Asset allocation and monetary policy: Evidence from the eurozone☆

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ABSTRACT

The eurozone has a single short-term nominal interest rate, but monetary policy conditions measured by real short-term interest rates varied substantially across countries in the period 2003–2010. We use this cross-country variation in the (local) tightness of monetary policy to examine its influence on equity and money market flows. In line with a powerful risk-shifting channel, we find that fund investors in countries with decreased real interest rates shift their portfolio investment out of the money market and into the riskier equity market, causing significant equity price inflation in countries where investment home bias is the strongest.

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1. Introduction

Following the worst financial crisis (2007–2009) since the Great Depression, a controversial debate has focused on the role of monetary policy for asset price inflation and financial risk taking in general. Critiques of US monetary policy have asserted a powerful risk-taking channel whereby excessively low monetary policy rates induce more risky asset allocations by various economic agents (Adrian and Shin, 2010; Borio and Zhu, 2012; Rajan, 2006). Households, as well as financial intermediaries, could seek higher risk in search of higher yields, and such return chasing can impact leverage and asset prices (De Nicolò, Dell'Ariccia, Laeven, and Valencia, 2010; Gambacorta, 2009; Rajan, 2006; Taylor, 2008). The exceptionally low (and even

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negative) real short-term interest rate in the current post-crisis environment raises the concern that leverage adjustment is delayed and asset risk allocations are distorted again.

The idea that low real rates for credit can trigger an expansion of leverage accompanied by an asset price boom has a long economic history dating back to Wicksell (1898).[1] Low real interest rates for riskless investments can entice investors to seek more risky investment positions. The risk-taking channel could operate through increased opportunity costs to investment in low return assets, lower investor risk aversion in periods of low real rates, or less stringent funding conditions for leveraged investments.

Empirically, evaluating the effect of monetary policy on investor behavior faces two types of endogeneity issues. First, the nominal rate setting by a monetary policy authority is a function of business cycle conditions. Such an endogenous nominal rate-setting process makes it difficult to determine whether investors react to the nominal rate change itself or to the business cycle condition. Second, given that local (or national) business cycles can exert influence on local inflation (and, hence, the local real short rate), any evidence of an association between investor equity flows and the real short rate can be a manifestation of both driven by local business cycles.

This paper seeks to address both endogeneity challenges. To deal with the endogenous nominal rate setting, we focus on the eurozone. We use the monetary policy process in the eurozone, with its different national real short-term interest rates, to identify how geographic variation in monetary policy conditions affects investors' asset allocations to equity and money market funds.[2] In a currency union, the central bank is constrained to set only one single short-term nominal interest rate for the entire currency area. Therefore, the endogeneity concern is greatly mitigated in our study because we focus on deviations of local monetary policy conditions from eurozone averages (namely, deviations of national real short-term interest rates from eurozone averages). This allows us to explore investors' investment allocations as a reaction to unintended geographical monetary policy variations. For example, the European Central Bank (2012) (ECB) is unlikely to adjust its short-term nominal interest rate just because Spain experiences a higher inflation rate relative to the eurozone average, implying that the nominal rate setting is no longer a function of the local business cycle as it would be under the rate setting by an autonomous Spanish central bank. The difference between the Spanish real interest rate and the eurozone average is (by construction) orthogonal to the ECB nominal rate-setting process.[3]

The second endogeneity issue concerns the local inflationary component of the real rate. Even though the nominal rates are set in Frankfurt, Germany, based on euro area aggregates, the Spanish inflation rate itself is affected (or even driven) by the Spanish business cycle. Therefore, any correlation between Spanish fund investors' risk shifting into equity and a lower Spanish real rate could be a result of changes in aggregate demand (income channel) or higher expected local firm cash flows (cash flow channel) in Spain affecting both investor asset allocation and the inflation rate, rather than a result of investor risk shifting in response to the low real rate itself (risk-taking channel). We employ three empirical strategies to distinguish the risk-taking channel from the two alternative channels.

First, we use control variables that proxy for contemporaneous changes in local aggregate output, output gap, credit growth, value-added tax, and return on assets of local firms to explore whether these variables attenuate the correlation between local real rate changes and local equity fund flows. These income and corporate cash flow measures should represent better proxies for the contemporaneous business cycle than the real short rate because inflation (and, thus, the real rate) typically features a more sluggish response to business conditions (due to nominal price stickiness). Inclusion of such control variables in the regression should attenuate the estimated fund flow effect of the real rate if the income and cash flow channels matter much for fund flows. Yet, we find no evidence that these control variables have any significant explanatory power for equity fund flows, whereas the real rate change retains its explanatory power.

Second, under nominal price stickiness and inflation persistence (Álvarez, Dhyne, Hoeberichts, Kwapil, Bihan, Lünnemann, Martins, Sabbatini, Stahl, Vermeulen, and Vilmunen, 2006; Andersson, Masuch, and Schiffbauer, 2009), we can instrument the real rate change with its lagged values, thereby restricting the direct influence of contemporaneous business cycle conditions on the estimated fund flow effect of the real rate. Third, we disaggregate equity funds into those with a local investment focus and those with a foreign investment focus. The latter consists of funds that invest more than half their fund assets in foreign stocks. Such fund flows should not be driven by time-varying cash flow expectations related to local business cycles but rather by business cycles in the foreign investment destination. However, we find that equity fund flows with a foreign investment destination react to the local real rate variations as strongly as flows of funds with a purely domestic investment focus. Taken together, the evidence suggests that investor risk shifting toward more leveraged equity positions does occur in reaction to changes in the local real rate.

Constrained by data availability, our analysis focuses on investor flows into mutual funds during the period

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[1] Hellwig (2011) suggests that such Wicksellian dynamics represent a salient feature of southern Europe's recent boom and bust cycle.

[2] A well-documented strong investor bias toward nationally distributed investment funds [see, e.g., the survey paper by Sercu and Vanpee (2007)] allows us to link local relative monetary conditions to fund-level inflows and outflows in the equity and money markets of different eurozone countries.

[3] We also verify that the ECB's nominal rate-setting process does not affect the future real short rate SR asymmetrically across countries in a way that depends on their current real short rates. We regress the local inflation changes ($\Delta INF_{c,t}$) for each country c at quarter t on lagged euro

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overnight interest rate changes ($\Delta EONIA_{t-k}$), the real short rate ($SR_{c,t-k}$), and $\Delta EONIA_{c,t-k} \times SR_{c,t-k}$ in the past one to four quarters ($k = 1, 2, 3, 4$), as well as the country fixed effects. We find no evidence that any of the interaction term $\Delta EONIA_{t-k} \times SR_{t-k}$ is statistically significant.