness of N-PORT, we benchmark its coverage against established official and commercial sources. We begin with the domestic side, comparing aggregate mutual fund positions in N-PORT to the Federal Reserve's Financial Accounts of the United States. We then turn to international positions, contrasting N-PORT's security-level foreign-issued holdings with the cross-border aggregates published annually in the Treasury's TIC data. Finally, we evaluate N-PORT against commercial microdata by comparing its security-level U.S. mutual fund holdings to those reported by Morningstar.

3.1 Financial Accounts of the United States

To evaluate how representative N-PORT is of the U.S. mutual fund sector, we aggregate the holdings by type of security and compare them with the corresponding series from the Federal Reserve's Flow of Funds. The Financial Accounts are the official source of sectoral balance sheets in the United States, constructed from a combination of regulatory filings, surveys, and estimation procedures. For mutual funds, the benchmark series are

reported in Table L.122 (Levels, Mutual Funds), which can be further decomposed into equity holdings (Table L.223), debt securities (Table L.208), corporate and foreign bonds (Table L.213), and Treasury securities (Table L.210). These aggregates represent the reference point against which N-PORT should be validated.

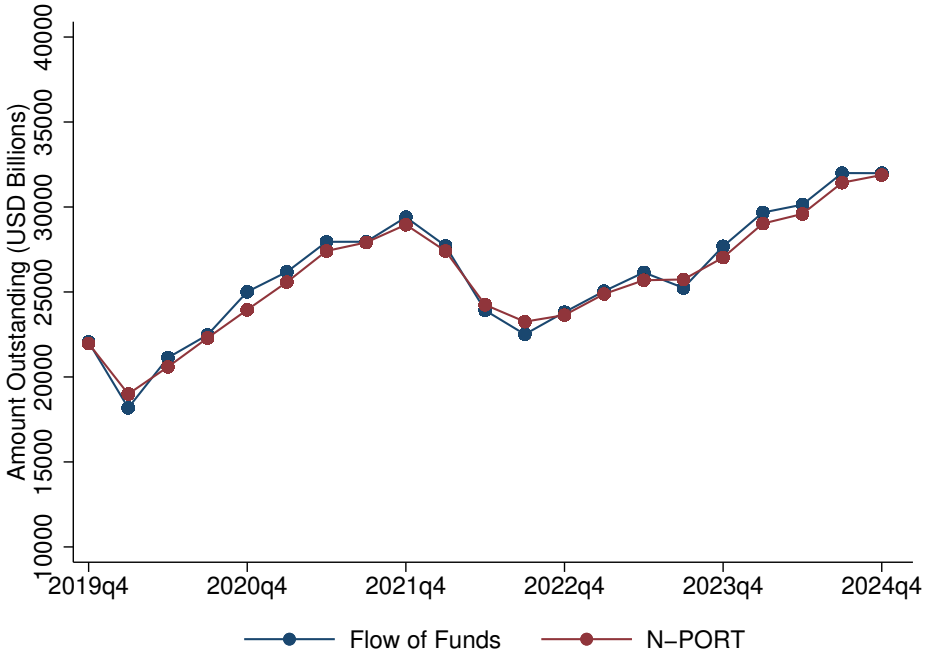
Figure 2 plots the comparisons. At the broadest level, N-PORT reproduces the path of total mutual fund financial assets with striking precision (Figure 1a). Both series trace the rapid expansion of the sector in 2020–21, the subsequent drawdown during 2022, and the recovery through 2023–24. The alignment is not only in levels but also in cyclical turning points, underscoring that the N-PORT's census approach captures the same macro dynamics as the Fed official accounts.

Disaggregating by asset class reveals a similar degree of correspondence. For equities, N-PORT and the Financial Accounts move almost one-for-one, with only minor deviations (Figure 1b). For debt instruments, the fit is equally close, with N-PORT capturing both the gradual build-up of positions through 2020–21 and the retrenchment in 2022 (Figure 1c). When we focus more narrowly on Treasuries, the two datasets again overlap closely, but we note that N-PORT is above the Flow of Funds systematically in recent years, a pattern that deserves more scrutiny (Figure 1d). Corporate and foreign bonds display the same pattern: N-PORT mirrors the official totals both in the steady increase through 2020–21 and the subsequent flattening, with level differences that are negligible in aggregate terms (Figure 1e).

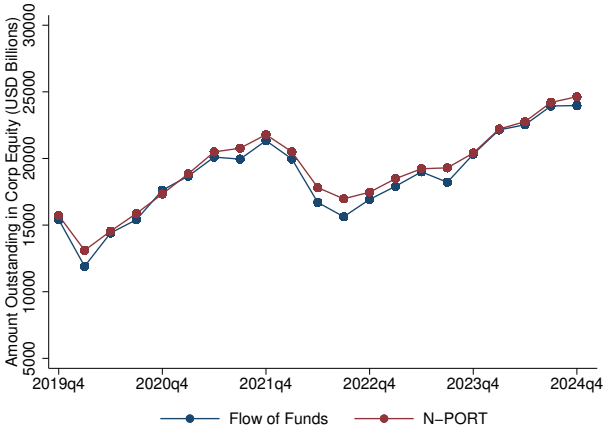
Overall, the benchmarking exercise confirms that N-PORT replicates the Financial Accounts across the main asset classes of U.S. mutual funds. The microstructure of N-PORT scales up to sectoral totals that are virtually indistinguishable from the Federal Reserve's official statistics. This validation exercise demonstrates that researchers can use N-PORT both for aggregate analysis, confident that totals are aligned with official benchmarks, and for fine-grained investigations at the security or fund level, which are beyond the scope of the Flow of Funds.

Figure 2: N-PORT *versus* Flow of Funds: U.S. Mutual Fund Holdings

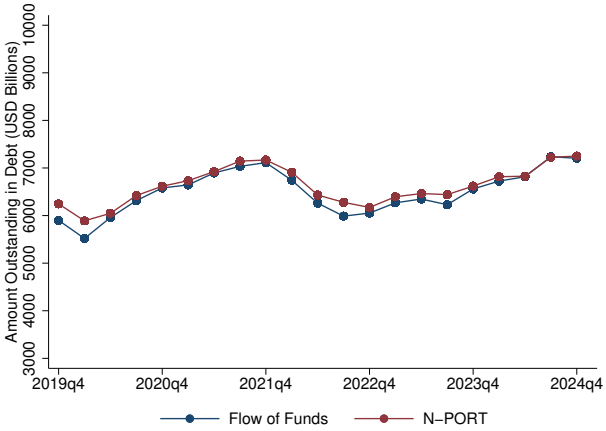
(a) Total Assets



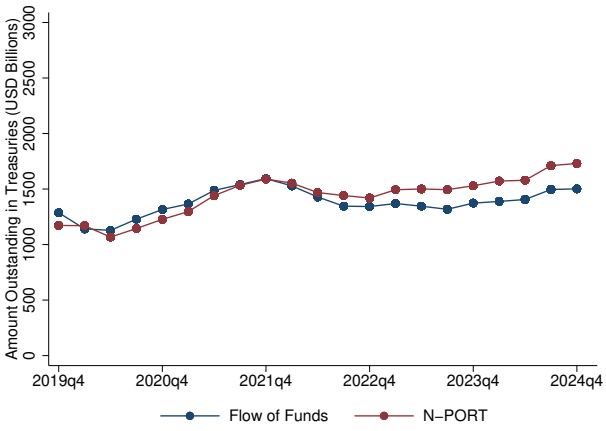
(b) Equity



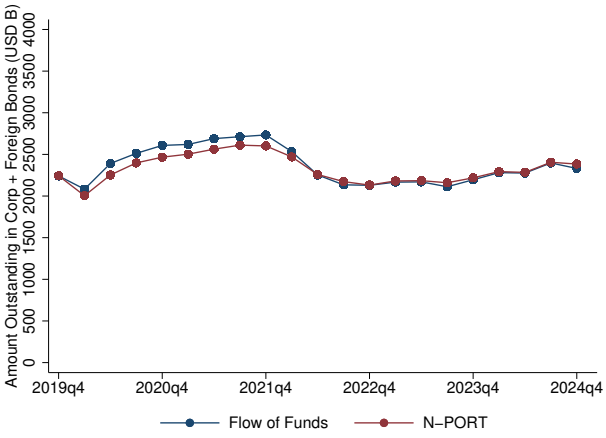
(c) Debt



(d) Treasuries



(e) Corporate and Foreign Bonds



3.2 Treasury International Capital (TIC) System Data

We next benchmark N-PORT against the U.S. Treasury International Capital system, the official source on U.S. holdings of foreign securities. The TIC annual survey (SHC/SHCA) reports positions in foreign equities and long-term debt instruments, disaggregated by holder sector. Of particular relevance is the mutual fund sector, which we use as the reference point for evaluating N-PORT's coverage of cross-border portfolios. TIC also publishes breakdowns by currency of denomination for long-term debt (USD, EUR, JPY, GBP, and an "other" residual category) and by issuer country for equities. To construct comparable aggregates from N-PORT, we use the security-level fields on issuer country and currency. Because TIC does not disclose a fully disaggregated set of currencies, we collapse residual categories into "other" for consistency, and in some cases exclude the USD to facilitate cross-currency comparisons.

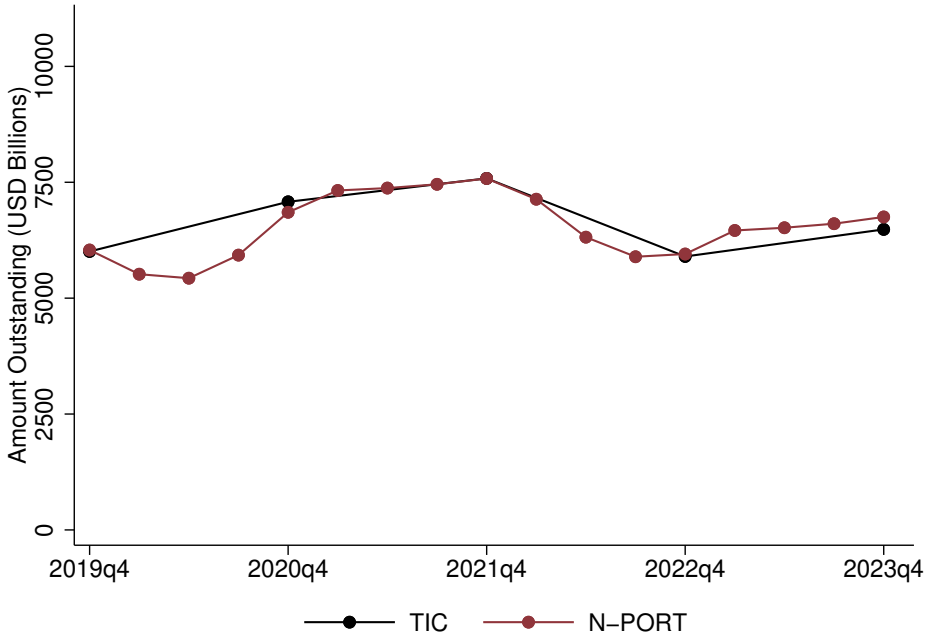
Figure 3 shows that N-PORT closely tracks TIC aggregates for U.S. mutual funds' foreign portfolios. At the top level, total foreign assets (Figure 2a) line up almost exactly across the two datasets, with both capturing the strong expansion of foreign positions through 2021 and the subsequent retrenchment in 2022. The alignment extends to the asset-class split: N-PORT and TIC display nearly identical dynamics in foreign equity (Figure 2b) and foreign debt (Figure 2c).

Figure 4 places mutual funds in the broader context of U.S. investors. The TIC decomposition by holder sector shows that mutual funds are the largest single holder group of foreign securities, accounting for roughly half of U.S. positions. The remainder is distributed across pension funds, insurers, banks, and other financial and nonfinancial investors, none of which individually approach the scale of mutual funds. This confirms that N-PORT covers the dominant institutional channel through which U.S. investors hold foreign securities, even though it is not exhaustive of U.S. cross-border portfolios.

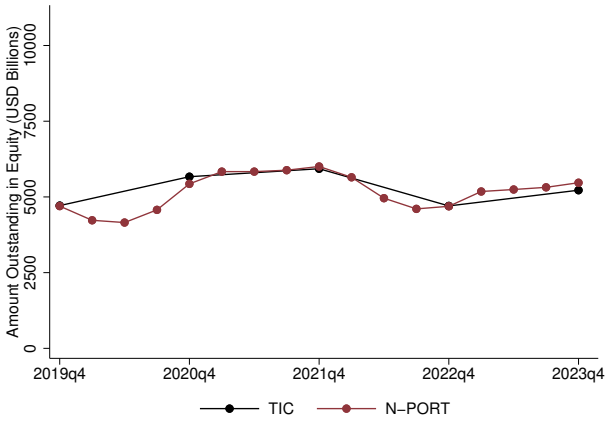
The compositional comparisons in Figure 5, Figure 6 and Figure 7 reinforce the close match. For U.S. mutual funds' holdings of foreign debt by currency, N-PORT reproduces the TIC shares almost exactly, with points lying along the 45-degree line. When USD-

Figure 3: N-PORT *versus* TIC: U.S. Mutual Fund Holdings of Foreign Securities

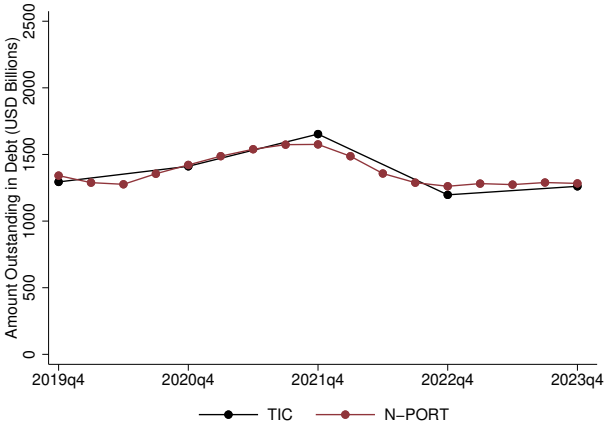
(a) Foreign Assets



(b) Foreign Equity



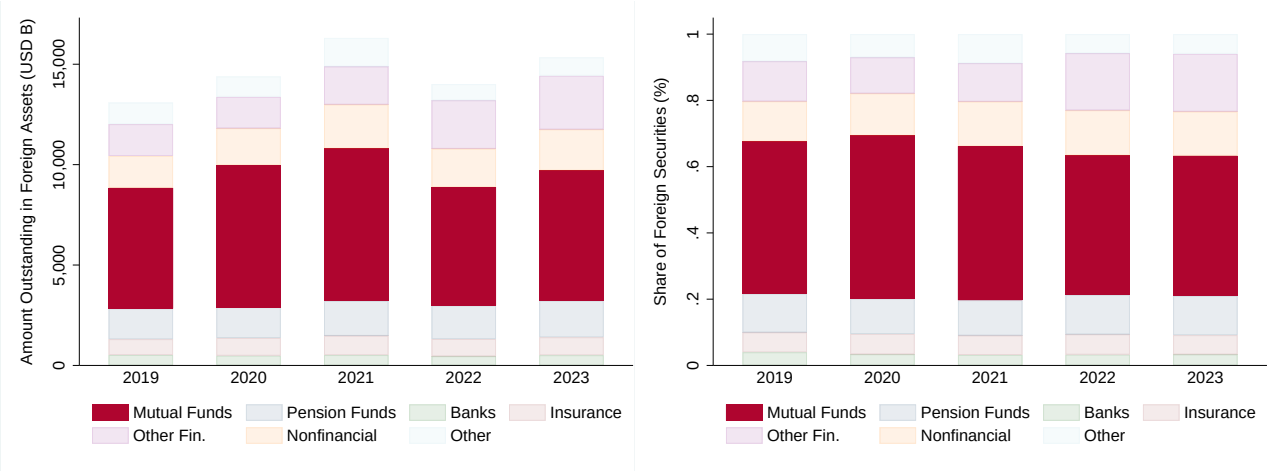
(c) Foreign Debt



denominated instruments are excluded, the alignment persists across the major international currencies, with only modest dispersion in the residual "other" category. For total U.S. foreign debt holdings by currency, the pattern is the same: N-PORT aggregates lie nearly on top of the TIC benchmarks both including and excluding the USD (Figure 6). Turning to equities, the comparison by issuer country shows a similarly tight relationship, although the Cayman Islands appear as an outlier due to their role as a domicile for offshore funds and special purpose vehicles (Figure 7). Excluding the Caymans, the fit

Figure 4: TIC: U.S. Holdings of Foreign Securities by Holder

(a) U.S. Billions (b) Share



across major markets (e.g., Japan, the United Kingdom, France, Canada, and Germany) is very close, with observations clustered along the 45-degree line.

Taken together, these exercises demonstrate that N-PORT replicates the TIC survey totals not only in the aggregate but also in the distribution of foreign securities by currency and by issuer country. Given that TIC is the official benchmark, the strong concordance validates N-PORT as a reliable micro-level source for analyzing the international portfolios of U.S. mutual funds.[8] Moreover, by providing quarterly security-level observations, N-PORT extends the TIC system's annual snapshots into a higher-frequency panel with much richer fund- and security-level detail.

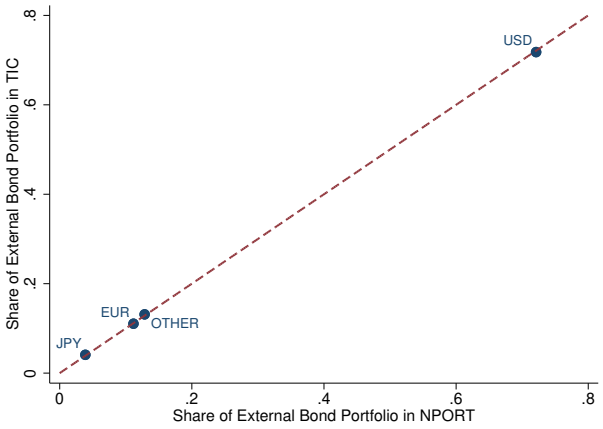
3.3 Morningstar

Finally, we compare N-PORT with Morningstar, a widely used commercial database of fund characteristics and security-level portfolio holdings with global coverage (we used these data frequently in our own work, for example in Maggiori et al. (2020) and Coppola et al. (2021)). Morningstar compiles portfolio holdings data from regulatory filings and manager disclosures, and these data are a standard input in academic and industry research. To assess consistency at the most granular level, we aggregate security-

[8]For European data, our own collaboration with the ECB in Beck et al. (2024) uses the ECB's SHS data to study the geography of capital allocation across the euro area, illustrating the type of analysis enabled by security-level regulatory datasets.

Figure 5: N-PORT *versus* TIC: U.S. Mutual Fund Holdings of Foreign Debt by Currency

(a) All Currencies



(b) Excluding USD

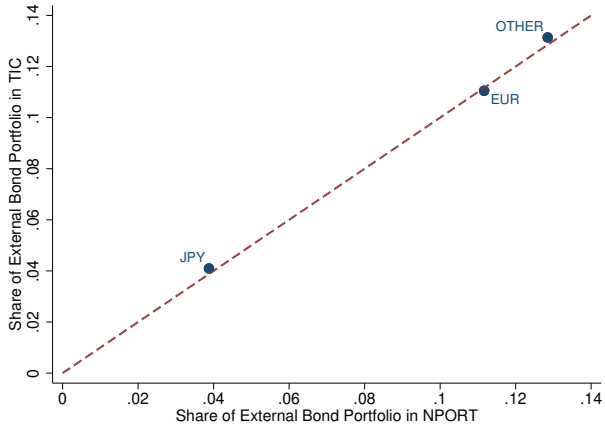
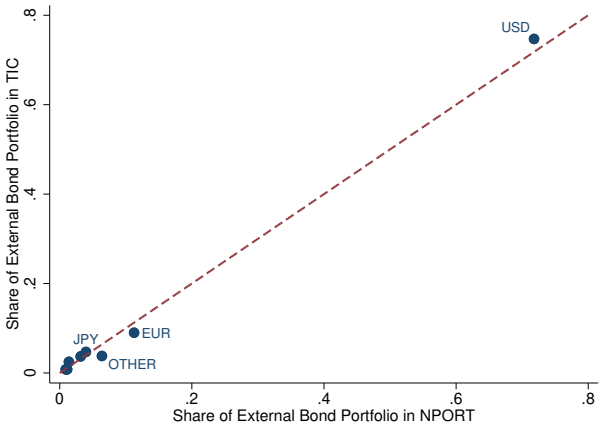


Figure 6: N-PORT *versus* TIC: U.S. Holdings of Foreign Debt by Currency

(a) All Currencies



(b) Excluding USD

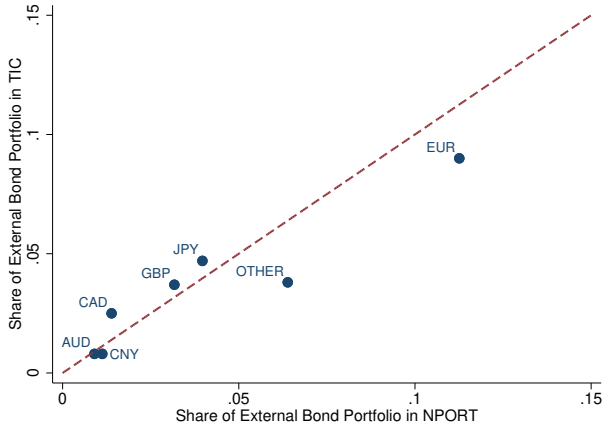
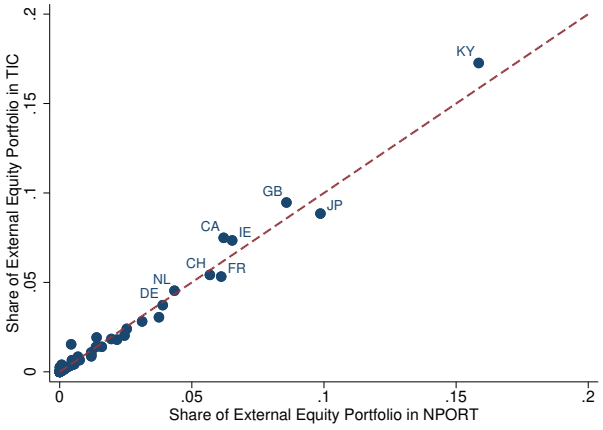


Figure 7: N-PORT *versus* TIC: U.S. Holdings of Foreign Equity by Country

(a) All Countries



(b) Excluding Cayman Islands

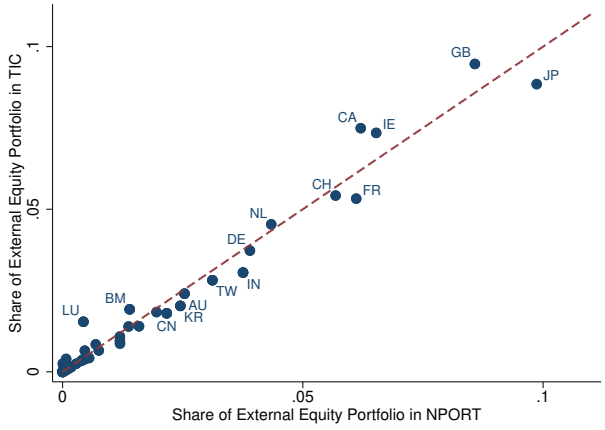
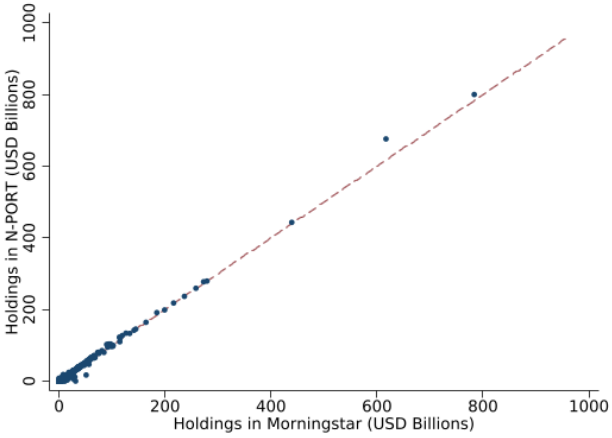
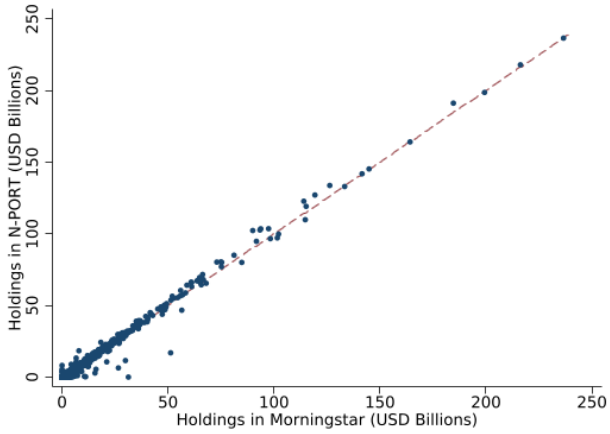


Figure 8: N-PORT *versus* Morningstar: U.S. Mutual Fund Holdings by Security

(a) All Assets



(b) Smallest Quarter



level holdings across mutual funds and ETFs domiciled in the United States within each source and benchmark the two cross sections security by security. This exercise is particularly challenging because it matches the position of each instrument across millions of fund–security observations rather than only at the aggregate or asset-class level.

The left panel of Figure 8 plots total holdings by security in N-PORT against Morningstar at the International Securities Identification Number (ISIN) level for the last quarter of 2021. Observations lie very close to the 45-degree line, indicating very close alignment of the two sources across the distribution. The same pattern holds in other quarters, and this agreement is informative because the match operates at the instrument level after summing across all funds within each dataset. The right panel restricts attention to the smallest quartile of securities by value to reduce the visual dominance of a few large positions. The relationship remains strong in this lower tail, indicating that coverage is aligned beyond the largest holdings.

These results show that N-PORT stands alongside a leading commercial source at the security level for assets held by mutual funds and ETFs domiciled in the United States. We then evaluate whether N-PORT aligns well with the domestic asset allocation reported by Morningstar, which is a primary point of contact between the two sources. For each quarter, we define domestic status on a residency basis. We associate each security with the country in which its immediate issuer is organized, and we restrict both datasets to

funds that are domiciled in the United States. We adopt the residency definition as our baseline because the N-PORT field INVESTMENT_COUNTRY identifies the country where the issuer is organized, which aligns directly with the residency concept.

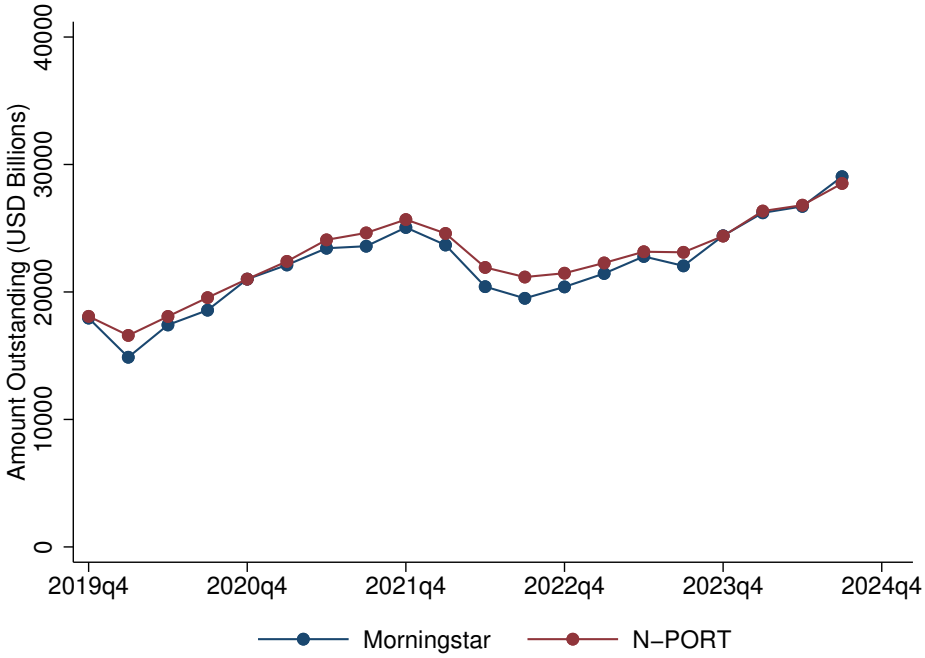
Figure 9 compares the amount of securities issued in the U.S. held by mutual funds and ETFs domiciled in the U.S. in N-PORT and in Morningstar. The top panel shows that the aggregate series move nearly one-for-one from 2019 to 2024, consistent with the Financial Accounts comparison in Figure 2. N-PORT is modestly above Morningstar in most quarters, with small and stable differences relative to the scale of domestic assets, a pattern consistent with comprehensive coverage of smaller funds and the incorporation of late amendments in the regulatory filings.

The bottom panels split the aggregate into equity and debt. The equity series track each other closely, and the small gaps that remain are consistent with the two sources using different portfolio reporting dates within the same quarter. For debt, levels are modestly higher in N-PORT, which is consistent with more complete coverage of smaller fixed-income funds and with the incorporation of late amendments. Taken together, the figures show that N-PORT reproduces Morningstar's domestic footprint in total and within the two broad asset classes, which provides a clear foundation for the composition analysis that follows.

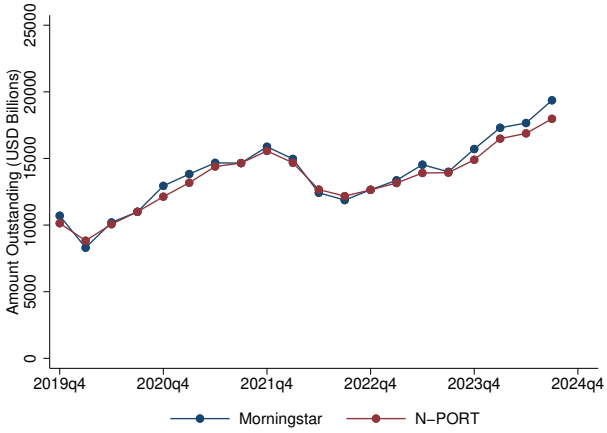
To move from totals to composition for domestic assets, we construct quarterly shares within each asset class and source. Asset-class information is available for every holding in both datasets. For each security, we assign its asset class using Morningstar data when available, otherwise N-PORT, relying exclusively on these two sources. Figure 10 reports the composition of domestic debt by bond type from 2019 to 2024. Both datasets are harmonized into five mutually exclusive groups: Sovereign (U.S. Treasury), Local Government (state and municipal issuers), Corporate (financial and nonfinancial issuers), Asset-Backed Securities (securitized products, including mortgage-backed and other asset-backed instruments), and a small residual category labeled Other. For each quarter and source, the share for a group equals the value of domestic debt in that group divided by the total value of domestic debt. The two series align closely at all dates. Sovereign and Corporate

Figure 9: N-PORT *versus* Morningstar: U.S. Mutual Funds Domestic Holdings

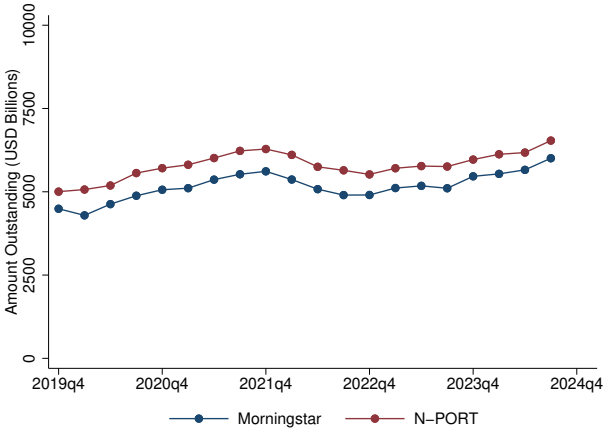
(a) Total Securities



(b) Equity



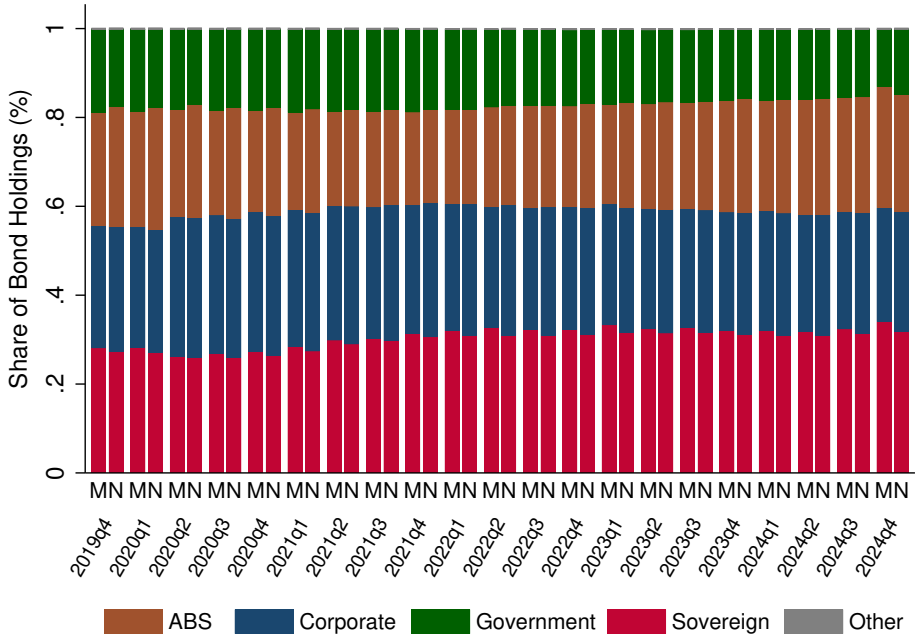
(c) Debt



account for the largest portions throughout the sample, Asset-Backed Securities is a material third component, Local Government is smaller, and the residual category remains minimal. Quarter by quarter, the timing and direction of changes in the shares are nearly identical in the two sources.

Figure 11 reports the composition of domestic equity by sector over the same period. The procedure follows the same approach as in the asset-class analysis, but sector information is available only in the commercial data. Sector codes are reconciled to a

Figure 10: N-PORT *versus* Morningstar: Domestic Debt Composition

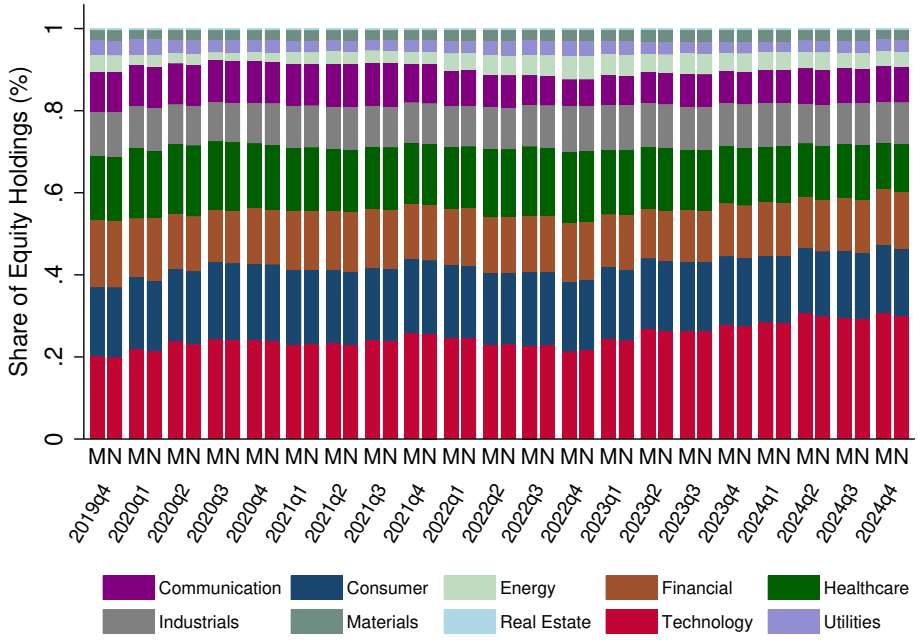


Notes: M denotes Morningstar and N denotes N-PORT. The figure shows the share of domestic debt held by U.S. mutual funds in each bond category relative to total domestic debt.

common broad taxonomy: Communication, Consumer (pooling Consumer Discretionary and Consumer Staples), Energy, Financial, Healthcare, Industrials, Materials, Real Estate, Technology, and Utilities. For each quarter and source, the sector share equals the value of domestic equity in that sector divided by the total value of domestic equity. The sectoral distributions are very similar in the two datasets. Technology and Consumer are the largest domestic weights across the sample, followed by Financial and Healthcare. Industrials is next, while Materials, Energy, Real Estate, and Utilities appear as smaller single-digit shares. The time-series evolution, including the increase in the technology weight after 2020 and its partial moderation thereafter, is nearly identical in the two sources.

Taken together with the level comparison above, these composition results show that N-PORT compares well with commercial data for domestic assets not only in aggregate but also within the bond and equity groupings analyzed. The modest level wedge in fixed income documented in Figure 9 is not concentrated in a single bond type but is spread proportionally across groups, which is consistent with comprehensive statutory coverage of smaller fixed-income funds and late amendments in the regulatory filings.

Figure 11: N-PORT *versus* Morningstar: Domestic Equity Composition by Sector



Notes: M denotes Morningstar and N denotes N-PORT. Sector codes are harmonized to ten broad categories: Communication, Consumer (pooling Consumer Discretionary and Consumer Staples), Energy, Financial, Healthcare, Industrials, Materials, Real Estate, Technology, and Utilities. Each bar represents the share of total domestic equity held by U.S. mutual funds in that sector.

We conclude that N-PORT is a reliable source when compared with both official and commercial data. In reverse, we also conclude that a leading commercial provider like Morningstar offers mutual fund and ETF data that compares well with a newly available regulatory source in the US. To the extent that N-PORT is not currently directly an input into the compilation of official or commercial data, it is likely that it will be integrated in the future.[9] As that happens, the public version of N-PORT will provide an easy way for researchers to disaggregate official statistics down to the security level and confirm research results with publicly available subsets of the data.

4 Application

Having validated N-PORT data against official aggregates and leading commercial sources, we provide a proof of concept for usage in academic research following Maggiori et al.

[9]Morningstar reports using N-PORT to assess the quality of bond prices (Morningstar Research (2021)).

(2020). That paper investigates whether investors exhibit *home currency bias* using commercial data from Morningstar. We investigate the same question by asking whether U.S. investors systematically hold a larger share of a firm's bonds when those bonds are denominated in the investor's home currency (the U.S. dollar) using the N-PORT data. The security-level holdings are essential for this analysis since we are interested in how investors' holdings differ for bonds issued by the same company but denominated in different currencies. The issuer level fixed effect absorbs characteristics that are invariant at the firm level (e.g., being an exporter, being a large firm, etc).

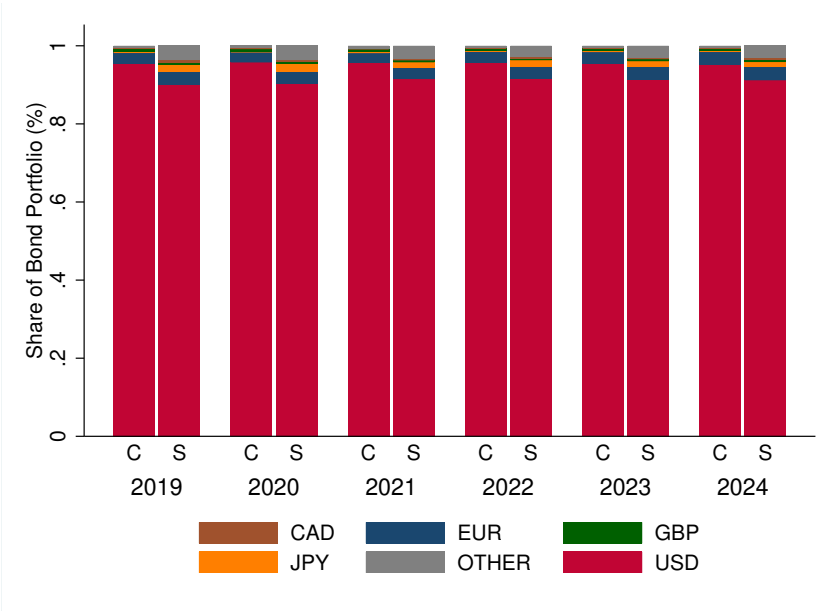
4.1 U.S. Mutual Funds Portfolios and Currencies

Before turning to the regressions, it is useful to understand the extent of U.S. mutual fund participation in bonds denominated in different currencies. We start with a country-level analysis where we document the extent to which domestic bond investments are denominated in the domestic currency. Figure 12 plots the shares of domestic investment that are in each currency for corporate and sovereign portfolios. Consistent with the literature, U.S. mutual funds overwhelmingly invest in local-currency bonds: their total debt portfolios are almost entirely USD-denominated, with only thin slices in other currencies. This pattern extends to foreign corporate bonds, where the dollar remains the single largest currency. Foreign sovereign bonds show a more diversified currency mix, and a naturally lower USD share, as many governments primarily fund in their own currencies and rely on USD-denominated bonds to reach offshore investors or when domestic markets are shallow.

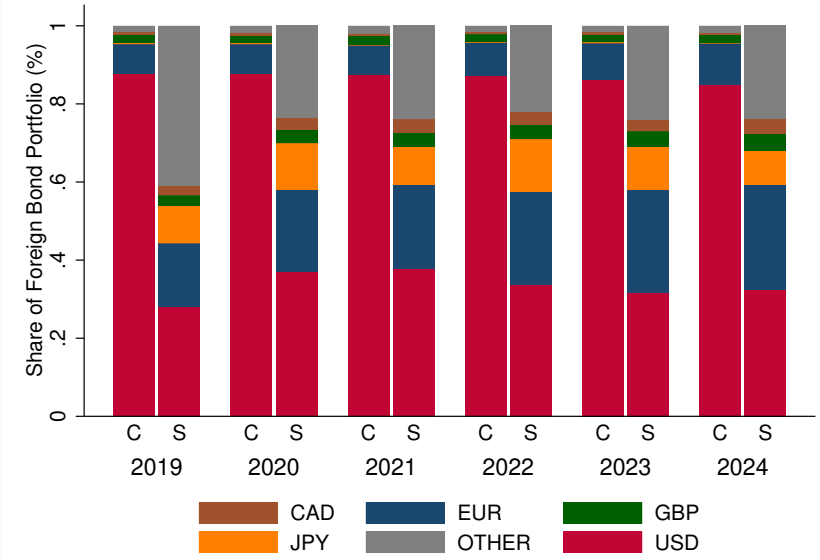
Maggiori et al. (2020) note that these aggregate patterns indicate investors may exhibit home currency bias, but the concern is that currency may just proxy for other features (e.g., issuer sector, trade exposure, credit quality, maturity, coupon, or place of issuance). To start the bond-level analysis, we first compute the share of each corporate bond held by U.S. mutual funds relative to its amount outstanding. This measure provides a simple way to quantify how much of the available market in a given currency is effectively

Figure 12: Share of U.S. Mutual Funds Bond Investment Denominated in Each Currency

(a) Debt



(b) Foreign Debt



Notes: C denotes corporate bonds and S denotes sovereign bonds. Shares are calculated as the fraction of total holdings in each currency for corporate and sovereign portfolios, respectively.

owned by U.S. investors, and to assess whether U.S. mutual funds hold some currencies disproportionately relative to others. Note that the amount outstanding information is not present in N-PORT, and we rely on the GCAP Issuance Master File for this information (this file is based on commercial data, and hence not publicly available at the micro level; see also Lewis and Xie (2025)).

Table 2: U.S. Mutual Funds Holdings Share by Currency

Quarter		USD	GBP	IDR	BRL	AUD	EUR	CAD	KRW	JPY	CNY
	Mean	11.3	3.4	6.9	2.3	1.9	2.0	1.4	1.6	1.3	1.3
2019q4	Median	6.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
	USD	712.0	29.5	6.5	10.0	7.7	135.3	17.6	6.8	52.9	2.7
	Mean	11.0	3.5	7.2	1.7	1.9	1.7	1.6	2.1	1.3	1.1
2020q4	Median	5.0	1.0	3.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
	USD	797.6	32.5	8.2	7.9	12.6	148.2	17.9	8.1	41.6	9.0
	Mean	11.6	3.5	6.2	3.6	2.7	1.7	1.7	1.5	1.4	1.3
2021q4	Median	6.0	1.0	3.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
	USD	867.6	36.3	7.7	12.1	15.0	161.9	21.7	9.2	46.4	12.1
	Mean	9.2	3.5	3.6	2.6	2.5	1.4	1.3	1.6	1.1	1.1
2022q4	Median	4.0	1.0	2.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
	USD	651.5	27.8	5.0	4.8	13.4	140.1	15.6	7.9	49.5	6.8
	Mean	8.9	4.0	2.7	2.2	2.1	1.5	1.2	1.1	1.1	0.8
2023q4	Median	4.0	1.0	2.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
	USD	653.0	29.7	5.6	7.0	13.4	159.7	15.8	8.9	42.7	7.6
	Mean	8.7	4.0	1.9	2.6	2.5	1.6	1.2	1.2	1.2	1.2
2024q4	Median	4.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
	USD	664.3	32.0	5.4	9.2	15.4	181.9	19.3	8.3	39.6	8.6

Table 2 reports summary statistics for the value-weighted share of each security held by U.S. mutual funds, summarized by currency for the last quarter of each year.[10] For each bond, we define the U.S. share as the ratio of mutual fund holdings, obtained from N-PORT filings, to the corresponding amount outstanding in the same period. The table then reports the cross-sectional mean and median of the U.S. share within each currency, and the third row displays the total holdings of U.S. mutual funds (in USD billions) for that currency. Two empirical features stand out.

First, U.S. funds hold a much larger fraction of USD-denominated corporate bonds than of non-USD bonds. Over 2019 to 2024, the mean U.S. share in USD corporates is about 9–12% with medians 4–6%, whereas means for major foreign currencies lie around 1–4% and medians cluster near 1%. The sizeable mean–median gaps indicate right-skewed distributions: few bonds issues attract substantial U.S. participation while most see small shares. In short, U.S. funds not only concentrate their corporate bond invest-

[10] Table A.1 presents summary statistics of the complete N-PORT panel from 2019q4 to 2024q4. Both Table 2 and Table A.1 focus on the ten largest held currencies as of the last quarter of 2024.

ments in the home currency, they also command a larger slice of the USD market than of non-USD markets.

Second, the third row in each quarter shows that U.S. mutual funds' aggregate holdings are concentrated in a few currencies (notably USD and EUR), and that this composition varies over time.

4.2 Home Currency Bias

Our empirical design replicates the within-firm strategy of Maggiori et al. (2020), but restricting to the U.S. mutual fund market. For each bond c issued by firm f belonging to parent p in quarter t, we compute the share held by U.S. mutual funds as

$$s_{c,f,p,t} = \frac{\text{Total Holdings of Bond } c \text{ from Firm } f \text{ of Parent } p \text{ in Quarter } t}{\text{Amount Outstanding of Bond } c \text{ in Quarter } t}.$$

We then compare, within each parent firm, U.S. mutual fund ownership across its different corporate bonds issued in distinct currencies. The estimating equation is

$$s_{c,f,p,t} = \alpha_p + \beta_{\text{US}} \mathbf{1}\{\text{Currency}_c = \text{U.S. Dollar}\} + \mathbf{X}_{c,t}\Gamma + \varepsilon_{c,f,p,t} \tag{1}$$

where $s_{c,f,p,t}$ is the U.S. share defined above, α_p are parent-firm fixed effects absorbing time-invariant characteristics of the issuer group (e.g., credit quality, sector, domicile), and $\mathbf{X}_{c,t}$ is a vector of bond-level controls (maturity and coupon bins). The coefficient β_{US} measures the home currency bias: the average difference in U.S. mutual fund ownership between a firm's USD-denominated bonds and the same firm's otherwise comparable non-USD bonds.[11]

Across specifications, the estimated home currency coefficient for U.S. funds is positive, statistically significant, and economically meaningful, re-establishing the result in Maggiori et al. (2020).[12] Results underscore that U.S. mutual funds hold substantially

[11] We estimate (1) on the panel of corporate bonds as reported and classified in N-PORT, weighting by the amount outstanding and clustering standard errors at the parent level.

[12] An important difference in the regression set-up is that Maggiori et al. (2020) exploit variation in holdings

Table 3: Home Currency Bias

	N-PORT (2022)			**Morningstar** (2022)
Currency	0.129***	0.123***	0.120***	0.101***
	(0.003)	(0.003)	(0.005)	(0.005)
Constant	0.012***	0.002		
	(0.000)	(0.002)		
Obs.	34,062	34,062	34,062	32,151
# of Firms	7,187	7,187	7,187	7,889
R^2	0.255	0.272	0.709	0.626
Firm FE	No	No	Yes	Yes
Controls	No	Yes	Yes	Yes

This table reports estimates of the regression in (1). The dependent variable is the share of each security (at the ISIN level) held by U.S. mutual funds in our sample: $s_{c,f,p,t}$. We weight by the amount outstanding, and include fixed effects at the ultimate-parent firm level. Controls include maturity and coupon bins. Standard errors are clustered at the firm level: $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

larger shares of USD-denominated bonds relative to otherwise comparable non-USD issues, and that this home currency bias is robust to denominator choice. The exercise highlights that currency denomination, not just issuer characteristics, is the central dimension shaping U.S. ownership patterns.

4.3 Home Country *versus* Home Currency Bias

To explore investors holdings variation over securities issued by domestic firms, commonly referred to as *home country bias*, jointly with variation over the securities currency of denomination, we replicate the decomposition in Maggiori et al. (2020). Unlike the within-issuer design in (1), which absorbs time-invariant issuer characteristics with firm fixed effects, we omit issuer fixed effects here because they would absorb the country of residency. Let $\mathbf{1}\{\text{Country}_p = \text{US}\}$ denote that the parent firm p is U.S.-domiciled and $\mathbf{1}\{\text{Currency}_c = \text{USD}\}$ that bond c is USD-denominated. For fund f's share $s_{c,f,p,t}$ in bond

across 9 large countries as investors. Their denominator is the total holdings across all mutual funds in their data. In the N-PORT setting, we only have one country as a holder, the U.S. Correspondingly, we had to switch the denominator to total amount outstanding, which is much larger than the mutual fund holdings, so that the coefficient magnitudes are all scaled down.

Table 4: Home Currency and Home Country Bias

	N-PORT (2022)			**Morningstar** (2022)		
Country	0.103***		0.062***	0.092***		0.056***
	(0.001)		(0.001)	(0.001)		(0.001)
Currency		0.127***	0.098***		0.114***	0.089***
		(0.001)	(0.001)		(0.001)	(0.001)
Constant	0.052***	0.012***	0.004***	0.048***	0.012***	0.005***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Obs.	22,938	22,938	22,938	22,498	22,498	22,498
# of Firms	5,291	5,291	5,291	5,612	5,612	5,612
R^2	0.203	0.277	0.338	0.199	0.273	0.331

This table reports estimates of the regressions in (2), (3) and (4). The dependent variable is the share of each security (at the ISIN level) held by U.S. mutual funds in our sample: $s_{c,f,p,t}$. We weight by the amount outstanding. Standard errors are clustered at the ultimate-parent firm level: $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

c of issuer p at time t, we estimate three specifications:

$$s_{c,f,p,t} = \alpha_1 + \gamma_{\text{US},0}\mathbf{1}\{\text{Country}_p = \text{U.S.}\} + \varepsilon_{c,f,p,t}, \tag{2}$$

$$s_{c,f,p,t} = \alpha_2 + \beta_{\text{US},0}\mathbf{1}\{\text{Currency}_c = \text{U.S. Dollar}\} + \epsilon_{c,f,p,t}, \tag{3}$$

$$s_{c,f,p,t} = \alpha_3 + \gamma_{\text{US},1}\mathbf{1}\{\text{Country}_p = \text{U.S.}\} + \beta_{\text{US},1}\mathbf{1}\{\text{Currency}_c = \text{U.S. Dollar}\} + \eta_{c,f,p,t} \tag{4}$$

Here, $\gamma_{\text{US},0}$ captures the extent to which U.S. investors overweight securities issued by domestic firms (home country bias), $\beta_{\text{US},0}$ measures home currency bias, and $\{\gamma_{\text{US},1}, \beta_{\text{US},1}\}$ estimates their relative strength in a multivariate setting.

Table 4 show that home country and home currency effects are positive and precisely estimated, with currency being clearly larger. Using the amount-outstanding denominator, the USD coefficient equals 0.129 in the specification with currency only and 0.110 when the country indicator is included, whereas the U.S.-issuer coefficient ranges from 0.086 to 0.046. The R^2 increases from 0.126 (country only) to 0.255 (currency only) and to 0.285 with both. Morningstar-based estimates display an analogous pattern. On balance, currency of denomination accounts for a substantially larger share of the variation in U.S. ownership than issuer residency.

This section provided an example from our own published work, demonstrating how

the newly available public data on mutual fund security holdings can be used in research. There are countless other research questions and methods awaiting use of these data, and we hope the public repository will serve as a springboard for other researchers.

5 Conclusion

We assemble a nationally representative security–fund panel for the U.S. mutual fund industry directly from SEC Form N-PORT. The construction harmonizes identifiers and reporting vintages to produce a stable research-grade dataset that scales from security details to sector totals. Benchmarking exercises show that the aggregates implied by N-PORT align closely with official statistics and that its security-level positions align closely with commercial microdata, establishing N-PORT as an unprecedentedly rich, comprehensive, and public source for academic research. As a proof of concept, we replicate the estimation of home currency bias from Maggiori et al. (2020).

Our results establish N-PORT as a reliable, security-level and fund-level dataset whose public coverage and micro-to-macro consistency make it a foundational input for future research. Its value for future work across the broad span of macroeconomics and finance lies in enabling transparent, replicable measurement at high frequency with granular security detail. We provided an accompanying code repository and dataset for others to use. To keep the dataset current and error free, we welcome suggestions and corrections from users of the data at info@globalcapitalallocation.com

A Additional Figures and Tables

Table A.1: Portfolio Share by Currency (%)

Quarter		USD	GBP	IDR	BRL	AUD	EUR	CAD	KRW	JPY	CNY
	Mean	11.3	3.4	6.9	2.3	1.9	2.0	1.4	1.6	1.3	1.3
2019q4	Median	6.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
	USD	712.0	29.5	6.5	10.0	7.7	135.3	17.6	6.8	52.9	2.7
	Mean	10.4	3.2	7.2	2.1	2.1	1.9	1.5	1.5	1.3	1.1
2020q1	Median	5.0	1.0	3.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
	USD	684.3	28.5	5.5	4.1	8.3	134.2	17.4	6.3	44.9	3.9
	Mean	10.4	3.2	5.9	1.9	1.8	1.7	1.2	1.4	1.2	1.1
2020q2	Median	5.0	1.0	2.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
	USD	716.5	27.9	4.7	3.9	8.3	125.5	14.6	6.4	42.3	3.8
	Mean	10.8	3.5	7.0	2.2	2.0	1.8	1.3	1.8	1.2	1.2
2020q3	Median	5.0	1.0	3.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
	USD	770.8	31.1	7.2	5.7	11.8	143.5	16.3	7.4	43.3	6.3
	Mean	11.0	3.5	7.2	1.7	1.9	1.7	1.6	2.1	1.3	1.1
2020q4	Median	5.0	1.0	3.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
	USD	797.6	32.5	8.2	7.9	12.6	148.2	17.9	8.1	41.6	9.0
	Mean	11.0	3.7	6.9	2.6	2.2	1.8	1.6	1.9	1.4	1.2
2021q1	Median	5.0	1.0	3.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
	USD	814.9	35.0	7.9	9.3	13.9	152.1	18.2	8.6	47.9	11.3
	Mean	11.4	3.5	6.8	2.8	2.3	1.8	1.7	2.3	1.6	1.3
2021q2	Median	6.0	1.0	3.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
	USD	840.8	35.2	7.7	11.9	14.2	154.2	19.7	9.3	46.2	12.7
	Mean	11.4	3.4	6.7	3.7	2.5	1.8	1.7	2.3	1.5	1.4
2021q3	Median	6.0	1.0	3.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
	USD	860.9	35.8	7.8	12.8	13.9	161.7	19.4	9.6	45.3	13.8
	Mean	11.6	3.5	6.2	3.6	2.7	1.7	1.7	1.5	1.4	1.3
2021q4	Median	6.0	1.0	3.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
	USD	867.6	36.3	7.7	12.1	15.0	161.9	21.7	9.2	46.4	12.1
	Mean	11.0	3.6	4.2	2.7	2.6	1.6	1.6	1.5	1.3	1.3
2022q1	Median	5.0	1.0	3.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
	USD	813.1	33.9	6.8	5.6	14.9	157.3	19.9	8.9	48.2	9.8
	Mean	10.2	3.4	3.8	2.9	2.7	1.5	1.4	1.8	1.3	1.1
2022q2	Median	5.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
	USD	729.8	30.3	5.8	4.6	14.7	140.5	17.1	8.5	47.1	7.8
	Mean	9.6	3.5	3.5	2.8	2.7	1.5	1.4	1.4	1.3	1.2
2022q3	Median	4.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
	USD	679.0	27.8	5.2	4.3	14.4	140.6	17.0	7.9	44.8	7.1
	Mean	9.2	3.5	3.6	2.6	2.5	1.4	1.3	1.6	1.1	1.1
2022q4	Median	4.0	1.0	2.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
	USD	651.5	27.8	5.0	4.8	13.4	140.1	15.6	7.9	49.5	6.8
	Mean	9.2	4.1	3.6	2.7	2.5	1.5	1.3	1.3	1.2	0.9
2023q1	Median	4.0	1.0	2.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
	USD	665.0	29.1	5.8	4.9	14.7	152.1	15.4	8.1	48.1	6.7
	Mean	9.1	4.2	3.6	2.6	2.2	1.5	1.3	1.3	1.2	0.9
2023q2	Median	4.0	1.0	2.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
	USD	657.4	29.9	6.4	6.1	14.1	158.5	16.2	8.0	43.0	6.8
	Mean	9.0	4.2	3.4	2.3	2.2	1.6	1.3	1.3	1.2	0.9
2023q3	Median	4.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
	USD	647.5	30.6	6.2	6.8	13.4	160.0	15.8	8.9	43.6	7.3
	Mean	8.9	4.0	2.7	2.2	2.1	1.5	1.2	1.1	1.1	0.8
2023q4	Median	4.0	1.0	2.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
	USD	653.0	29.7	5.6	7.0	13.4	159.7	15.8	8.9	42.7	7.6
	Mean	8.8	4.1	2.7	2.5	2.3	1.6	1.3	1.1	1.2	0.9
2024q1	Median	4.0	1.0	2.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
	USD	670.4	30.9	5.2	9.5	13.9	168.6	16.8	8.7	37.6	7.9
	Mean	8.7	4.0	2.8	2.7	2.4	1.5	1.3	1.1	1.2	0.9
2024q2	Median	4.0	1.0	2.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
	USD	665.3	30.6	5.2	9.2	14.5	168.5	17.1	8.5	35.7	7.7
	Mean	8.9	4.0	2.7	2.3	2.4	1.5	1.3	1.2	1.1	1.1
2024q3	Median	4.0	1.0	2.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
	USD	682.3	33.5	5.7	8.9	15.6	182.9	18.8	9.2	38.7	8.2
	Mean	8.7	4.0	1.9	2.6	2.5	1.6	1.2	1.2	1.2	1.2
2024q4	Median	4.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
	USD	664.3	32.0	5.4	9.2	15.4	181.9	19.3	8.3	39.6	8.6

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