



Mutual fund flows, expected returns, and the real economy

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ABSTRACT

This paper investigates the relation between mutual fund flows and the real economy. The findings of this paper support the theory that the positive co-movement of flows into equity funds and stock market returns is explained by a common response to macroeconomic news. Variables that predict the real economy as well as the equity premium – in particular dividend-price ratio, default spread, relative T-Bill rate and consumption-wealth ratio – are related to fund flows and can account for the correlation of flows and market returns. Furthermore, consistent with the information-response hypothesis, mutual fund flows are forward-looking and predict real economic activity.

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1. Introduction

Stock market returns and flows into equity funds are contemporaneously correlated: positive returns are accompanied by inflows into equity funds, and negative returns are accompanied by outflows or diminished inflows. Several competing theories provide explanations for this co-movement (Warther, 1995). The so-called *feedback-trader hypothesis* states that market returns cause fund flows. Investors buy fund shares as a response to rising prices and sell when prices fall, hereby causing the positive co-movement. But causality could also run the opposite way. Mutual fund investors may represent sentiment unrelated to fundamentals. Through this uninformed demand by fund investors stock prices may temporarily diverge from their fundamental values. This hypothesis, which claims that flows cause returns, is known as the *price-pressure hypothesis*. A third explanation, the *information-response hypothesis*, states that both stock market returns and fund flows together react to new information.

This paper adopts a new approach in testing whether reaction to information explains the co-movement of fund flows and returns. In particular, the paper explores whether a specific sort of information, namely macroeconomic information, is related to mutual fund flows. I take two indirect methods for testing this. First, I consider predictive variables as proxies for macroeconomic news. These predictive variables are forward-looking, i.e. they predict real economic activity as well as the equity premium. If mutual

fund flows react to information about the real economy we should observe a co-movement of flows and first differences of these forward-looking variables. Second, I investigate if mutual fund flows in themselves contain information. If mutual fund investors respond to information, e.g. by buying at good news and selling at bad news, and if they are *on average* right, then the state of the economy should be worse after outflows and better after inflows into mutual funds (see e.g. Roll, 1984 for a similar argument). Thus, if mutual fund investors react on macroeconomic news, then mutual fund flows, along with stock market returns, should be able to predict economic activity. Lastly, I study flows of different fund categories and their relation to predictive variables.

The results of this paper can be summarized as follows. Mutual fund flows are indeed related to predictive variables, and in particular to dividend yield. In line with the information-response hypothesis, mutual fund flows are also related to other variables that predict the equity premium and the real economy: an increase in default spread or consumption-wealth ratio (*cay*), both indicating riskier times, is associated with outflows; an increase in relative T-Bill rate, indicating less risky times, is associated with inflows into equity funds. Overall, predictive variables describe fund flows considerably better than stock market returns alone. While stock market return explains about 40.8 percent of the variation of unexpected mutual fund flows, predictive variables explain up to 51.7 percent. Furthermore, predictive variables can account for the correlation between fund flows and market returns. With regard to the second hypothesis, I find that mutual fund flows – like stock prices – are forward-looking. Mutual fund flows predict future economic activity, measured by real GDP, industrial

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production, consumption and labor income. These findings support the theory that market returns and mutual fund flows simultaneously react to macroeconomic news. Furthermore, at news of bad times fund investors leave riskier asset classes and enter less risky ones. Fund flows of growth funds, which can be considered riskier than income funds, have a higher correlation with market return than income funds and also have a higher exposure to predictive variables.

These results are consistent with other studies that analyze aggregate fund flows and market returns (Warther, 1995; Edelen and Warner, 2001; Rakowski and Wang, 2009). While these studies find evidence in favor of information as common driver of both flows and returns, their findings are ambiguous with respect to other explanations. Warther (1995) concludes that the co-movement of flows and returns is either explained by response to information or by price pressure. In order to disentangle competing theories Edelen and Warner (2001) turn to daily data, but despite the high frequency their results are consistent with either a common response to information or feedback trading. This paper looks at the information-response hypothesis from a different angle and develops two new testable implications, which when tested provide additional support for the information-response hypothesis. Moreover, this paper addresses the question, *which* information matters to mutual fund investors by showing that macroeconomic information is an important determinant of fund flows.

The results of this paper are not only interesting for the question of what explains the co-movement of flows and market returns but also for the question of portfolio choice and tactical asset allocation. A wide literature explores how investors can use predictive variables in order to improve their portfolio performance (e.g. Brennan et al., 1997; Campbell and Viceira, 1999; Barberis, 2000; Campbell and Viceira, 2002, among others).¹ From a tactical asset allocation standpoint mutual fund investors seem to make just the “wrong” decisions: mutual fund investors sell stocks, when predictive variables signal high expected returns, and they buy stocks when predictive variables signal low expected returns. The important thing to note, however, is that not *all* investors can follow a tactical asset allocation strategy (Cochrane, 2011). Someone has to take the other side of each buy or sell transaction. And this decision of course depends on *differences* in investors and their preferences.

One can also look at this from a different perspective: It is exactly *because* some investors sell at news of bad times, that we observe time-varying expected returns in the first place. Take the rational explanation of why expected returns change over time (e.g. Fama and French, 1989; Cochrane, 1994; Lettau and Ludvigson, 2001): in a recession, some people are less willing to hold risky assets and consequently will reduce their equity holdings. Those investors who are willing to shoulder stock market risk in adverse economic times have to be compensated in equilibrium, which results in higher expected returns in bad times. The results presented in this paper suggest that mutual fund investors belong to the group of investors who are less willing to hold equity in poor economic times.² Thus, mutual fund investors responding to macroeconomic news and an equity premium varying over the business cycle can be seen as two sides of the same coin.

¹ For a summary of the literature see Cochrane (2007).

² Theoretically, there are two other cases: First, if mutual fund investors do not differ from the average investor, then bad news should lead to negative returns but no portfolio adjustment by mutual fund investors. In this case we would observe no correlation between fund flows and stock market returns. Second, if mutual fund investors tend to take more risk in bad times, then bad news should lead to negative returns and positive inflows. In this case we would observe a negative correlation between fund flows and market returns. Thus, the fact that we observe a positive correlation between fund flows and returns is consistent with the theory that mutual fund investors are reacting to information *and* that they are less than average willing to hold equity in bad times.

Different preferences or high idiosyncratic income risk may be the reason for mutual fund investors' lower willingness to hold equity in poor economic times. Mutual fund investors are predominantly private investors, who are probably more severely affected by a recession than their institutional counterparts. Moreover, within the group of retail investors mutual fund investors are special. Mutual funds provide a low cost access to the equity market (Fama and French, 2002) allowing certain investors, which may not have done so otherwise, to participate in the stock market. These investors, however, are presumably more affected by economic contractions and thus more likely to sell stocks when there is bad news about the economy.

The findings presented in this paper also offer a new perspective on the question of the performance of mutual fund investors as a group. Among others Nesbitt (1995), Friesen and Sapp (2007) and Ben-Rephael et al. (2012) give evidence that mutual fund investors have poor market timing ability – that is, they earn lower returns than the market. With respect to the cross section of stock returns Frazzini and Lamont (2008) find that mutual fund investors also make poor investment decisions referring to this as the “dumb money” effect. Ciccotello et al. (2011) show that these timing effects, along with capacity effects, are of importance when analyzing portfolio manager skill. Regarding the market timing ability of fund investors the results of this paper provide an explanation for the lower returns realized by fund investors. Mutual fund investors seem to be less willing to bear risk in bad times, and therefore should also earn a lower expected return in equilibrium.

2. Related literature

This paper connects and contributes to several strands of literature. First and foremost, it expands the literature that investigates aggregate fund flows and their relation to stock market returns. Warther (1995), one of the first to examine fund flows and their relationship to security returns, documents a significant contemporaneous correlation between stock market returns and mutual fund flows at a monthly frequency. As regards explanations for this co-movement, Warther concludes that stock returns and fund flows move together either because of price pressure or because of a common response to information. The return-reversal tests performed by Warther provide no evidence for the presence of price pressure and thus point to the information-response hypothesis, however the reversal tests are admittedly not very powerful.

To disentangle causality between flows and returns, Edelen and Warner (2001) turn to high-frequency data. However, evidence with regard to one or the other explanation is, despite the high frequency, mixed. This paper takes a different approach. Rather than examining high frequency flows, I investigate low frequency flows and their link to the real economy, since ultimately the decision to invest into financial assets cannot be isolated from the real economy. The results at this lower frequency are consistent with the results at higher frequencies, e.g. with Rakowski and Wang (2009) who find a dominant information effect in fund flows.

This article links the studies on aggregate mutual fund flows to the broader literature on time-varying equity premium and asset prices. Several variables have been found to predict the equity premium, and these predictive variables are related to the business cycle.³ In this paper I argue that mutual fund flows reacting to macroeconomic news and an equity premium varying over the business cycle can be seen as two sides of the same coin. The link between mutual fund flows and predictive variables provides new evidence with regard to investor heterogeneity (see, e.g. Mankiw, 1986; Du-

³ See Table 4 for a summary of the literature.

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