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ABSTRACT

We decompose the returns differential between U.S. portfolio claims and liabilities into the composition, return, and timing effects. Our most striking and robust finding is that foreigners exhibit poor timing when reallocating between bonds and equities within their U.S. portfolios. The poor timing of foreign investors—caused primarily by deliberate trading, not a lack of portfolio rebalancing—contributes positively to the U.S. external returns differential. We find no evidence that the poor timing is driven by mechanical reserve accumulation by emerging market countries; rather, it is driven almost entirely by the poor timing of rich, developed (mainly European) countries. Finally, while poor foreign timing appears to be persistent across subsamples, other terms in our decomposition (the composition and return effects and U.S. timing abroad), as well as the overall differential, are sometimes negative, sometimes positive, and usually indistinguishable from zero.

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1. Introduction

The year 2007 proved to be a volatile one for financial markets. It was also a year during which both foreign net *purchases* and foreign net *sales* of U.S. equities reached record monthly levels. The record foreign net purchases occurred in May, and were followed by declines in the S&P500 of 1.7 percent in June and 3.1 percent in July. The record foreign net sales occurred in August, and were followed by a 3.7 percent increase in the S&P500 in September. In October foreign investors once again piled into U.S. equities; as before, the S&P500 fell the following month, losing 4.2 percent. So 2007 could not have been a happy year for foreign investors in U.S. equities. On top of a 9 percent dollar depreciation against major currencies, foreigners showed poor timing in their equity purchases and sales—they were net buyers when the market was about to fall and net sellers when the market was poised to rise.

In this paper we investigate the impact of market timing—specifically, reallocation among portfolio asset classes—on the performance of foreign investors in the United States compared to that of U.S. investors abroad. Focusing on bond and equity portfolios, we calculate the returns differential between what U.S. investors earned on their foreign positions ("U.S. claims") and what foreign investors earned on their U.S. positions ("U.S. liabilities"). We decompose the returns differential into three components: the composition, return, and timing effects. The first two—the composition and return effects—capture *average* characteristics of U.S. cross-border claims and liabilities. The composition effect is positive if U.S. claims on foreigners are weighted toward asset classes with higher average returns. The return effect is positive if U.S. investors earned higher average returns within each asset class. The third effect, timing, is

driven by reallocations among different asset classes and captures the covariance between current weights and subsequent returns. A positive covariance between current asset weights—themselves the outcome of a passive buy-and-hold strategy or active trading—and subsequent asset returns means that portfolios are correctly positioned to capture subsequent returns. If portfolio weights and subsequent returns covary more positively in U.S. claims than in U.S. liabilities, the timing effect is positive.

Understanding the sources of the returns differential is important for several reasons. As pointed out by Lane and Milesi-Ferretti (2005), the U.S. gross external claims and liabilities positions are so large that even a small returns differential has significant implications for the U.S. net international investment position. Also, understanding the components of the returns differential may help researchers evaluate its persistence and role in the sustainability of global current account imbalances. Furthermore, documenting the dynamics of gross asset class allocation is relevant to the growing literature on portfolio dynamics in open economy macroeconomics (Engel and Matsumoto (2006), Devereux and Saito (2006), Tille and Wincoop (2007)). Finally, evaluating the timing ability of foreign investors contributes to the literature on information asymmetries between foreign and domestic investors (Dvorak (2005), Choe, Kho and Stulz (2005), Brennan et al. (2005)).[1]

Our paper differs from existing work in two important ways. First, while the composition and return effects have been studied (e.g., Gourinchas and Rey (2007)), the role of timing in the returns differential has not. Our decomposition, which is inspired by

[1] Our study is related to the empirical literature on international capital flows, which includes (but is not limited to) Tesar and Werner (1994), Brennan and Cao (1997), Taylor and Sarno (1997), Chuhan et al. (1998), Montiel and Reinhart (1999), Froot et al. (2001), Bekaert et al. (2002), Griffin et al. (2004), Portes and Rey (2005), Richards (2005), Edison and Warnock (2008), and Warnock and Warnock (2008).

performance evaluation techniques from the finance literature (Grinblatt and Titman (1993)), enables us to separate the effect of *average* portfolio characteristics (such as the composition and return effects) from market timing, and to evaluate the role of timing in the returns differential. The second way our analysis differs from previous work is that we use information on the actual composition of bond and equity portfolios matched with more precisely estimated returns by country. Earlier work on the composition and return effects uses implied returns from datasets that Curcuru, Dvorak and Warnock (2008) and Curcuru, Thomas, and Warnock (2009) show are internally inconsistent. In contrast, we use monthly data on the country and asset class composition of U.S. portfolio claims and liabilities from January 1994 to June 2007. By matching country and asset class weights to corresponding total market returns (and by being careful with, for example, the currency composition by asset class and country), we are able to obtain more accurate estimates of the returns differential and its underlying components. Data on bilateral positions also have the advantage of allowing us to distinguish differentials by country, which can shed additional light on factors that are behind our main results.[2]

We find that the timing of reallocations among equities and bonds is a quantitatively and statistically important component of the overall returns differential. Specifically, we find that foreign investors in the United States exhibit poor timing, tending to have a relatively high equity weight when U.S. equity prices have already peaked and a relatively low equity weight when U.S. equity prices are poised to rise. In contrast, the foreign timing of U.S. investors is not statistically different from zero. On

[2] It should be noted at the outset that by focusing on high quality data on bond and equity portfolios, we are necessarily excluding foreign direct investment (FDI), another important component of cross-border positions. With FDI included the overall differential is somewhat larger (Curcuru, Dvorak, and Warnock 2008; Curcuru, Thomas, and Warnock 2009).

net, the difference between the timing effects of foreign investors in the United States and U.S. investors abroad adds over one-half percentage point per year to the overall annual returns differential.

We also differentiate between two underlying components of the timing effect, active trading and the more passive failure to reallocate after the portfolio's composition is altered by valuation changes. The more active component—the trading effect, a widely accepted metric of portfolio performance originated by Grinblatt and Titman (1993)—summarizes whether investments were shifted into asset classes that subsequently rose in value. We find systematic evidence that active trading plays an important role in the poor timing of foreign investors in the United States over our 162-month sample period. In contrast, we do not find that active trading significantly impacts U.S. investors' returns abroad.

We perform a number of robustness checks. First, we examine whether our results are driven by the accumulation of U.S. bonds by foreign official institutions, in particular the governments of emerging market countries. We find that this is not the case. The results are, in fact, much stronger for developed countries and carry through to private foreign investors. An examination of the foreign timing of individual countries shows that it is precisely the rich developed countries that are behind the poor foreign timing result. Many developed countries, especially from Europe, exhibit statistically significant poor timing in shifting between U.S. equities and U.S. bonds. Finally, poor timing by foreign investors appears persistent as it is statistically significant across different subsamples. In contrast, all other terms in our decomposition (the composition and return

effects and U.S. timing abroad), as well as the overall differential, are sometimes negative, sometimes positive, and usually indistinguishable from zero.

The paper proceeds as follows. In the next section we discuss the underlying data on international portfolios and returns characteristics. In Section 3, we decompose the returns differential into the composition, return, and timing effects; examine these effects by type of investor and country; and then further decompose the timing effect into its active and passive components. In the conclusion (Section 4) we summarize and briefly discuss some possible reasons for poor foreign timing.

2. Characteristics of U.S. Portfolio Claims and Liabilities

Our technique to form portfolio returns is as in Curcuru, Dvorak, and Warnock (2008): Observe monthly portfolio weights and then calculate one-month returns using indexes that mimic (to the extent possible) the composition of those portfolios. In this section we describe the underlying data as well as the characteristics of the resulting bilateral bond and equity positions and within-asset-class returns.

2.1 Positions

We use the highest quality dataset available on the monthly portfolio bond and equity investment positions of U.S. investors abroad and foreign investors in the United States. A description of the technique used to construct the monthly positions data is in Bertaut and Tryon (2007). Briefly, monthly bilateral investment positions are constructed using two types of data reported by the Treasury International Capital Reporting System (TIC): infrequent but highly accurate benchmark surveys of holdings (both foreign holdings of U.S. securities and U.S. holdings of foreign securities) and net monthly

transactions (both net purchases of U.S. assets by foreigners and net purchases of foreign assets by U.S. residents). Bertaut and Tryon (2007), building on a technique originated in Thomas, Warnock, and Wongswan (2006), bring these data sources together to produce high-quality estimates of monthly positions of U.S. claims and liabilities. The data cover portfolio investment in long-term securities, specifically debt instruments with greater-than-one-year original maturity ("bonds") and equities.

Two features of our dataset should be noted. One, we include only those countries for which we have at least fifty monthly observations for both equity and bond returns between January 1994 and June 2007. This leaves us with 19 developed countries and 17 emerging markets. These 36 countries make up most of U.S. portfolio investment abroad as well as most foreign investment in the United States.[3] Two, the TIC data distinguish between private and official positions only at the aggregate level, so our country-level analysis groups together official and private investors. We recognize that foreign official purchases of U.S. assets may occur for reasons other than mean-variance optimization. Except for Japan, private positions dwarf official holdings in developed countries, but for emerging market countries official positions are likely to be more important. In robustness checks we delve further into this issue.

2.2 Returns

The monthly bilateral positions dataset provides time-varying portfolio weights. To calculate one-month returns we must select returns indexes that mimic (to the extent possible) the composition of those portfolios. Ideally, we would build up specific returns

[3] In 2004, the countries in our sample account for 84 percent and 80 percent of U.S. equity and bond investment abroad and 77 percent and 73 percent of all foreigners' equity and bond investment in the United States. Of the international investment that we do not cover, Caribbean financial centers (CFCs) account for more than half. Note that about 75% of U.S. holdings of long-term debt securities issued in the Caribbean is backed by U.S. assets, raising the question of just how international it is.

indexes based on the weights of each U.S. security in foreigners' portfolios and of each foreign security in U.S. investors' portfolios. Such weights are technically available at infrequent intervals; they are the foundation of the comprehensive, security-level benchmark surveys of international holdings that the U.S. government conducts. That said, the security-level weights are confidential (one must be covered under the International Investment Act of 1987 to view the security-level weights) and the very few people who do have access have not processed the data in a way that would enable the formation of returns indexes. Given that custom security-level return indexes do not exist, we must rely on the next best solution: Find off-the-shelf returns indexes (and, sometimes, combinations of off-the-shelf indexes) that mimic, to the extent possible, what we have learned from the benchmark surveys about cross-border investment into and out of the United States.

While it is unlikely that investors hold portfolios that exactly mimic returns indexes, research that analyzes the security-level portfolio weights at a point in time gives us a reasonably good understanding of the *types* of securities that make up the bulk of cross-border positions. For example, Cai and Warnock (2008) show that within their U.S. equity portfolios foreigners tend to overweight large, liquid equities, exactly the type that would comprise a large-cap index. We use the MSCI U.S. index, a market-capitalization-weighted index of roughly 300 large and liquid U.S. firms.[4] For foreign equities, MSCI firms represent almost 80 percent of U.S. investors' foreign equity investment (Ammer et al. 2006), so we use dollar returns on each country's gross MSCI equity index.

[4] Our results are nearly identical when we use the S&P 500 index (not reported). We use the MSCI index because the S&P 500 included almost 20 foreign firms prior to 2002 and still includes some firms with U.S. headquarters that are incorporated outside of the United States (for example, Tyco International and Schlumberger). U.S. data on transactions and holdings classifies such firms as foreign.

Data on debt securities returns are gathered from a variety of sources. For U.S. debt securities, we have the breakdown of each country's monthly positions in U.S. Treasury, corporate, and agency bonds. Thus, for each country we form a U.S. bond return as the weighted average of Lehman Brothers U.S. Treasury, Corporate and Agency Bond Indexes, with the weights given by country-specific positions in each type of bond. Foreign investors, especially those from emerging markets, tend to overweight Treasury and agency bonds relative to a broader market-capitalization benchmark such as the Lehman Brothers Aggregate U.S. Bond Index, so it is important to use the actual weights of a country's investors to produce an accurate measure of returns. For foreign bonds, as a first approximation U.S. investors tend to hold local-currency bonds in developed countries and dollar-denominated bonds in emerging markets (Burger and Warnock 2007). But we go a step further and form country-specific indexes based on the shares of U.S. holdings in each country that are dollar-denominated and local-currency-denominated. For U.S. holdings of emerging market debt we calculate the return on holdings in each country as the weighted average of the J.P. Morgan's EMBI+ index (which is comprised of dollar-denominated bonds) and ELMI+ index (which consists of local-currency-denominated bonds); for each country the weight on the EMBI+ index is the share of dollar-denominated bonds in U.S. holdings of that country's bonds. For developed countries we calculate returns as the weighted average of the GBI Broad 1-10 year bond index (which consists of local-currency-denominated bonds) and the Lehman Corporate Eurodollar index (an index of dollar-denominated bonds); for each country the weight on the Eurodollar index is the share of dollar denominated bonds in U.S. holdings of that country's bonds.[5]

[5]There are a few exceptions. For U.S. holdings of the debt of Norway and Sweden, we use bond return data

The preceding paragraphs describe how we form individual countries' returns indexes. To calculate returns on the aggregate U.S. portfolios of foreign bonds (or foreign equities), we weight each country according to U.S. investors' bond (or equity) holdings in that country. The average weight of each country in U.S. foreign equity and bond portfolios and the average returns on each country's equities and bonds appear in Table I.

Our sample period covers the 162 months between January 1994 and June 2007. The starting point is determined by the availability of EMBI+ bond indexes, which start in December 1993. The ending point is determined by the availability of U.S. foreign asset positions, which are currently available through June 2007. For some countries, equity or bond returns data start after January 1994. We add these countries to the U.S. asset and liability portfolios when the data for both equity and bond returns become available (see the last column in Table I). Countries added after January 1994 tend to have very low weights in both U.S. claims and liabilities portfolios, so our results are nearly identical if we restrict our study to countries with returns data for the entire sample period.

2.3 Descriptive statistics

Table II shows the descriptive statistics for aggregate equity weights in U.S. portfolio claims and liabilities and aggregate returns on U.S. and foreign bonds and equities. It is evident from Panels A and B that U.S. claims are weighted heavily toward equities, while U.S. liabilities are weighted toward bonds. This resembles the "venture capitalist" capital structure of the U.S. external balance sheet pointed out by Gourinchas and Rey (2007). Specifically, the mean equity-to-bond ratio in U.S. claims is 72:28 across all countries, with equities having a higher weight in U.S. investors' developed

from Bloomberg. For holdings of Indian and Thai debt we use the GBI EM Broad Traded index.

country portfolios (73:27 equity-to-bond ratio) than in their emerging market portfolios (64:36). By contrast, the mean equity-to-bond ratio in U.S. liabilities is 41:59, and is much higher in the portfolios of developed countries (45:55) than in emerging markets countries (8:92).

Equity and bond returns are shown in Panels C and D, respectively. Note at the outset that, while over short periods returns differentials are driven mainly (but not solely) by dollar exchange-rate movements, over our 162-month sample the dollar depreciated only slightly. For example, for the short period from end-2001 to end-2004 the dollar depreciated 10 percent per year against the currencies of developed countries (that is, the Fed's Major Currencies Index fell 10 percent per year), but from January 1994 to September 2003 it was flat, and over our whole sample it depreciated only 9.2 basis points per month. For our sample the effect of exchange rate movements on the returns differentials is small, but the effect in shorter samples can be sizeable.[6]

Panel C shows that over the period from 1994 through June 2007 average returns were slightly higher on U.S. equities (0.97 percent per month) than the dollar returns on U.S. investors' portfolio of foreign equities (0.91 percent per month overall, with 0.93 in developed countries and 1.07 in emerging markets).[7] For bonds (Panel D), dollar returns on developed country bonds (0.53 percent per month) were somewhat higher than returns on U.S. bonds (0.46), while dollar returns on emerging market bonds were much higher (0.85).

[6] See, for example, Lane and Milesi-Ferretti (2005) and Forbes (2007, 2008).

[7] It may seem counterintuitive that the average return on foreign equities in all countries is lower than the average return on either developed countries or emerging markets. At any point in time the return on all-countries portfolio must be between the return on developed and emerging countries portfolios. However, this does not hold for the time-series average of returns, as relatively high returns in emerging markets occurred when their weight in the all-countries portfolio was relatively low, contributing little to the average return on the all-country portfolio. Put differently, with time-varying weights a time-series average of a weighted average of two series need not be bound by the time-series averages of the two series.

3. The Returns Differential and its Decomposition

In this section we formally decompose the sources of the returns differential into three components; the composition, return, and timing effects.

3.1 Methodology

The average return on any portfolio *p* can be written as the time series average of the sum of the products of lagged asset weights and returns:

$$\bar{r}^{\,p} = \frac{1}{T}\sum_{t=1}^{T}\sum_{j=1}^{N} w_{j,t-1}^{p} r_{j,t}^{p} \tag{1}$$

where $w^{p}_{j,t-1}$ is portfolio weight of asset *j* at the end of period *t-1* (the beginning of period *t*), $r^{p}_{j,t}$ is the period *t* return on asset *j* in portfolio *p* and *N* is the number of assets in the portfolio. Note first that that equation (1) can be also written as:

$$\bar{r}^{\,p} = \sum_{j=1}^{N} \bar{w}_{j}^{\,p} \bar{r}_{j}^{\,p} + \frac{1}{T}\sum_{t=1}^{T}\sum_{j=1}^{N} (w_{j,t-1}^{p} - \bar{w}_{j}^{\,p}) r_{j,t}^{p} \tag{2}$$

where $\bar{w}_{j}^{\,p}$ and $\bar{r}_{j}^{\,p}$ are the time-series averages of the weights and returns on asset *j*. Equation (2) shows that the average portfolio return has two components: (i) average returns and average holdings, and (ii) the covariance of portfolio weights with subsequent returns. For investors whose portfolio weights and future returns move together, these covariances will tend to be positive. Note that if either returns or weights remain constant, the second term in (2) is zero and the portfolio return will depend only on average weights and average returns. If, as is more likely, investors change their portfolio weights and returns are not constant, the second term is potentially important.

Using equation (2) to express the average returns on U.S. claims, $\bar{r}^c$, and liabilities, $\bar{r}^l$, the returns differential can be written as:

$$\begin{aligned}\bar{r}^c - \bar{r}^l = & \sum_{j=1}^{N} \frac{(\bar{r}_j^c + \bar{r}_j^l)}{2} (\bar{w}_j^c - \bar{w}_j^l) \\ & + \sum_{j=1}^{N} \frac{(\bar{w}_j^c + \bar{w}_j^l)}{2} (\bar{r}_j^c - \bar{r}_j^l) \\ & + \frac{1}{T} \sum_{t=1}^{T} \sum_{j=1}^{N} (w_{j,t-1}^c - \bar{w}_j^c) r_{j,t}^c \\ & - \frac{1}{T} \sum_{t=1}^{T} \sum_{j=1}^{N} (w_{j,t-1}^l - \bar{w}_j^l) r_{j,t}^l \end{aligned} \tag{3}$$

Each line in equation (3) represents a component of the decomposition of the difference between the returns on U.S. claims and liabilities. The first line, the *composition effect*, is the sum of the differences between the average weights of each asset class in U.S. claims and liabilities, multiplied by the average of the claims and liabilities returns for the asset class. If U.S. and foreign investors put the same average weight on each asset class, the composition effect is zero. If U.S. investors put a higher weight on asset classes with higher average returns, the composition effect would be positive.

The second line, the *return effect*, is the sum of the differences between average claims and liabilities returns within each asset class, multiplied by the average weight of the asset class in claims and liabilities. If each asset class has the same average return in claims and liabilities, the return effect is zero. If average returns in each asset class tend to be higher for U.S. claims than for U.S. liabilities, the return effect will be positive.

The *timing effects* are captured by the third and fourth lines. Each line is a sum of sample covariances between investors' weights on each asset class and subsequent returns on that asset class. This is a version of Grinblatt and Titman's (1993) measure of

portfolio performance.[8] If U.S. investors put relatively high weights on assets that have subsequent high returns, these covariances will be positive and will contribute positively to the aggregate returns differential. In contrast, positive covariances between foreign investors' weights and subsequent returns will contribute negatively to the aggregate returns differential: The better the timing of foreign investors in the United States, the lower the return on U.S. claims relative to U.S. liabilities. Therefore, foreign timing enters equation (3) with a negative sign.

3.2 Return, Composition and Timing Effects

In Table III we decompose the difference between the return on U.S. claims and liabilities into the composition, return, and timing effects. The composition effect is positive because U.S. claims are on average weighted toward equities, which have higher average returns than bonds. The composition effect is larger vis-à-vis emerging market countries (about 2.6 percent per year) than developed countries (about 1.5 percent per year). In neither case, however, is the composition effect statistically significant.[9]

The return effect is essentially zero. This indicates that within asset classes, U.S. claims and U.S. liabilities tended to have similar returns over this sample period. Although U.S. investors earned slightly more on foreign bonds than foreigners earned on

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[8] In general, the Grinblatt and Titman (1993) measure can be written as $\frac{1}{T}\sum_{t}\sum_{j}(w_{j,t-1} - E[w_{j,t-1}])r_{j,t}$

where $E(w_{j,t-1})$ is the expected weight on asset j at t-1 that needs to be estimated. As discussed in Wermers (2006) there are many approaches to estimating this expected weight. One possibility is to use the time-series average weight as an estimate of the expected weight. Our timing effect uses this approach. Another possibility, suggested by Ferson and Khang (2003), is to use buy-and-hold weights as an estimate of expected weights. Our trading effect, discussed below, uses the buy-and-hold weight as an estimate of the expected weight.

[9] Because the composition effect is a product of two averages, its distribution is unknown. In order to assess statistical significance of the composition effect, we calculate its standard error using bootstrapping. We obtain 1000 different samples by drawing 144 observations from our data with replacement 1000 times. Using these samples we calculate 1000 compositions effects. The standard error of our original composition effect is the standard error of these 1000 composition effects. The z-statistic reported in the table is the original composition effect divided by the bootstrapped standard error.

U.S. bonds, U.S. investors earned slightly less on foreign equities than foreigners earned on U.S. equities. The differences in returns within each asset class almost completely offset each other.

The last two columns in Table III show the foreign and U.S. timing effects; that is, the sums of covariances between asset weights and subsequent returns. Across all countries, the foreign timing effect is on average negative and statistically significant. This means that foreign investors have relatively high weights on U.S. assets with subsequently low returns. The size of the effect is 5.6 basis points per month. Thus, poor timing by foreign investors reduces their U.S. return by 67 basis points per year and positively contributes to the returns differential. In fact, negative foreign timing is the only statistically significant term in the decomposition of the returns differential between U.S. claims and liabilities. The U.S. timing effect is also negative, but is considerably smaller and not statistically significant.

The timing effect can be depicted graphically by comparing the dynamics of portfolio weights (for foreigners, within their U.S. portfolios; for U.S. investors, within their foreign portfolios) on bonds and equities with the time variation of relative returns. Figures 1 and 2 show a depiction of this relationship. The top panel in each figure shows year-over-year returns in equities and bonds; the bottom panel in each shows equity weights from actual portfolios (the thick lines) and theoretical 24-month buy-and-hold equity weights (thin lines).[10] If investors do not actively alter portfolio weights, the actual and 24-month buy-and-hold weights will be identical. Any deviation of the actual from the 24-month buy-and-hold equity weights is indicative of active trading. Specifically, if

[10] The buy-and-hold equity weight series begins only in January 1996 since it is the weight that foreigners would have in equity had they not traded for twenty-four months starting in January 1994.

at a point in time the 24-month buy-and-hold equity weight is *above* the actual weight, investors have traded away from equities (thereby making the actual equity weight lower than the passive, 24-month buy-and-hold weight). Similarly, if at a point in time the 24-month buy-and-hold equity weight is *below* the actual weight, investors have traded into equities and away from bonds.

Figure 1 shows the 12-month returns for U.S. bonds and equities (top panel) and foreigners' actual and buy-and-hold U.S. equity weights (bottom panel). The top panel shows that U.S. equity returns were dramatically higher than U.S. bond returns from the beginning of the sample until late 2000 and again (but less dramatically) from 2003 to the end of the sample. Between those two periods of strong relative returns for U.S. equities were two years (2001 and 2002) during which annual U.S. equity returns were roughly negative 20 percent. U.S. bond returns, as the figure shows, were much less volatile, ranging between zero and 10 percent per year. The bottom panel shows that foreigners traded away from U.S. equities and into U.S. bonds from the beginning of the sample through 1998, traded into U.S. equities (and out of bonds) from early 1999 until mid-2002, and then from early 2003 through the end of the sample (June 2007) traded away from equities.

Putting the top and bottom panels together, the source of the significant poor foreign timing result is evident. Foreigners actively reallocated from U.S. equities into U.S. bonds for much of the 1990s, missing much of the 1990s bull market in U.S. equities. They then actively traded into U.S. equities for the final year of the bull market but also for a few more years (until about mid-2002), thereby bearing the brunt of a sharp sell-off in U.S. equities. In 2003 they shifted toward U.S. bonds at a time when equities

were about to outperform bonds for the rest of the sample. It is precisely this switching into one asset class just prior to its underperformance that is behind the statistically significant poor foreign timing that we document.

Figure 2 allows a similar analysis for U.S. claims. In the late 1990s U.S. investors' buy-and-hold weight was often lower than the actual equity weight. This indicates that within their foreign portfolios U.S. investors shifted toward equities while equity returns were relatively high. U.S. investors continued to shift toward foreign equities even as prices were falling between 2000 and 2002. But unlike foreign investors in the United States, U.S. investors abroad did not shift out of equities before the 2003 and 2004 recovery in global equity markets. As the insignificant coefficient on the U.S. timing effect shows, in a statistical sense U.S. timing between foreign bonds and foreign equities is neither poor nor exceptional.

3.3. Which investors are behind the poor foreign timing effect?

We have shown that some of the returns differential owes to foreigners' poor timing in reallocating within their U.S. portfolios. A natural question to ask is, Which investors are behind the poor foreign timing effect?[11]

One might suspect that the significantly negative timing effect for foreign investors owes to the mechanical accumulation of dollar reserves. For example, foreign governments could, for reasons that have nothing to do with expected portfolio returns, accumulate U.S. bonds just before U.S. bonds underperform. To see if reserve accumulation might be behind our timing result, we omit foreign governments' investments by re-estimating the decomposition using aggregate private positions in the

[11] We thank a referee for posing this question.

United States (Panel B of Table III).[12] We find that foreign timing for foreign private investors is negative and statistically significant. The poor timing of private foreign investors strongly suggests that our foreign timing effect is not driven by mechanical dollar reserve accumulation.

We also split the sample between developed and emerging market countries. We find that foreign timing is significant and negative for developed countries (Panel C), but not for emerging markets (Panel D). Estimation of Panel C excluding Japan, excluding the United Kingdom (since some emerging market countries may trade through London (Griever et. al. 2001)), and excluding both Japan and the United Kingdom produces nearly identical (unreported) results: For developed countries, foreign timing is negative and statistically significant. The results in Panels C and D, interesting in their own right, can be considered further evidence that the poor timing of foreign purchases of U.S. securities is not driven by the mechanical accumulation of dollar reserves by emerging markets.[13]

Table III thus shows that there is a statistically significant poor foreign timing effect, that it is not due to mechanical reserve accumulation, and that it is concentrated not in emerging markets but in developed countries. Exactly which countries are behind the poor foreign timing result? As Panel A of Table IV shows, the aggregate results on foreign timing appear to be driven mainly by some of the largest developed countries in

[12] Note that to the extent that some foreign governments hide their holdings of U.S. securities by using third-party (and third-country) custodians, some foreign government holdings might be in our foreign private data. Our guess is that this is more of an issue for Middle East oil exporters, which are not in our sample, and the U.K.

[13] Separating emerging markets from developed countries helps to reinforce our results in Panel B on foreign private investors. The reinforcement is welcome because the split between foreign private investors and foreign governments is somewhat murky in the TIC data (Warnock and Warnock, 2009) and, hence, in our dataset. With the exception of Japan, official purchases are likely negligible for developed countries, so the developed country sample in Panel C provides, at least to some extent, additional evidence on foreign private investors.

the world—Japan and the large European countries of United Kingdom, Germany, France, Italy, Spain, and Netherlands—as well as Austria, Denmark, and Finland. In contrast, the reason for the lack of a significant timing result for emerging markets is evident in Panel B, as only 3 of 17 emerging markets have negative and statistically significant timing (Argentina, China, and Hungary).[14]

Figure 3 shows, for the developed countries that have significant negative timing effects, graphs of actual and buy-and-hold equity weights that parallel the bottom panels of Figure 1; for relative returns, refer back to Figure 1. What we see in the figure is very similar to what was depicted in Figure 1: Many countries, especially European ones, underweighted U.S. equities during the booming 1990s, moved into U.S. equities in time for the last gasp of the bull market, kept adding to U.S. equity positions through the bear market, and then finally moved away from U.S. equities just when they were poised to outperform U.S. bonds. The poor timing in our aggregate results is evident in many foreign countries' U.S. portfolios.

3.4. Timing due to trading vs. revaluation of existing positions

The timing effects documented in Tables III and IV are, to be precise, driven by two underlying components: the passive evolution of existing positions and active reallocation (trading). That is, the variation in weights on different asset classes is a function not only of active trading but also to some extent by returns on existing positions. For example, when equities do particularly well and investors do not rebalance their portfolios, the equity weight will rise. Our graphs in Figures 1-3 allow an analysis of active trading versus a lack of rebalancing, but the statistical work in Tables III and IV

[14] As Table IV shows, one emerging market (India) and no developed country has a foreign timing effect that is positive and statistically significant.

combine the two effects. In this subsection we more formally differentiate between timing that is a result of a passive strategy compared with deliberate trading.

Specifically, we decompose the timing effect into trading and passive effects. Note that the weight of asset *j* at the end of *t-1* that would have resulted from a buy-and-hold strategy adopted *k* periods ago can be calculated as follows:

$$w_{j,t-1,k}^{bh} = w_{j,t-1-k} \prod_{\tau=t-k}^{t-1} \frac{1+r_{j,\tau}}{1+r_{p,\tau}^{bh}}$$

where $w_{j,t-1-k}$ is the actual weight at the end of period *t-1-k.* This weight is then updated according to actual returns on asset *j* and returns on a buy-and-hold portfolio r_p^{bh}.[15] From this we can decompose the timing effect into the part that depends on the deviations of actual weights from buy-and-hold weights and the part that depends on the deviation of actual weights from average weights:

$$\frac{1}{T}\sum_{t=1}^{T}\sum_{j=1}^{N}(w_{j,t-1}-\overline{w}_j)r_{j,t} = \frac{1}{T}\sum_{t=1}^{T}\sum_{j=1}^{N}(w_{j,t-1}-w_{j,t-1,k}^{bh})r_{j,t} + \frac{1}{T}\sum_{t=1}^{T}\sum_{j=1}^{N}(w_{j,t-1,k}^{bh}-\overline{w}_j)r_{j,t} \quad (4)$$

We refer to the first term on the right hand side of equation (4) as the *trading effect*. It measures the covariance between the deviations of actual weights from buy-and-hold weights and subsequent returns. If investors tend to increase weights in assets that subsequently rise in value, this term will be positive. We call the second term the *passive*

[15] In order to construct the buy-and-hold weight at the end of t-1, we need the return on a buy-and-hold portfolio in period t-1. This is not circular because the buy-and-hold portfolio return in t-1 uses buy-and-hold weights from t-2.

effect. It measures the covariance between the deviations of buy-and-hold weights from average weights and subsequent returns. This covariance will tend to be positive if returns are positively serially correlated.

Table V shows the foreign and U.S. trading and passive effects. Both are calculated for different lags corresponding to different buy-and-hold weights. For example, lag 6 uses buy-and-hold weights that would have resulted from a buy-and-hold strategy adopted six months ago.

Panel A shows the results using all countries. The foreign trading effect is always negative and statistically significant. The passive effect is also always negative and sometimes significant. This indicates that both poor passive performance and ill-timed trading contribute to the negative foreign timing effect that we documented in Table III, but the trading effect is slightly more dominant. Foreign investors make new purchases (sales) that tend to be followed buy low (high) returns. Interestingly, even though the overall timing effect in Table III was statistically significant only for developed countries, the part of the timing effect that results from active trading is negative and significant in both developed and emerging market countries (Panels B and C). The size of the effect is about 3 basis points per month at the 12-month lag and 6 basis points at the 24-month lag. This translates to roughly 36 and 72 basis points per year. In contrast, the U.S. trading effect is almost always positive although never statistically significant.[16]

In Table VI we calculate the trading and passive effects for aggregate private positions in the United States. We find that foreign private positions also show a negative and statistically significant trading effect. This means that private foreign investors tend

[16] This is entirely consistent with Thomas et al. (2006), who found that U.S. investors beat foreign benchmarks not by skilled month-to-month trading but as a result of longer standing differences from benchmark allocations.

to buy (sell) assets that subsequently experience low (high) returns. This is further evidence that our aggregate results are not driven by mechanical accumulation of dollar reserves; rather, they appear to be driven by the behavior of private investors.

3.5 Decomposition for two subsamples

In this subsection we investigate whether the decomposition of the returns differential varies over time. Our aim is to shed some light on which components of the returns differential are stable over time and which vary. In part, this is motivated by a desire to understand the permanency or transitory nature of any calculated returns differential.

In Table VII we split our sample into two periods: January 1994 through December 2000, and January 2001 through June 2007. We focus first on the items that appear to be transitory. The overall returns differential is negative (but not significant) in the first part of the sample, but highly positive in the second half (when the dollar was depreciating, increasing U.S. returns abroad). The composition effect was positive and significant in the first half, but near zero in the second half. The return effect was strongly negative in the first half and strongly positive in the second half. This is not surprising, as over short time periods the primary (but not sole) driver of the return effect (and the overall differential) are currency movements, and the dollar trended strongly in each subsample. Recall that over the entire sample the return effect is essentially zero (Table III).

The only item in Table VII that does not switch signs is the foreign timing effect, which is negative and statistically significant during both time periods. As in the full sample, U.S. timing remains statistically insignificant during both time periods. In Table

VIII we decompose the timing effect into the trading and passive effects. We see that at the 12- and 24-month horizons the foreign trading effect is consistently negative and statistically significant in both sub-samples. The size of the trading effect is roughly the same in the two sub-samples as in the full sample. Therefore, poor timing of new sales and purchases by foreign investors in the United States seems rather persistent. It is worth emphasizing that the number of observations in the two sub-samples is relatively low. Given the small number of observations, the significance and the robustness of the negative trading effect of foreign investors in the United States is striking. It strongly suggests that foreign poor timing is not driven by a few instances of bad luck.

4. Conclusion

We decomposed the U.S. external returns differential in order to improve the understanding of the sources of the returns differential that the United States receives on its net international positions. We found evidence of poor timing of foreign investors' reallocations across U.S. equities and U.S. bonds. This poor timing—evident primarily in investment from rich, developed countries, especially European ones—lowered foreigners' returns on their U.S. portfolios by 67 basis points per year, thus contributing positively to the U.S. external returns differential. Although we find no evidence of superior market timing ability by U.S. investors abroad, they perform quite well relative to foreign investors in the United States.

For the current debate on global imbalances, it is important to know whether the poor foreign timing we document is permanent or transitory. Our estimate of poor foreign timing is stable over our 162-month sample, but we wonder if increasing financial

integration, cross ownership of financial institutions, and improving information flows mean that any skill advantage—if it is (lack of) investment skill driving the timing effect—is likely to persist.[17] Should foreign investors improve their timing, the U.S. external position would worsen at a faster pace.

Understanding why foreign investors consistently fail to anticipate shifts in relative returns on different asset classes is an important question for future research. Even though we observe only foreigners' holdings in the U.S. and not their entire portfolio, piling into equities as they are about to underperform and vice versa can hardly be optimal. The fact that poor timing originates mostly from rich developed countries is inconsistent with the notion that it might be due to the forced trading of liquidity constrained foreign investors, since investors in emerging markets are more likely to face these constraints. Moreover, the variation of the timing and trading effects across countries does not appear to be correlated with geographic, cultural or linguistic distances. One possibility is that foreign investors in the United States chase returns as suggested in Bohn and Tesar (1996) and Brennan et al (2005). It is also possible that U.S. returns are less predictable than foreign returns, which would be consistent with studies that find negative market timing among U.S. mutual funds (see, for example, Ferson and Schadt 1996). Poor foreign timing in the United States is also broadly consistent with Parwada, Walter, and Winchester (2007) who, using proprietary trading data, find that foreign investors incur higher transaction costs than domestic (U.S.) investors, and Shukla and Inwegen (1995), who find that U.K.-based mutual funds investing in the United States perform worse than U.S.-based mutual funds.

[17] For example, Dvorak (2005) finds that in Indonesia, U.S.-based global brokerages improve the investment performance of both local and foreign investors.

Another area for future research is foreign investors' reallocations within each asset class. We currently assume that foreigners invest in market indexes for both equity and bonds; that is, we assume that foreign investors' allocation within each asset class matches that of a combination of benchmark indexes for each asset class. This assumption is on solid footing, as security-level analysis of holdings suggests that at a point in time the bulk of cross-border holdings is in just those securities that are in benchmark indexes. But if over time foreign investors' poor timing *within* asset classes is as poor as is their timing *between* asset classes, then we underestimate the true magnitude of the timing and trading effects.

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Table I: Country Composition of U.S. Portfolio of Foreign Equity and Foreign Bonds

Country's weight in U.S. equity (bond) portfolio is the U.S. equity (bond) position in the country divided by the total U.S. equity (bond) position in all 36 countries included in the sample. Country's equity return is the average of simple monthly returns on its MSCI gross U.S. dollar total return index expressed in percent. Except where noted, developed countries' bond returns are the weighted averages of simple monthly U.S. dollar returns on the country's GBI Broad 1-10 year bond index and the Lehman Corporate Eurodollar index, where the weights on the Eurodollar index are the shares of dollar denominated bonds in U.S. holdings of foreign bonds. Similarly, emerging markets' bond returns are the weighted averages of simple monthly U.S. dollar returns on the country's EMBI+ index and the ELMI+ index. The time period is from January 1994 through June 2007 unless otherwise noted in the last column.

Country	Country's Avg. Weight in U.S. Equity Portfolio	Country's Avg. Equity Return	Country's Avg. Weight in U.S. Bond Portfolio	Country's Avg. Bond Return	Country Included from
Australia	0.030	1.259	0.040	0.556	Jan '94
Austria	0.003	1.107	0.005	0.629	Jan '98
BelgiumLux	0.011	1.217	0.025	0.574	Jan '94
Canada	0.073	1.308	0.221	0.530	Jan '94
Denmark	0.006	1.405	0.016	0.643	Jan '94
Finland	0.022	2.135	0.009	0.567	Jan '94
France	0.076	1.129	0.050	0.550	Jan '94
Germany	0.057	1.135	0.091	0.553	Jan '94
Greece	0.002	1.467	0.003	0.753	Jun '97
Ireland	0.013	1.131	0.013	0.599	Jan '94
Italy	0.028	1.258	0.035	0.700	Jan '94
Japan	0.159	0.351	0.070	0.221	Jan '94
Netherland	0.077	1.139	0.052	0.535	Jan '94
Norway*	0.007	1.477	0.011	0.643	Jan '94
Portugal	0.003	1.205	0.002	0.711	Jan '94
Spain	0.024	1.507	0.018	0.673	Jan '94
Sweden	0.025	1.660	0.025	0.607	Jan '94
Switzerland*	0.057	1.135	0.002	0.493	Jan '94
U. K.	0.210	0.956	0.150	0.573	Jan '94
Argentina	0.005	1.387	0.027	0.272	Jan '94
Brazil	0.019	2.192	0.027	1.356	Jan '94
Chile	0.003	1.185	0.010	0.658	Jun '99
China	0.005	0.440	0.003	0.649	Apr '94
Colombia	0.000	1.838	0.005	0.999	Mar '97
Hungary	0.002	2.340	0.001	0.737	Feb '99
India**	0.007	1.260	0.001	0.885	Mar '96
Korea	0.021	1.507	0.015	0.791	Jan '94
Malaysia	0.007	0.658	0.006	0.694	Nov '96
Mexico	0.025	1.411	0.047	0.872	Jan '94
Peru	0.001	2.094	0.002	1.343	Jan '94
Philippines	0.003	0.370	0.006	0.911	Jan '94
Poland	0.001	1.321	0.004	1.023	Jan '94
Russia	0.005	3.310	0.007	1.776	Jan '95
South Africa	0.009	1.330	0.004	0.684	Jun '94
Thailand**	0.005	0.507	0.003	0.812	Jun '97
Turkey	0.002	2.119	0.003	1.332	Jul '96

* Bond returns from Bloomberg.

**Bond returns calculated from GBI-EM Broad Traded index.

Table II
Characteristics of U.S. Foreign Claims and Liabilities

Equity weight in U.S. claims is the share of foreign equities in U.S. investors' foreign bond and equities portfolio. Equity weight in U.S. liabilities is the share of U.S. equities in foreign investors' U.S. bond and equities portfolio. Returns on U.S. equities are the monthly simple returns on the U.S. MSCI gross return equity index. Returns on U.S. bonds are foreign-portfolio-weighted averages of Lehman Brothers Treasury, Corporate and Agency bond indexes. Returns on foreign equities are U.S.-portfolio-weighted averages of each country's simple monthly dollar return on its MSCI gross return equity index. Returns on foreign bonds are U.S.-portfolio-weighted averages of each country's bond returns. Except where noted in Table I, developed countries' bond returns are the weighted averages of simple monthly U.S. dollar returns on the country's GBI Broad 1-10 year bond index and the Lehman Corporate Eurodollar index, where the weights on the Eurodollar index are the shares of dollar denominated bonds in U.S. holdings of foreign bonds. Similarly, emerging markets' bond returns are the weighted averages of simple monthly U.S. dollar returns on the country's EMBI+ index and the ELMI+ index. All data are from January 1994 through June 2007, unless otherwise noted in Table I.

	Mean	Median	St.Dev.	Min	Max
Panel A: Equity Weight in U.S. Claims (%)					
All Countries	0.718	0.716	0.042	0.636	0.795
Developed Countries	0.729	0.735	0.045	0.625	0.811
Emerging Markets	0.636	0.630	0.090	0.450	0.846
Panel B: Equity Weight in U.S. Liabilities (%)					
All Countries	0.406	0.386	0.061	0.324	0.545
Developed Countries	0.449	0.422	0.058	0.387	0.591
Emerging Markets	0.076	0.080	0.026	0.036	0.131
Panel C: Equity Returns (% per month)					
Return on U.S. Equities	0.970	1.312	4.108	-13.905	9.984
Return on Foreign Equities					
All Countries	0.911	1.352	4.188	-14.752	10.720
Developed Countries	0.925	1.124	4.024	-12.998	10.539
Emerging Markets	1.073	2.233	7.239	-32.592	16.517
Panel D: Bond Returns (% per month)					
Return on U.S. Bonds					
By All Countries	0.458	0.519	0.899	-2.768	2.963
By Developed Countries	0.463	0.556	0.935	-2.949	3.021
By Emerging Markets	0.435	0.429	0.765	-2.121	2.481
Return on Foreign Bonds					
All Countries	0.578	0.520	1.462	-3.788	5.341
Developed Countries	0.531	0.478	1.469	-3.445	4.948
Emerging Markets	0.847	1.249	3.274	-19.474	9.129

Table III

Decomposition of the Returns Differential into Composition, Return and Timing Effects

Difference, the difference between the average monthly percentage return on the portfolio of U.S. claims (foreign equities and foreign bonds) and the return on U.S. liabilities (U.S. equities and U.S. bonds), equals Composition Effect plus Return Effect minus Foreign Timing Effect plus U.S. Timing Effect. The composition, return and timing effects are defined in section 3.1. Standard t-statistics are in parentheses. Bootstrapped z-statistics based on 1000 draws are in brackets. Statistical significance at the 1, 5, and 10 percent levels are denoted by ***, **, and *, respectively.

Difference (claims-liabilities)	Composition Effect	Return Effect	Timing Effects	
			Foreign	U.S.
Panel A: All Countries				
0.203	0.132	0.020	-0.056***	-0.005
(1.19)	[1.43]	[0.15]	(-2.73)	(-0.41)
Panel B: Vis-à-vis Private Foreign Positions				
0.152	0.111	0.005	-0.042**	-0.005
(0.91)	[1.38]	[0.12]	(-2.41)	(-0.41)
Panel C: Developed Countries				
0.177	0.126	0.001	-0.061***	-0.011
(1.10)	[1.44]	[0.01]	(-3.02)	(-0.79)
Panel D: Emerging Market Countries				
0.573	0.213	0.302	-0.010	0.048
(1.40)	[1.09]	[1.09]	(-1.40)	(1.16)

Table IV
Decomposition of the Returns Differential into Composition, Return and Timing Effects by Country

Difference, the difference between the average monthly percentage return on the portfolio of U.S. claims (foreign country's equities and foreign country's bonds) and the return on U.S. liabilities (U.S. equities and U.S. bonds), equals Composition Effect plus Return Effect minus Foreign Timing Effect plus U.S. Timing Effect. The composition, return and timing effects are defined in section 3.1. Standard t-statistics are in parentheses. Statistical significance at the 1 and 5 percent levels are denoted by ** and *, respectively.

Panel A: Developed Countries

Country	Difference	Composi -tion Effect	Return Effect	Foreign Timing	U.S. Timing
Australia	0.121 (0.53)	-0.021	0.184	0.002 (0.11)	-0.040** (-3.53)
Austria	0.209 (0.69)	0.129	0.047	-0.086** (-2.59)	-0.053 (-0.65)
BelgiumLux	0.232 (1.06)	0.092	0.143	0.003 (0.08)	-0.000 (-0.00)
Canada	0.022 (0.12)	-0.204	0.215	-0.001 (-0.08)	0.010 (0.30)
Denmark	0.322 (1.40)	-0.046	0.306	-0.069* (-2.49)	-0.007 (-0.15)
Finland	1.135 (1.92)	0.412	0.736	-0.124* (-2.38)	-0.137 (-1.24)
France	0.295 (1.22)	0.108	0.101	-0.073** (-3.24)	0.013(0.45)
Germany	0.378 (1.60)	0.123	0.117	-0.114** (-3.34)	0.024 (0.56)
Greece	0.631 (1.39)	0.208	0.320	-0.033 (-0.85)	0.069 (0.60)
Ireland	0.188 (0.75)	0.129	0.127	-0.031 (-1.64)	-0.099* (-2.49)
Italy	0.388 (1.25)	0.077	0.232	-0.080** (-3.13)	-0.001 (-0.02)
Japan	-0.194 (-0.52)	0.205	-0.441	-0.040* (-2.26)	0.002 (0.07)
Netherlands	0.183 (0.79)	0.051	0.121	-0.030* (-2.15)	-0.020 (-0.55)
Norway	0.428 (1.29)	0.059	0.344	-0.017 (-0.32)	0.009 (0.15)
Portugal	0.496 (1.34)	0.276	0.229	-0.006 (-0.20)	-0.017 (-0.47)
Spain	0.821* (2.42)	0.373	0.364	-0.087* (-2.30)	-0.003 (-0.09)
Sweden	0.504 (1.54)	0.040	0.481	-0.031 (-1.71)	-0.049 (-0.99)
Switzerland	0.304 (1.01)	0.174	0.106	-0.031 (-1.33)	-0.006** (-2.81)
United Kingdom	0.180 (1.06)	0.120	-0.003	-0.083** (-3.85)	-0.020 (-1.13)

Panel B: Emerging Countries					
Country	Difference	Compo-sition Effect	Return Effect	Foreign Timing	U.S. Timing
Argentina	-0.142 (-0.28)	-0.027	-0.058	-0.074** (-2.63)	-0.131 (-1.32)
Brazil	1.305 (1.82)	0.295	1.040	0.027 (0.75)	-0.003 (-0.05)
Chile	0.106 (0.27)	0.154	0.038	-0.045 (-1.35)	-0.131 (-0.64)
China	0.070 (0.13)	0.069	-0.121	-0.009** (-3.49)	0.113 (0.57)
Colombia	0.475 (1.22)	0.134	0.425	0.001 (0.08)	-0.083 (-0.34)
Hungary	1.520* (2.24)	0.798	0.632	-0.043** (-2.69)	-0.068 (-0.63)
India	0.670 (1.12)	0.402	0.292	0.059* (1.99)	0.035 (0.75)
Korea	0.762 (1.25)	0.425	0.398	0.004 (1.37)	-0.058 (-0.24)
Malaysia	0.030 (0.06)	0.156	-0.081	-0.028 (-1.87)	-0.073 (-0.57)
Mexico	0.498 (1.12)	0.154	0.395	0.023 (1.23)	-0.029 (-0.63)
Peru	0.607 (1.21)	-0.070	0.926	0.027 (0.47)	-0.221 (-1.01)
Philippines	-0.006 (-0.02)	-0.040	0.080	-0.002 (-0.26)	-0.049 (-0.45)
Poland	0.513 (1.00)	0.150	0.506	-0.001 (-0.47)	-0.144 (-0.91)
Russia	1.696 (1.60)	0.429	1.575	-0.000 (-0.01)	-0.309 (-1.32)
South Africa	0.348 (0.72)	0.042	0.232	-0.065 (-1.69)	0.008 (0.35)
Thailand	0.040 (0.06)	0.028	0.004	-0.001 (-0.20)	0.008 (0.04)
Turkey	1.084 (1.13)	0.313	1.026	0.067 (1.14)	-0.189 (-1.44)

Table V

Decomposing the Timing Effect into Trading and Passive Effects

The covariance between lagged weights and returns (the timing effect) is decomposed into (1) the covariance between lagged deviations of actual from buy-and-hold weights and subsequent returns (the trading effect), and (2) the covariance of the lagged deviation of buy-and-hold weights from average weights and subsequent returns. Lag indicates the horizon of the buy-and-hold weight in months. T-statistics are in parentheses. Statistical significance at the 1, 5, and 10 percent levels are denoted by ***, **, and *, respectively.

Lag	Foreign Timing Effect		U.S. Timing Effect		# of obs
	Trading Effect	Passive Effect	Trading Effect	Passive Effect	
Panel A: All Countries					
6	-0.012**	-0.047**	0.003	-0.006	156
	(-2.32)	(-2.43)	(0.64)	(-0.47)	
12	-0.033***	-0.027	-0.002	-0.001	150
	(-3.74)	(-1.53)	(-0.30)	(-0.10)	
24	-0.060***	-0.000	-0.004	-0.000	138
	(-3.75)	(-0.02)	(-0.56)	(-0.03)	
Panel B: Developed Countries					
6	-0.011**	-0.052***	0.003	-0.012	156
	(-2.12)	(-2.83)	(0.86)	(-0.85)	
12	-0.031***	-0.034**	0.001	-0.009	150
	(-3.39)	(-2.07)	(0.16)	(-0.63)	
24	-0.056***	-0.006	0.004	-0.013	138
	(-3.47)	(-0.32)	(0.77)	(-0.84)	
Panel C: Emerging Market Countries					
6	-0.005*	-0.004	0.017	0.032	156
	(-1.84)	(-0.61)	(1.22)	(0.68)	
12	-0.018***	0.007	0.020	0.032	150
	(-3.73)	(0.87)	(0.97)	(0.59)	
24	-0.028***	0.013	0.000	0.061	138
	(-2.84)	(1.00)	(0.01)	(0.98)	

Table VI

Trading and Passive Effects of Aggregate Foreign Private Investors in U.S. Securities

The calculations in this table use aggregate private foreign positions in U.S. securities. The covariance between lagged weights and returns (the timing effect) is decomposed into (1) the covariance between lagged deviations of actual from buy-and-hold weights and subsequent returns (the trading effect), and (2) the covariance of the lagged deviation of buy-and-hold weights from average weights and subsequent returns. Lag indicates the horizon of the buy-and-hold weight in months. T-statistics are in parentheses. Statistical significance at the 1, 5, and 10 percent levels are denoted by ***, **, and *, respectively.

	Foreign Private Timing Effect		# of
Lag	Trading Effect	Passive Effect	Obs
6	-0.008*	-0.035**	156
	(-1.95)	(-2.07)	
12	-0.021***	-0.022	150
	(-3.13)	(-1.41)	
24	-0.038***	-0.002	138
	(-3.58)	(-0.10)	

Table VII
Decomposition of the Returns Differential into Composition, Return and Timing Effects: Subsamples

Difference, the difference between the average monthly percentage return on the portfolio of U.S. claims (foreign equities and U.S. bonds) and the return on U.S. liabilities (U.S. equities and U.S. bonds), equals Composition Effect plus Return Effect minus Foreign Timing Effect plus U.S. Timing Effect. The composition, return and timing effects are defined in section 3.1. Standard t-statistics are in parentheses. Bootstrapped z-statistics based on 1000 draws are in brackets. Statistical significance at the 1, 5, and 10 percent levels are denoted by ***, **, and *, respectively.

Difference (claims-liabilities)	Composition Effect	Return Effect	Timing Effects	
			Foreign	U.S.
Panel A: 1994 -2000				
-0.152	0.181*	-0.377*	-0.056**	-0.012
(-0.64)	[1.73]	[-1.89]	(-2.15)	(-0.74)
Panel B: 2001 – June 2007				
0.619**	0.057	0.472***	-0.088***	0.002
(2.56)	[0.32]	[3.08]	(-2.91)	(0.11)

Table VIII

Decomposing the Timing Effect into Skill and Passive Strategy: Subsamples

The covariance between lagged weights and returns (the timing effect) is decomposed into (1) the covariance between lagged deviations of actual from buy-and-hold weights and subsequent returns (the trading effect), and (2) the covariance of the lagged deviation of buy-and-hold weights from average weights and subsequent returns. Lag indicates the horizon of the buy-and-hold weight in months. T-statistics are in parentheses. Statistical significance at the 1, 5, and 10 percent levels are denoted by ***, **, and *, respectively.

Lag	Foreign Timing		U.S. Timing		Nobs
	Trading Effect	Passive Effect	Trading Effect	Passive Effect	
Panel A: 1994 -2000					
6	-0.013*	-0.048**	0.009*	-0.018	78
	(-1.83)	(-2.00)	(1.70)	(-1.13)	
12	-0.037***	-0.026	0.011	-0.020	72
	(-2.67)	(-1.15)	(1.53)	(-1.19)	
24	-0.069**	0.013	0.009	-0.021	60
	(-2.46)	(0.43)	(0.88)	(-1.49)	
Panel B: 2001-June 2007					
6	-0.010	-0.058**	-0.002	0.011	71
	(-1.25)	(-2.48)	(-0.28)	(0.45)	
12	-0.027**	-0.028*	-0.008	0.021	65
	(-2.16)	(-1.81)	(-1.09)	(0.83)	
24	-0.046**	0.014	0.003	-0.003	53
	(-2.17)	(1.00)	(0.44)	(-0.10)	

Figure 1

U.S. equity and bond returns and the equity weight in U.S. portfolio liabilities

The 12-month total return on U.S. equities is the return on the MSCI U.S. total return index. The 12-month total return on U.S. bonds is the foreign-portfolio-weighted average of Lehman Brothers Treasury, Corporate and Agency bond returns. Actual equity weight in U.S. portfolio liabilities is the share of U.S. equities in foreign investors' U.S. bond and equities portfolio. The 24-month buy-and-hold weight is the share of equity that would have resulted from a buy-and-hold strategy adopted 24 months ago.

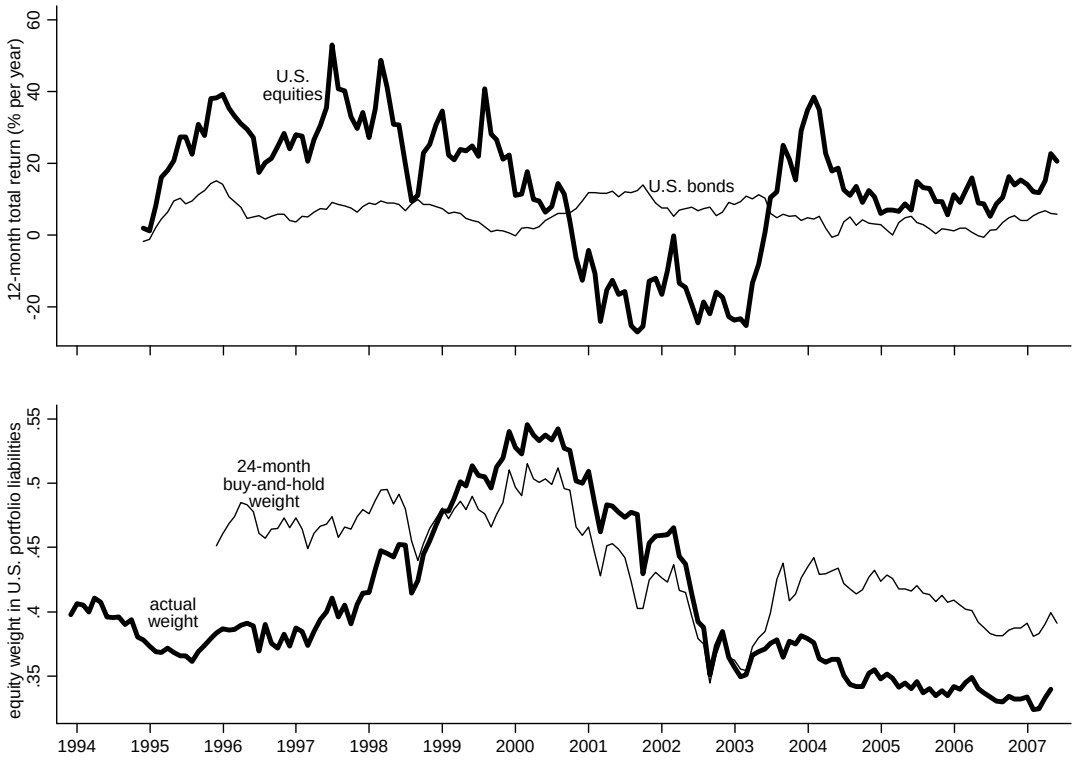


Figure 2

Foreign equity and bond returns and the equity weight in U.S. portfolio claims

The 12-month total return on foreign equities is the U.S.-portfolio-weighted average of each country's dollar return on its MSCI gross return equity index. The 12-month total returns on foreign bonds are U.S.-portfolio-weighted averages of each country's bond returns. Except where noted in Table I, developed countries' bond returns are the weighted averages of simple monthly U.S. dollar returns on the country's GBI Broad 1-10 year bond index and the Lehman Corporate Eurodollar index where the weights on the Eurodollar index are the shares of dollar denominated bonds in U.S. holdings of foreign bonds. Similarly, emerging markets' bond returns are the weighted averages of simple monthly U.S. dollar returns on the country's EMBI+ index and the ELMI+ index. Actual equity weight in U.S. claims is the share of foreign equities in U.S. investors' foreign bond and equities portfolio. The 24-month buy-and-hold weights is the share of equity that would have resulted from a buy-and-hold strategy adopted 24 months ago.

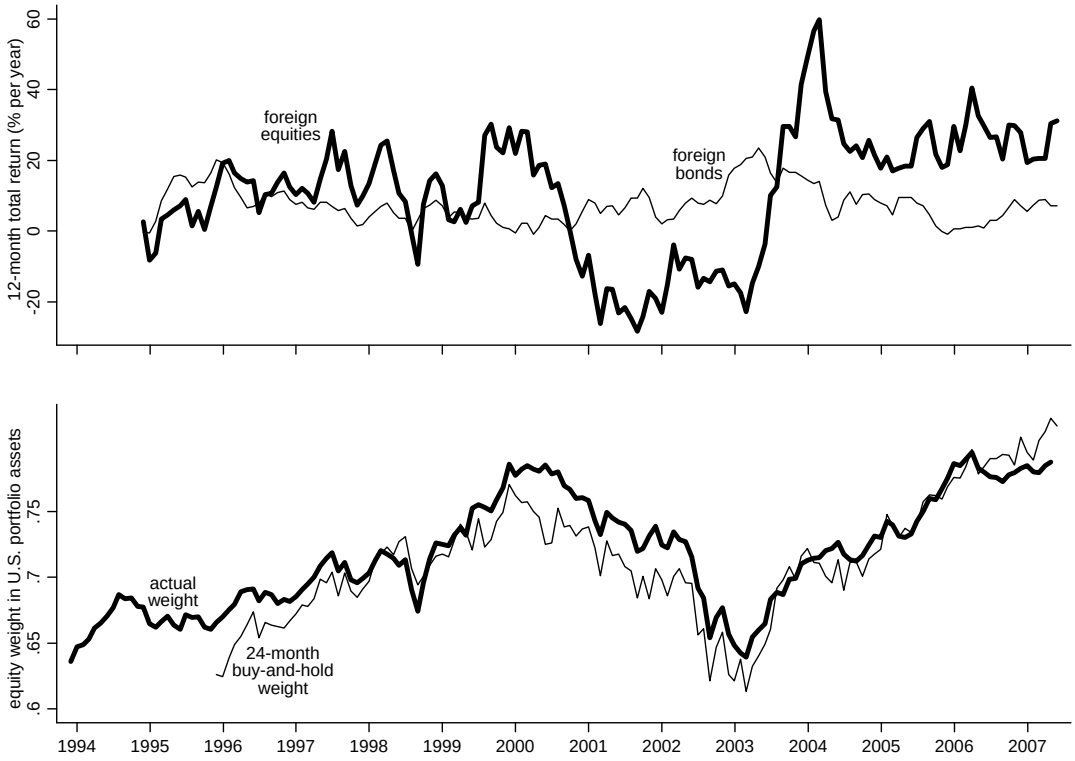
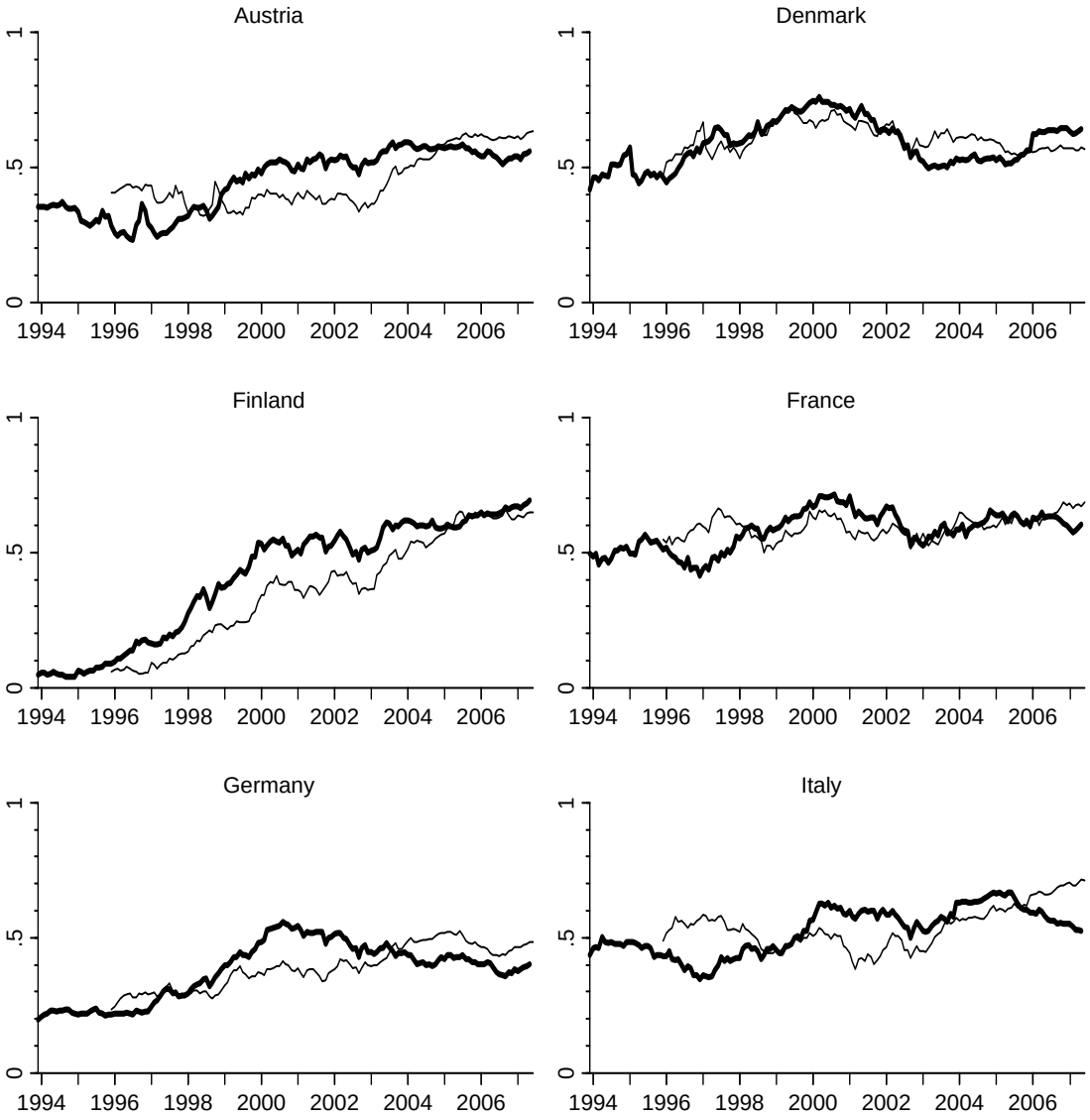
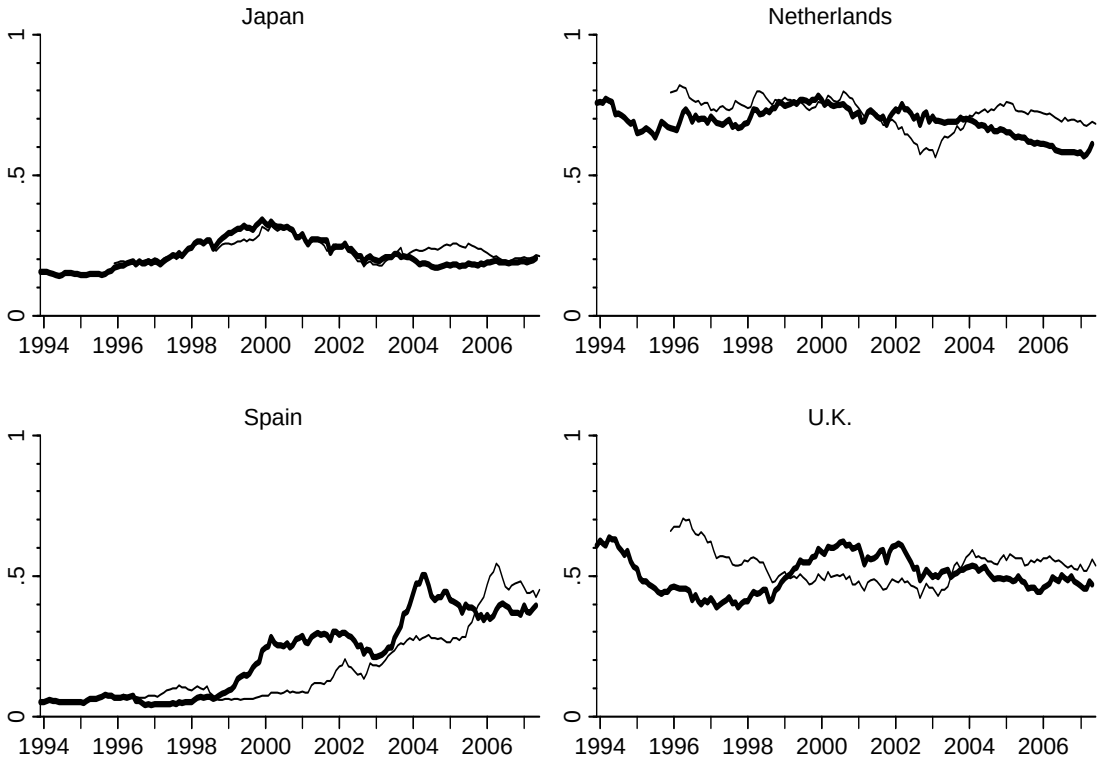


Figure 3
Equity weight in U.S. portfolio liabilities by country

For developed countries with significant negative timing effects in Table IV, the thick lines depict actual equity weights (the actual share of U.S. equities in the country's investors' U.S. bond and equities portfolio) and the thin lines 24-month buy-and-hold weights (the share of equity that would have resulted from a buy-and-hold strategy adopted 24 months ago).

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