



Vaasan yliopisto
UNIVERSITY OF VAASA

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The Relationship Between Real U.S. Treasury Yields and Equity Fund Flows

School of Accounting and Finance
Bachelor's Thesis
Finance

Vaasa 2026

UNIVERSITY OF VAASA**School of Accounting and Finance**

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Title of the thesis: The Relationship Between Real U.S. Treasury Yields and Equity Fund Flows
Degree: Bachelor of Science in Economics and Business Administration
Degree Programme: Finance
Supervisor: John Kihn
Year: 2026 **Pages:** 41

ABSTRACT:

This thesis aims to examine the relationship between U.S. real Treasury yields and equity fund flows. The thesis goal is to observe this link through various variables, while mostly focusing on behavioural aspects. This thesis is constructed around existing literature and established theoretical frameworks in finance. Existing literature and theoretical frameworks include the Fisher relation, modern portfolio theory, asset-substitution logic, monetary-policy transmission, liquidity constraints, and behavioural finance.

Through a full analysis and interpretation of these recent findings, the thesis presents the results and evaluates how the yield-flow link can depend on the measurement style used, underlying drivers, as well as the broader macro-financial environment. The results are summarised by integrating the empirical and theoretical base into one clear integrated framework and making propositions from them. This thesis review especially emphasises the behavioural factors, such as nominal framing and money illusion, which can help us to obtain more concrete evidence on how investors interpret these macroeconomic signals.

In conclusion, based on previous literature, the relationship is conditional, but there is evidence that real yields can truly influence equity fund flows. Real yields tend to matter mainly indirectly through the broader discount-rate environment and not as a fully stand-alone proxy for investors to follow. This is most likely caused by various factors that affect this relationship individually and simultaneously.

KEYWORDS: Real Treasury Yields, Equity Fund Flows, Behavioural Finance, Asset Substitution, Asset Allocation, Discount Rates, Monetary Policy Transmission, Money Illusion

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1 Introduction

This thesis focuses on examining the relationship between fund flows and the real Treasury yield, an inflation-adjusted yield on U.S. Treasury securities, which is linked to nominal yields and expected inflation via the Fisher relation (Fisher, 1930). The real yield serves as a starting point for discounting future cash flows and guiding the valuation of both risky and less-risky assets (Cochrane, 2011). In periods of higher discount rates, present values tend to be depressed, which increases the opportunity cost of holding risky assets. When real yields fall, the opposite should occur. Investors usually interpret Treasuries as an absolute risk-free rate, but it is important to briefly mention that Treasuries are in fact default-free in nominal terms.

Equity fund flows are often defined as net subscriptions and redemptions in equity mutual funds and exchange-traded funds (ETFs). ETFs are also funds, but they are usually treated as a separate fund type from traditional mutual funds because of their exchange-trading features. Fund flows can capture realised capital reallocation across funds and markets, which means that fund flows offer a distinct behavioural and allocation-level measure of investor demand (Sirri & Tufano, 1998; Warther, 1995).

Standard asset-pricing theory suggests that rebalancing should in practice occur in portfolios between risky and less-risky assets when real yields rise or fall, but it still remains an open empirical question whether these theoretical incentives really can translate into observable flows. Real-yield changes are an interesting topic to examine, because real-yield changes can reflect for example, monetary-policy transmission, shifts in expected short rates and term premia, liquidity conditions, or growth news. This means that the same increase or decrease in real yields may produce different fund flow responses across market environments (Gürkaynak et al., 2005; Hanson & Stein, 2015; Brunnermeier & Pedersen, 2009). The recent policy environment described as “higher-for-longer”, especially compared to the previous decade of a relatively low interest-rate environment, highlights how real-rate regimes can influence both the repricing of risk

assets and market sentiment (Bank for International Settlements [BIS], 2023; International Monetary Fund [IMF], 2023).

As discussed, real yields can be influenced by multiple underlying variables at the same time. For this reason, the thesis tries to evaluate this relationship as conditional rather than mechanically stable across these variables.

1.1 Purpose of the thesis

Market prices reflect what markets believe assets are worth, but fund flows show where and when investors actually allocate capital. The main question is whether real-yield movements show up in equity fund subscriptions and redemptions once the mixed data-measurement choices, data frequency, market regimes, and investment vehicles are considered. Because prior evidence is scattered across these observations, a theory-guided review can help to unify the established knowledge, highlight points of disagreement in existing evidence, as well as clarify the conditions under which the relationship can appear strongest. The research questions and hypotheses are as follows:

RQ1: When real Treasury yields rise or fall, do investors allocate capital out of or into equity funds?

RQ2: Under which market and policy conditions is the connection between real-yield changes and equity fund flows strongest?

H1: When real Treasury yields rise, investors tend to withdraw capital from equity funds. When real yields fall, investors increase allocations to equity funds.

H2: The yield-flow link is stronger in tightening or high-volatility periods, and it appears sooner in passive funds compared to active funds.

1.2 Structure of the thesis

The rest of this thesis is organised as follows. Chapter 2 develops the theoretical base for the yield-flow relationship. Chapter 3 reviews the empirical literature around possible yield-flow relationship channels. Chapter 4 aims to integrate the theoretical and empirical findings into a single framework and makes propositions that help to describe when and how changes in yields can most likely translate into fund flows. Chapter 5 concludes the results.

In this thesis, there has been limited use of AI tools, such as ChatGPT 5 and Microsoft Copilot. These tools have been mainly used for language refinement, grammar correction, and structural clarification, because the author is not a native English speaker, but all interpretation and conclusions are solely those of the author.

2 Theoretical Framework

Chapter 2 explains the foundational theoretical background for how changes in real Treasury yields can be linked to equity fund flows. It begins with asset valuation, where the real interest rate serves as one main input for discounting future cash flows. After that, the chapter explains portfolio-choice and substitution mechanisms, then turns to policy transmission, liquidity effects, and behavioural channels that can influence the yield-flow link. Throughout this chapter, all valuation-based measures are mostly expressed in real terms, meaning that, for example, real cash flows are discounted with real interest rates. Equivalently, nominal cash flows should be discounted only with nominal rates. Real yield refers either to observed market-based real yields like TIPS or to constructed real-rate proxies derived from nominal yields and inflation-expectations measures. Definitions of measures, such as real-yield proxies and flow measures, are defined within relevant subsections.

The theoretical framework also considers other broader variables that could in theory affect equity fund flows. The chapter covers monetary-policy transmission through the term structure of interest rates. It also explains how conditions in market and funding liquidity can either strengthen or weaken investors' allocation decisions. Finally, the chapter examines basic behavioural mechanisms, such as limited attention, performance-chasing, and loss aversion.

2.1 Real Yields and Discounting

In standard valuation theory, an asset's price equals the present value of its expected cash flows. The Fisher relation links the nominal interest rate i , the real interest rate r , and expected inflation π^e :

$$(1) \quad (1 + i) = (1 + r)(1 + \pi^e)$$

The real interest rate is commonly derived from the nominal interest rate minus expected inflation, which is often proxied by survey-based measures or breakeven inflation, which is derived from the spread between nominal Treasury yields and inflation-indexed Treasury bonds (TIPS) with the same maturity. Changes in real yields as a result affect the discounting of an asset's future real cash flows (Cochrane, 2011).

2.2 Modern Portfolio Theory and Asset Substitution

Modern Portfolio Theory explains how investors in theory should balance between risk and return when constructing portfolios (Markowitz, 1952). Markowitz (1952) shows that the best portfolios lie on the efficient frontier, which means that for a given return, the efficient frontier gives the lowest variance. This can be easily interpreted as no extra return can be achieved unless investors take more risk. Tobin (1958) extended this idea by adding a risk-free asset, such as Treasury bills and in some cases short-term government bonds, if held to maturity. The original mean-variance framework is expressed in nominal terms, but this thesis applies it in real-return terms to match better with the thesis theme of real returns. Once a risk-free asset is introduced, all investors should hold the same optimal risky portfolio. Investors tend to only differ in risk tolerance.

$$(2) \quad w^* = \frac{E[R_M] - r_f}{A\sigma_M^2}$$

Where w^* is the weight invested in the risky portfolio, $E[R_M]$ is expected real return on the risky portfolio, r_f is real risk-free rate, σ_M^2 is the variance of the risky portfolio return, and A is the coefficient of risk aversion.

$$(3) \quad \frac{\partial w^*}{\partial r_f} = \frac{-1}{A\sigma_M^2} < 0$$

Substitution logic refers to the idea that, all else equal, when the real risk-free rate rises, the optimal amount of risky assets falls. Conversely, when the real rate falls, the amount

of risky assets rises. If investors' portfolio rebalancing works as theory suggests, it may be visible not only in equity prices, but also in equity fund flows.

2.3 Monetary-Policy Transmission and the Term Structure

In the context of monetary policy and term structure, it is useful to briefly note the pure expectations theory of the term structure. While the Fisher relation does not itself constitute the expectations hypothesis of the term-structure, it offers the basic real-versus-nominal framework within which yield movements can be interpreted. The expectations hypothesis refers to the idea that longer-maturity bond yields reflect the average expected path of shorter-term interest rates over the relevant horizon (Lutz, 1940). This is useful because it helps us to understand the basic valuation logic behind longer-maturity yields.

Monetary policy decisions move longer-maturity yields mainly in two ways. Monetary policy announcements and decisions shape expectations of future short-term policy rates. Monetary policy also affects the investors' demand for compensation from holding longer-maturity bonds, which equals term premiums. High-frequency event studies made by Gürkaynak et al. (2005) and Hanson and Stein (2015) both show that policy announcements and surprises can move yields beyond their very short end. Specifically, Gürkaynak et al. (2005) find that policy actions can move nominal longer-maturity yields and far-ahead forward rates. The study also interprets this as consistent with inflation-expectation movements. Similarly, Hanson and Stein (2015) find that policy surprises can move longer-horizon forward rates, which is also consistent with changes in real term premia.

This implies that the market tends to adjust when central-bank signals tighter monetary-policy. Specifically, markets adjust with pricing expected short rates higher and with a wider term premium. These both can push longer yields upward. In contrast, when the central-bank indicates easing policy, the opposite can occur. This distinction is especially relevant in this context because it indicates that real yield changes are state dependent.

2.4 Market Liquidity and Funding Constraints

Market liquidity is a market's ability where individuals or institutions can quickly purchase or sell an asset without moving the asset price drastically. Funding liquidity is the ability to finance the purchase of financial assets. At the times when either one tightens, the effective cost of holding risk rises and investors try to cut risk exposures more aggressively. This theory is often described as a liquidity spiral. Funding stress forces sales, sales worsen market liquidity, worsened market liquidity raises volatility, which can raise margin requirements, and funding tightens even more (Brunnermeier & Pedersen, 2009). Therefore, rising real yields can generate disproportionately large outflows from equity funds. This implies that the asset-substitution basic logic is amplified by liquidity effects.

Investment vehicles that have mechanical creations and redemptions and limited or no cash buffers, such as many broad ETFs. These are vehicles that tend to transmit reallocations more quickly, whereas some active mutual funds can absorb flows with cash holdings or managerial discretion, which slows pass-through (Ben-David et al., 2018). This points out that liquidity can determine who moves first and how fast. Investors tend to favour flight-to-quality (or safety) and flight-to-liquidity at volatile times. This means that investors are effectively rotating away from riskier or less liquid assets into safer, more liquid instruments, such as bonds (Longstaff, 2004; Beber et al., 2009). These patterns can help us to observe why the same yield change can produce larger outflows during volatile or tightening periods than in calm or easing periods.

In addition, large redemptions at some funds can force managers to liquidate assets in need of money that overlap with other holdings. This creates fire-sale dynamics that depress and tighten prices and liquidity even more (Coval & Stafford, 2007). The same setting can also feature fire purchases. In a fire-sale situation, liquidity-rich or less-overlapping investors can act as natural counterparties and partly absorb these forced sales and dampen the large price distortions (Coval & Stafford, 2007). Over time, the

liquidity-bearing risk varies over time and shows up as a premium in expected returns (Pástor & Stambaugh, 2003), which points out liquidity's role as an important state variable that links to allocation decisions.

These introduced papers and theories highlight liquidity's role in this relationship. They partly explain the effect of state dependence. They also explain the investment vehicle differences and explain why liquidity conditions can act as a multiplier on the discount rate and asset-substitution logic.

2.5 Behavioural Mechanisms

Many theories imply that investors should always act as rational individuals, but that is hardly ever the case. That is why the behavioural finance part complements this rational framework and explains why investor decision-making may differ from full-information optimisation. Previous studies show that investors in practice have all sorts of distortions. In this context, these distortions show that reallocation changes become affected by not only economically meaningful incentives, but also what information investors notice. It is shown that investors tend to naturally gravitate toward information that is easily accessible and easy to understand, which implies that more abstract concepts, such as inflation adjustment, often receive less attention. Behavioural factors also show how strong allocation changes can become and be even stronger than what the rational asset-pricing and substitution logic models tell us.

Limited attention and salience. Investors constantly face cognitive constraints and time costs. Investors may therefore underweight information that is harder to process, for example separating inflation from nominal rates (Barber & Odean, 2008). In contrast, investors tend to overweight the most visible and salient information, such as prominent headlines, extreme market moves, simple yield levels, as well as recent returns (Barber & Odean, 2008). Product visibility and search frictions in mutual fund markets amplify this relationship. These variables make flows responsive to salient, easily seen products, such as products with better prominence or marketing visibility (Sirri & Tufano, 1998;

Barber et al., 2016). A central takeaway here is that the real yield change is most likely to affect flows when they are visible and easy to interpret.

Investors' limited attention also helps us to understand why there might be some performance-based biases and performance chasing, where investors tend to treat recent performance and gains as a signal or good proxy for future gains (Sirri & Tufano, 1998). Based on a rational view, flows may respond to past performance, because investors tend to infer manager skill and reallocate capital until abnormal returns are competed away (Berk & Green, 2004). In addition, under a behavioural view, recent performance can become a basis for beliefs and therefore prompt allocations, even when the learning is imperfect (Sirri & Tufano, 1998). This can happen especially in situations where performance metrics are highly salient and easily ranked. The main takeaway here is that real-rate optimisation does not tend to be the main thing here. Yield-driven valuation effects tend to translate into flows mainly through headline returns and salient performance metrics rather than through direct real-rate optimisation.

Investors tend to often compare their own outcomes to benchmarks or peer groups. This can compress the complex information into simple "beat versus lag" signals that are easier to understand (Tversky & Kahneman, 1981). Framing theory matters here because it explains the key concept here. Framing theory shows that economically meaningful information can trigger different reactions depending on presentation (Tversky & Kahneman, 1981). This can amplify the influence of benchmark-relative reporting. This is also backed by studies which show how delegated management strengthens this link. It shows that investors often rely on past performance, which therefore translates into inflows and outflows (Berk & Green, 2004). This information shows that real yields matter most when they directly affect simple narratives, such as equities and bonds.

Kahneman and Tversky (1979) show that investors clearly react more strongly to losses than equivalent gains over time. This is called prospect theory. Prospect theory shows

that this creates state dependence and shifts in risk taking. Mental accounting evidence also strengthens these claims, where researched papers show that reallocations tend to be more aggressive during downturns and high-volatility periods than during comparable upswings (Shefrin & Statman, 1985; Odean, 1998). This is also amplified by myopic loss aversion, which means that investors tend to evaluate their portfolios too frequently and this increases sensitivity to short-term losses, which helps to explain why investors might increase disallocations during turbulent times (Benartzi & Thaler, 1995). Together, these preference-based mechanisms explain why the fund flows can react sharply even when the real yield change is the driver.

Behavioural frictions are also shown to affect investors' decision-making, when choosing between active and passive investment vehicles (Hortaçsu & Syverson, 2004). When investment vehicle monitoring and complexity requirements are high, investors tend to base their choices more on visible attributes such as fees or recent performance, rather than doing full analysis of the product. Hortaçsu and Syverson (2004) show that search costs and product differentiation can influence allocation decisions. This is one of the reasons why the same yield shock can produce different responses across different investment vehicles. This information implies that more visible products may see greater reallocations compared to more complex products.

All these theories and findings from a behavioural standpoint add an important perspective to 2.1-2.4. These show why the yield-flow relationship can vary by many different settings. A related behavioural mechanism, money illusion, or inflation neglect, can further bias investors towards nominal signals rather than inflation-adjusted fundamentals (Shafir et al., 1997). Its empirical relevance for the yield-flow link is examined in the evidence review.

3 Evidence From Prior Research

Chapter 3 reviews prior empirical evidence on the relationship between real Treasury yields and equity fund flows. It aims not only to catalogue the results, but to organise the findings around the mechanism through which yield changes may turn into observable allocations. This chapter evaluates how well the rational side aligns with the newer empirical findings.

The key issue in this chapter is identification. The observed relationship depends on which yield measure is used and at what frequency it is measured. This matters for this relationship because different time frames can capture different things, which complicates the evaluation. Therefore, Chapter 3 examines how papers measure and define the real yields, how fund flows are constructed, and which market environments strengthen or weaken this link. Chapter 3 begins with the relevant discount rate evidence and then moves to amplifiers, such as liquidity, investment vehicle heterogeneity, and distinct behavioural mechanisms. Money illusion is then evaluated as a separate mechanism after which the chapter moves to the integrated framework construction.

3.1 Scope and Approach

The chapter's goal is to focus on empirical studies that directly inform the thesis hypotheses and research questions. Gathered studies measure real yields explicitly or using clear competitive real-yield proxies. Included studies analyse equity mutual fund flows, ETF flows or both as allocation outcomes. The main purpose is comparability across the studies.

The literature review uses measurement and identification as the main perspectives developed in subsection 2.1. This chapter treats real yields as either observed TIPS yields or constructed real-rate proxies, and each section describes which type of proxy is being used. Fund flows are typically measured using assets under management and are typically reported at the fund level or in aggregate. Results tend to differ across mutual

funds and ETFs, as well as between active and passive vehicles. Each subsection reports the yield proxy, flow definition, data frequency, and identification approach.

3.2 Discount Rate Valuation Channel and Equity Fund Flows

The discount-rate valuation channel forms the starting point, constructing directly on basic valuation logic summarised in subsection 2.1. Many studies using the present-value framework and return decompositions show that equity price variation reflects both cash-flow-related news and discount-rate news, and that time-varying discount rates are central to valuation (Campbell & Shiller, 1988; Campbell, 1991; Cochrane, 2011). In this context, real Treasury yields matter as an observable component of the discount-rate environment. The review focuses on what drives these yield movements, such as growth news versus hawkish monetary-policy surprises. It does not aim to reestablish the full valuation theory developed in Chapter 2. The valuation theory matters for fund flows because it changes the relative attractiveness of equities versus safe assets and the realised return patterns that investors usually are keen to follow.

It is important to note that the effect of higher yields depends heavily on why the real yields are rising. For example, when real yields rise because growth expectations improve, equity prices need not fall. Equity prices may even rise if cash-flow expectations grow stronger than asset-pricing discount rates. In contrast, if equity prices rise because required returns increase or monetary policy tightens financial conditions, then the negative valuation effect is more likely to appear. This supports the idea that equity-returns reflect both cash-flow news and discount-rate news, and therefore different shocks can create different co-movements between rates and equities (Campbell, 1991; Cochrane, 2011).

Some studies effectively use high-frequency identification around monetary-policy announcements to isolate yield movements. The purpose is solely to isolate only the yield movement more cleanly. Event-study evidence shows that monetary policy surprises move yields across the yield curve (Gürkaynak et al., 2005) and can trigger

parallel repricing in broader asset markets, including equities (Bernanke & Kuttner, 2005; Gürkaynak et al., 2005). For example, Gürkaynak et al. (2005) find that 75-90% of the explainable change in 5- and 10-year Treasury yields around monetary policy announcements can be explained by changes in interest rates and Bernanke and Kuttner (2005) estimate that an unexpected 25-basis-point rate cut can be linked with roughly a 1% increase in broad stock indexes. Researchers still emphasize that policy announcements often contain both a “pure policy” component and an information component about the economic outlook. Information matters because information effects can push yields and equities in the same direction. Studies that do not separate these components often report weak or unstable relationships.

A second source of heterogeneity is the maturity and construction of the real-yield proxy. Because equities are often long-duration assets, their valuation is often expected to be more closely linked to medium- and long-horizon real rates than to very short rates. On the other hand, long-maturity real yields can mix expectations of future real short rates with time-varying term premia (Hanson & Stein, 2015). As a result, the measured yield-equity relationship can depend heavily on which maturity is used and what the yield change captures. More detailed decomposition issues are discussed later in the thesis.

A further source of heterogeneity observed here is state dependence. The valuation response to yield changes may be stronger when financial conditions are tight and risk-bearing capacity is limited, because increases in discount rates are more likely to link with risk premia and tighter funding conditions. Liquidity-based theories suggest that funding constraints can amplify price responses and create nonlinear adjustments during stress periods (Brunnermeier & Pedersen, 2009). This can explain why the same change in real yields may be linked with modest equity repricing in calm markets, but much larger repricing in stressed environments, even before considering fund flows.

The discount-rate channel is best viewed as a benchmark mechanism for fund flows, not as a full complete model for investor behaviour. Higher real yields tend to depress equity

valuations and therefore raise the appeal of safe assets. This can lead to rational rebalancing and behavioural reactions contributing to equity-fund outflows. In contrast, falling real yields can support future cash-flow valuations and could therefore link up with fund inflows. This suggests that valuation effects may influence fund flows indirectly, but not only through real-rate optimisation. Many investors tend to focus on more visible signals rather than act as rational agents. Overall, the evidence supports that yield-driven valuation changes can affect flows when they become visible as clearer performance metrics, such as discount-rate-related shocks (Sirri & Tufano, 1998; Berk & Green, 2004; Barber et al., 2016). This underlines that flows are state dependent, especially when risk tolerance is low.

3.3 Asset Substitution Between Risky and Less Risky

Asset Substitution between risky and less risky is a central implication of the rational framework. As stated in the theoretical framework, a higher real risk-free rate should shift portfolio allocations towards safer assets and away from equities.

Here a main challenge tends to be that fund flows and asset returns often move together. This makes it very difficult to separate forward-looking substitution, parallel valuation effects, and shared responses to common shocks. Previous evidence finds that there is a strong co-movement between aggregate mutual fund flows and the returns of the securities that those funds hold, especially for equity funds (Warther, 1995). It implies that investors may add capital to those funds with strong past performance and withdraw capital if weak performance is detected.

A competing view is that investors do not always do mechanical rebalancing but flows and returns often move together because they may respond to the same macroeconomic news. Jank (2012) finds that aggregate equity fund flows are related to variables that can predict the real economy and expected returns. Jank (2012) argues that the positive co-movement between flows and market returns can be explained by shared reactions to macroeconomic information. Yield changes at weekly or monthly

horizons may therefore bundle together growth expectations, risk premia, and policy expectations. This means that the observed yield-flow link embeds a bundle of economic information and not just the absolute yield-flow link alone.

Some studies try to solve this identification problem by using monetary-policy shocks, which move interest rates within narrow windows and allocation decisions can be studied under tighter identification (Banegas et al., 2022). Even in this context, the estimated yield-flow link still depends on how yield changes are measured and what they capture. Since aggregate flow co-movements may reflect both rebalancing and bundled reactions to macroeconomic news, asset substitution is treated as a key mechanism, but aggregate flow co-movements are interpreted cautiously.

3.4 Liquidity and Funding Constraints

It appears that asset-substitution pressures can translate into observable fund flows only when investors and intermediaries can actually reallocate without major trading frictions. As discussed in the theoretical part of the thesis, market and funding liquidity can affect whether these portfolio adjustments are gradual or rapid (Brunnermeier and Pedersen, 2009) and Brunnermeier and Pedersen (2009) describe this as a liquidity spiral. The liquidity spiral can lead ultimately to disproportionately large redemptions. This is a key element for this thesis, because it explains why the reallocations might not always be gradual and easily absorbed by the market.

Fund-flow dynamics are shaped by liquidity frictions in delegated investment markets. As stated before, simultaneously large redemptions can force mutual fund managers to quickly raise cash, which is usually done first by liquidating most liquid assets first (Coval & Stafford, 2007). Coval & Stafford (2007) also find that if market absorption capacity is low, fund managers might even accept lower prices when selling assets. This can create systematic price pressure in the market and can lead to fire sales and fire purchases (Coval & Stafford, 2007). This is a relevant nuance for this thesis because it tends to create a feedback loop, which can be described as tighter liquidity increases the impact

of sales, weaker performance triggers further outflows, and the original shock becomes much larger and amplified.

Liquidity conditions can also act as a state variable, which influences the expected return path for bearing risk (Pástor & Stambaugh, 2003). This can explain why liquidity stress is often linked to larger and more clustered equity fund outflows (Pástor & Stambaugh, 2003). This is consistent with previous investment vehicle evaluation; constrained liquidity may transmit faster through passive vehicles with more mechanical creation and redemption systems. This view can be reinforced with Ben-David et al. (2018) findings based on ETF volatility and non-fundamental price movements. Ben-David et al. (2018) find that ETFs can amplify volatility and non-fundamental price movements, which implies that liquidity conditions coincide with investor demand and, in the worst case, make outflows more clustered during stress.

A recent working-paper finding links these mechanisms even more directly to allocations between intermediaries under tightening conditions. Garg and Famiglietti (2025) find that contractionary monetary policy may trigger equity flows away from performance-sensitive intermediaries, contributing to forced sales, while less performance-sensitive intermediaries can absorb these sales and offer liquidity. Although this finding is framed around monetary transmission, the main indication for the subsection is that constraints and performance-sensitive funding can turn rate-driven shocks into flow-driven trading pressure and liquidity demand. Liquidity and funding constraints indicate that yield changes can act as triggers and liquidity conditions can act as amplifiers for fund flows.

3.5 Regime Dependence

Regime dependence implies that the relationship between U.S. Treasury yields and equity fund flows is not consistent over time, because both the information content of yield movements and investors' willingness to reallocate vary with the macro-financial environment. In restrictive policy phases, changes in real yields are more likely to be interpreted as signalling a tighter expected-return environment for risky assets, while in

easing phases the same yield movements can encourage a different mix of forces and therefore translate less predictably into flows.

The event studies around monetary-policy events support the idea that policy can generate economically meaningful changes in yields that matter for asset valuation. Bernanke and Kuttner (2005) find that monetary-policy surprises tend to move equity prices. To supplement this, Gürkaynak et al. (2005) find that policy actions and statements can also move yields across the maturities. A more recent study by Hanson and Stein (2015) shows that monetary policy also affects the longer-maturity real component of rates. This underlines that the real-yield differentiation is relevant as one of the main channels through which the return trade-off can be seen between safe assets and equities and how it can shift. This implies that real yield increases in clearly restrictive phases should be more likely to link with equity net outflows. This is most likely because repricing of discount rates and expected returns are more salient in restrictive phases.

In addition, Ciminelli et al. (2022) offer more precise findings on regime-specific evidence. They tried to separate pure policy shocks and an improved economic outlook. As a result, they find that positive economic information is linked with flows towards growth-sensitive equity funds and there might even occur outflows from U.S. bond funds. In contrast, if the central-bank indicated pure policy tightening, there were observed outflows from riskier emerging market funds. The main takeaway is that the yield-flow link is strongest when real-yield increases signal clearly restrictive policy shocks and higher risk aversion. The link tends to appear weaker or mixed when increases reflect improved economic outlook. Figure 1 illustrates these findings.

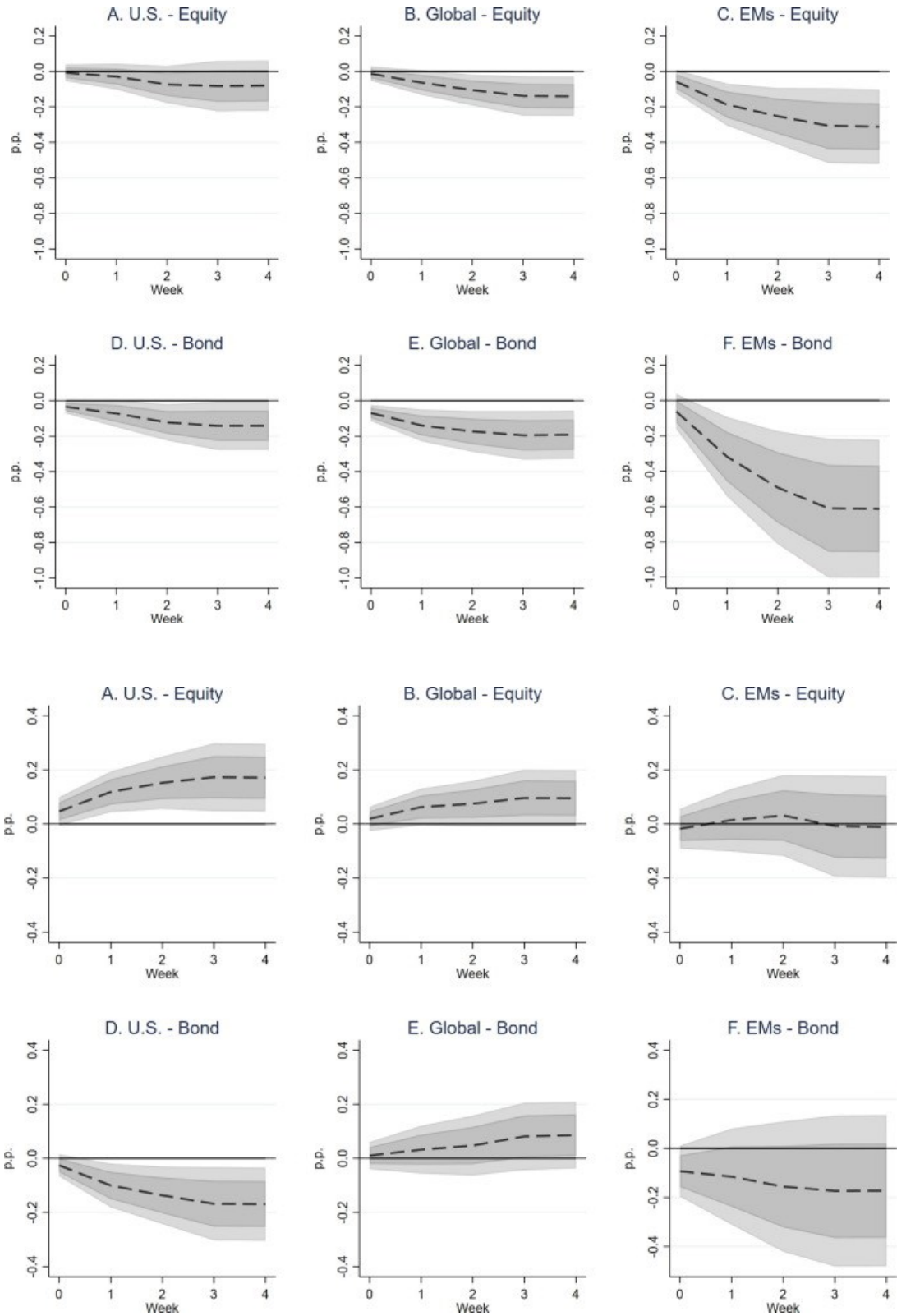


Figure 1. Fund-flow responses to pure monetary policy shocks versus information shocks (Ciminelli et al., 2022).

Studies that review U.S. monetary policy shocks effects on mutual fund performances are also consistent with Ciminelli et al. (2022) findings. Banegas et al. (2022) find that U.S. monetary-policy shocks can affect mutual fund performance and flow dynamics. This supports the idea that fund flows are state-dependent and reallocations are linked to the policy environment. Study is useful for complementing this state-dependence evidence. Banegas et al. (2022) support the regime dependence view in general sense.

Overall, the evidence strongly indicates that this relationship is highly state dependent. This supports the observation that the relationship is heterogeneous and easing versus tightening should be treated as separate environments.

3.6 Measurement and Frequency Sensitivity

The relationship between real yields and flows is highly sensitive to how both are measured and matched over time. Measurement sensitivity is important for interpretation, because the observed “real yield” proxy may capture different components across different periods such as expected real short rates, term premia, or liquidity effects, while the observed “flow” may vary in whether it isolates genuine investor subscriptions and redemptions or simply shows just valuation-driven changes in assets under management. This means that the observed yield-flow pattern can contain different mechanisms across the samples.

The first problem is the construction of real yields from TIPS. TIPS are commonly used as a real-rate proxy, but it still embeds for example time-varying liquidity components. D’Amico et al. (2018) find that TIPS deviations from model-implied real yields can be economically meaningful and state-dependent. This means that using raw TIPS yields is not always a clean measure of the real expected return, because it has embedded components in it. D’Amico et al. (2018) also find that the divergence between TIPS and risk-free real yields was as high as 100 basis points when TIPS were first issued to the public and as high as 300 basis points during the 2007-2008 financial crisis. This shows how imperfect a real-rate proxy TIPS can be.

In addition, Fleckenstein et al. (2014) find significant pricing gaps between TIPS and inflation-swapped replicating positions. This suggests that TIPS plus inflation swap contracts traded lower than nominal Treasuries. This is described as the “TIPS-Treasury bond puzzle”. It shows that the real yields derived directly from market prices are affected by segmentation and relative-value pressures.

The next problem is how to interpret longer-maturity real yields, because they are not straightforward to interpret. Studies show that Long-term real yields can embed expectations of future real short rates, and this logic is more in depth introduced in theoretical framework part. The second issue tends to be time-varying premia. Expectations embedding means that changes in a 5- to 10-year real yields can have different expectations for future conditions. That is why Kim and Wright (2005) offer an arbitrage-free framework, which shows long-term yields and forwards can move significantly due to premia, and not only by expected policy paths. In addition to this, Adrian et al. (2013) offer a regression-based model, which tries to separate the premium component from longer-maturity yields. In this context, this matters because flows tend to respond more consistently to changes in expected path of real short-term rates, because that is closer to the opportunity cost of holding equities. It is problematic if yield proxy mainly captures premium variation and risk-bearing capacity.

Measurement choices are also crucial on the fund-flow side. To study allocation between them, flows should be studied by constructing the “net new money”, which means that flows are observed only by net investor inflows and outflows rather than observing the fund size differentiation alone. This can be done for example, by adjusting changes in assets under management for returns. Adjustment is relevant here, because yield changes often coincide with equity-return movements. If observing without this adjustment, the falling equity prices during rising yields might appear as outflows, which biases the results.

As stated previously, the importance of separating return-related co-movements is highlighted, because aggregate fund flows and the returns of the securities those funds hold have been shown to co-move (Warther, 1995). Studies comparability therefore depends on how flows are scaled and how funds are classified. This is relevant here because different investors and funds differ in timing and adjustment intensity.

By utilizing different data frequencies when studying this relation can change the results. High-frequency data identification is used to isolate market reactions, for example, policy announcements and the macroeconomic outlook. High-frequency data identification differs from mutual fund flows, which are usually measured weekly or monthly. At lower frequencies, yield changes can combine, for example, monetary-policy expectations with inflation and growth news. Yields may therefore embed unwanted variables, when observing real-yield changes at lower frequencies. Frequency also links up with regime dependence, because volatile periods often include larger yield moves, more variation in TIPS liquidity, and more variation in term premia (D'Amico et al., 2018).

Even when we utilise high-frequency data, data can also differ at the same data frequency. It depends on how the data is collected and combined. Different choices can matter, such as using end-of-month yields instead of monthly averages, relying on yield levels rather than changes, or cumulating daily yield changes into monthly shocks. These choices can lead to different interpretations, especially in volatile periods. On the flow side, if we observe fund flows in aggregate, it can hide important differences on the flow side. Aggregate flows may show rotation between investment styles and regions. This is important to observe when evaluating evidence across regimes and different studies.

Measurement and frequency sensitivity can offer an explanation for why the yield-flow link can be unstable. This is because real-yield proxies may embed time-varying liquidity and term-premia, while flow measures can also differ at the same time.

3.7 Behavioural Evidence

This section is constructed around subsection 2.5 where the basic behavioural mechanisms are introduced in more depth. Behavioural evidence helps to interpret the yield-flow relationship because observed flows can show what investors notice and how they evaluate outcomes in the market rather than always reflecting inflation-adjusted optimisation. Some evidence suggests that real-yield movements can influence equity fund flows indirectly.

Foundational work consists of the flow responses to recent performance and simple ranking-based evaluation. Sirri and Tufano (1998) find that mutual fund flows are tightly linked to past performance in a non-linear way, consistent with investors relying on salient performance signals and engaging in limited search rather than doing a comprehensive analysis when investing. Investors' performance sensitivity is relevant for the real-yield-flow relationship because yield-driven discount-rate changes typically show up quickly in equity returns and relative rankings, the very metrics investors and advisors tend to follow. Berk and Green (2004) find that in the money markets capital tends to reallocate towards skilled managers until abnormal returns are competed away, but behavioural evidence shows that investors often misinterpret performance, which amplifies return signals. In addition, Barber et al. (2016) find that investors place disproportionately large weight on easily observable returns and may treat market-driven performance as managerial skill. This suggests that flows actually react more strongly to broad market movements even when the informational content is unclear. Evidence indicates that the yield-flow link is strongest when real yields show up in the most visible and easily ranked performance metrics and vice versa.

Loss aversion and reference point dependence are a second behavioural perspective that should be interpreted usefully considering this relationship. As previously stated, Prospect theory shows that investors react more strongly to losses than to equivalent gains (Kahneman & Tversky, 1979). Framing theory reinforces this behavioural point of view, where Tversky & Kahneman (1981) find that identical information can generate

totally different outcomes based on how the information is framed compared to reference points. Equivalent studies on mental accounting and ignorance to realised losses help also to explain why drawdowns can trigger disproportionately large withdrawals (Shefrin & Statman, 1985; Odean, 1998). Studies show that loss aversion can be increased by frequent evaluation of portfolios, which furthermore can strengthen risk aversion (Benartzi & Thaler, 1995).

In this context these represented mechanisms matter because rising yields often link up with greater discounting pressure and on many occasions with higher volatility as well. Even modest yield increases can trigger redemptions if they appear together with visible realised losses. Behavioural preferences therefore reinforce the state dependence. The same yield movement can generate much larger outflows when they coincide with visible drawdowns compared to when markets are calm.

A final behavioural perspective observed here is the heterogeneity across investment channels and vehicles. Search costs and product differentiation modify which funds investors prefer and how quickly reallocations can occur. Sirri and Tufano (1998) find that search frictions influence how investors respond to performance information, while Hortaçsu and Syverson (2004) highlighted that the same thing can happen even within passive index products. Differentiation and search costs therefore matter for demand.

These frictions can also interact with investment vehicle design. Exchange-traded products are continuously priced, highly visible, and easy to trade, enabling rapid reallocations, whereas mutual fund flows are affected by slower subscription and redemption processes. Evidence that ETFs amplify volatility and contribute to non-fundamental price pressure (Ben-David et al., 2018), enhances the broader idea that the same macroeconomic signal, such as a change in real yields, can generate different flow patterns. This usually depends on how visible/popular the fund is, how easily it can be traded, and how investors track relative performance.

Foundational behavioural evidence suggests that yield effects on flows tend to be strongest when they appear in salient performance metrics and visible losses. The evidence also supports the idea that investment vehicles also matter.

3.8 Money Illusion

Money illusion is separated on purpose because it offers a different and critical behavioural perspective for this relationship. The money illusion's key suggestion is that investors may not process real or inflation-adjusted values in a way asset-substitution logic assumes. This section therefore examines whether investors really recognise and react to inflation-adjusted values, such as real yields, although real yield movements are economically meaningful. Money illusion can offer more in-depth answers as to why the relationship between real yields and equity fund flows may appear weak or unstable.

Shafir et al. (1997) find that investors' judgements about satisfaction, fairness, and gains can be influenced by nominal framing. This framing can mean, for example, that a nominal wage cut is seen as negative even if the real value or purchasing power is unchanged. In contrast, the same nominal wage increase is seen as positive even when wage increase minus inflation implies a real loss. The main implication is that humans tend not to automatically incorporate inflation decompositions when they are making decisions. This can be expressed as follows: nominal values steer investor decision-making. This implies that the real return advantage embedded in real yields may not translate into fair reallocations if investors focus primarily on nominal values. Figure 2 illustrates this natural tendency.

	<u>Adam</u>	<u>Ben</u>	<u>Carl</u>
Nominal transaction:	-23%	-1%	+23%
Real transaction:	+2%	-1%	-2%
<u>Rank:</u>			
1st:	37%	17%	48%
2nd:	10%	73%	16%
3rd:	53%	10%	36%

Figure 2. Ranking responses in the house-sale money-illusion scenario (Shafir et al., 1997).

Figure 2 illustrates a simple house-sale money illusion scenario, where respondents were tasked to rank how successful these transactions were. The figure shows that Carl, who receives a 23% nominal gain despite a 2% real loss, is ranked first by 48% of respondents. In contrast, Adam, who receives a 23% nominal loss despite a 2% real gain, is ranked first by only 37% and ranked last by 53% of the respondents. This shows that respondents place substantial weight on nominal outcomes rather than evaluating the transactions only in real terms. This implies that humans are naturally rational creatures, but when it comes to economically meaningful figures, humans tend to suddenly not be able to decompose figures into the single real outcome that should really matter in practice.

Modigliani and Cohn (1979) offer a direct application of asset pricing and argue that stock market valuations can be distorted when investors discount real cash flows using nominal rates, leading to valuation errors when inflation changes over time. It is possible that investors mix nominal and real values when pricing risky assets; the same confusion can therefore influence allocation decisions that can be observed in fund flows. A specific valuation model is not the key here, but the behavioural logic behind it is. When nominal yields rise, investors may view the safe alternatives as more attractive regardless of the inflation compensation embedded in those yields. However, when inflation rises, but nominal yields do not adjust, the real opportunity cost of holding equities may shift without being recognised by strongly nominally focused investors. Money illusion therefore suggests that flows may respond more strongly to salient nominal indicators

rather than to real-yield measures. This can already heavily weaken the empirical link between real yields and equity fund flows.

Money illusion framework can be utilised for explaining earlier empirical findings, such as performance-chasing and benchmarking. It is more common for investors and advisors to use nominal values when benchmarking and evaluating success, therefore flows will primarily respond to visible nominal performance and only indirectly to real-rate changes. In that case nominal framing matters even more as explaining theory for why this relationship can appear weak, despite real values are those that should matter. Money illusion also links state-dependence better with this yield-flow weakness observation. These observations suggest that real yields can explain flows only when nominal and real signals move together. Ultimately, money illusion theory is important because it offers one clear perspective why real yields may not explain flows.

4 Integrated Framework and Propositions

Chapter 4 aims to integrate the theoretical and empirical findings into one framework. It aims to explain the main findings which tend to appear the most influential around this relationship. Instead of measuring the size of a single effect, this framework brings together and shows why the link may vary across different environments and market conditions.

This integrated framework is constructed as follows. The valuation and asset-substitution logic are taken from Chapter 2 and then are complemented with sources of variation and heterogeneity from Chapter 3. The aim is to move from a separate listing of mechanisms to a more unified transmission mapping from yields to flows.

Chapter's most important observation should be that a single observed change in a real yield measure can reflect different underlying shocks and therefore the propositions are meant to be conditional. As stated, longer-maturity yields can combine the expected future short-rate path and time-varying premia. TIPS-based measures can contain liquidity and segmentation effects.

Reallocations that show up in fund flows are also modified by institutional and liquidity conditions. Portfolio adjustments can occur progressively and be absorbed with limited price pressure when funding and market liquidity conditions are generous, which makes large net redemptions less likely. Still, reallocations can become sudden and amplified through funding constraints and market-absorption ability when liquidity is scarce. This means that the liquidity does not remove the baseline mechanism but can amplify or weaken how strongly it appears in observed flows.

Regime dependence is important here because it affects how strong allocations can become. Especially in tightening or high-volatility periods, real yield changes are seen as clearly restrictive. This is why discount-rate-relevant news and instability increase the

appeal of safe assets. In contrast, during low volatility or easing periods, the same yield change may indicate stronger growth expectations or shifting premia, causing equity flows to be less predictable. The regime dependence is not here to describe the general market environment, but as a part of the explanation.

Behavioural mechanisms explain how investors truly process macro-financial signals when making decisions in the equity market. Fund flows reflect individual choices made by investors, which are affected by salience as well as reference points rather than continuous optimisation over real returns. Investors react strongly to past performance, realised returns, and relative ranking, which suggests that investors are inclined to performance chasing and benchmarking. In addition, loss aversion makes risk reduction and safer assets more appealing during market drawdowns. This explains why observed flow responses do not always follow the pure real-rate signal directly.

Money illusion is central here because it asks whether investors process inflation-adjusted metrics at all. Money illusion and nominal framing can lead investors to focus primarily on nominally represented values, such as nominal yields, nominal account values as well as nominal performance metrics instead of pure real-yield information. In the integrated framework, money illusion can weaken the direct link between real yields and flows when nominal and real signals diverge, while still allowing real yields to matter indirectly through their effect on salient nominal outcomes. Money illusion is one of the reasons why real yields may operate more clearly in theory than observed investor behaviour.

The framework has three main elements. First, discounting and opportunity cost. Second, constraints-based amplifiers, such as liquidity and intermediary constraints. Third, investor information processing. The next figure illustrates conditional flowchart, followed by the propositions.

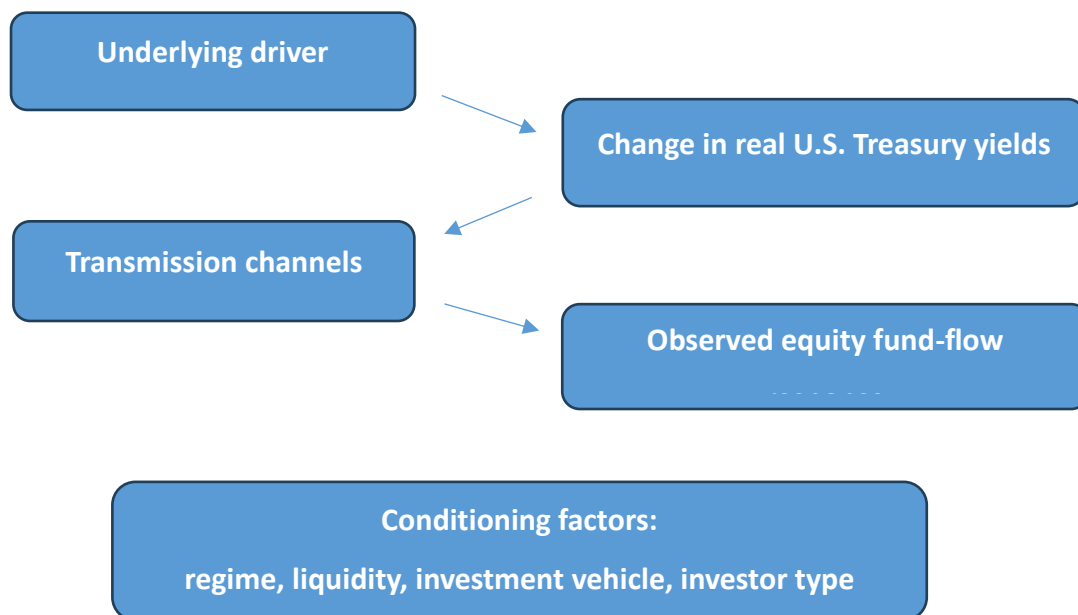


Figure 3. Conditional framework of the yield-flow link.

The idea of the propositions is not to predict any results in advance. They are intended to guide possible future testing and studies. The propositions are summarised below.

1. Baseline opportunity-cost logic. Falling real Treasury yields should be linked with net inflows to equity funds, and rising yields should drive net outflows.
2. Regime dependence. The yield-flow link should be stronger and more consistent during tightening or high-volatility regimes than during easing or low-volatility regimes.
3. Yield-component differences. The yield-flow link should be stronger when real yields are driven by expected real short-rate changes, and weaker when they mainly reflect term-premium or liquidity components.
4. Liquidity amplification. When market and funding liquidity are tight, a given real yield change should trigger larger and more clustered equity outflows.

5. Investment channel and vehicle differences. Flow responses should differ across investment vehicles, with slower adjustments where institutional frictions and restrictions are greater. In contrast, there should be faster adjustments where frictions and restrictions are not binding.
6. Behavioural aspects and nominal salience. The yield-flow link should weaken when nominal and real signals diverge, because flows are inclined to follow nominal indicators rather than real measures.
7. Asymmetry around losses. Weak equity performance combined with rising real Treasury yields should trigger stronger outflows compared to falling real yields combined with strong equity performance. Therefore, flow responses should be asymmetric.

The final chapter concludes the findings and uses this framework to answer the research questions and hypotheses directly, as well as outline practical implications and guide future research.

5 Conclusions and Implications

The main conclusion of this thesis is that this relationship between real Treasury yields and equity fund flows appears to be conditional. Real yield changes are related to equity fund flows, and these yield changes often coincide with weaker equity fund demand. However, the relationship is not stable. The relationship depends on what caused the initial move in real yield, how flows and yields are measured, and what kind of market conditions were involved.

Evidence suggests that the link is clearly strongest when the higher real yields reflect restrictive monetary policy and discount-rate-relevant shocks, especially in high-volatility or tightening periods. These conditions tend to lead to weaker investor risk appetite, and tighter liquidity reinforces reallocations away from equities, which become visible in measured fund flows. The link appears to be weaker or mixed when the yield increases reflect improved economic outlook, time-varying term premia, and liquidity constraints. This means that the thesis hypotheses are supported, but only conditionally.

Real yields are theoretically relevant for valuation and opportunity-cost logic, but they should be interpreted more critically as an allocation signal, because they are not an absolute guide to investor behaviour. Longer-maturity yields often combine both expected future short rates and time-varying premia and TIPS measures alone combine liquidity and segmentation effects. The “real” component itself is only an approximation of investors’ inflation-adjusted measure rather than a perfectly clean measure. In addition, fund flows are also affected by implementation delays, investment vehicle differences as well as different trading frictions. Overall, investors often react more to simple nominal values, recent performance, and to other visible market narratives.

Several practical implications can be derived from these findings. Instead of investors and advisors following real yields, they should interpret real yield changes together with their likely source. For example, the same outflow patterns should not be assumed if real

yields rise together with stronger growth expectations. Advisors and especially retail investors should avoid reacting mechanically to a single real yield movement in isolation. This also leads to the idea that investors should not always treat portfolio-manager objectives as their own, thus, a professional view can be useful. This is because yield movements should be weighted against underlying drivers and investors' own risk tolerance as well as their time horizon. This is especially relevant when assessing only the yield change and flow numbers in aggregate.

Risk tolerance differences are also one part of the practical implications. For example, many retail investors experience risk at a very basic level, such as the possibility of losing money, facing drawdowns, or seeing account values fluctuate sharply. Therefore, retail investors' decision-making is even more influenced by nominal returns and recent losses than institutional investors. Institutional investors may react differently because their decision-making is often constrained by rules and mandates, liquidity, shorter evaluation horizon, and performance relative benchmarking. It is possible that retail investors often think in terms of long-term investment. In contrast, institutional investors may be assessed yearly or even quarterly.

Since this is a literature review, it has limitations. It cannot estimate a single causal effect, but it can identify the recurring patterns around this relationship. The thesis evidence remains sensitive to the yield construction, flow measurement style, data frequency measures, prevailing market regime, and identification strategy. Therefore, future studies should aim their focus strictly to test this link across different market environments, separate expected short-rate changes from term-premium and liquidity effects, compare different investment vehicles, and separate retail and institutional investor groups.

In conclusion, real U.S. Treasury yields matter for equity fund flows, but in a context-dependent way. Real yields appear to be overstated as a stand-alone proxy for predicting flows and explaining investor behaviour. Real yields seem to matter mainly through the

broader discount-rate and risk environment. The observed fund flows therefore react more to valuation changes, realised returns, liquidity conditions, and more visible nominally framed rates. Overall, real yields remain relevant and do matter, but as an indirect and incomplete signal for investors.

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