Foreign Sentiment*

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Abstract

We introduce a direct cross-border sentiment measure, i.e., "*foreign sentiment,"* to study how investors' cross-border trading decisions affect aggregate stock prices. Foreign sentiment predicts stock price reversals internationally in the destination markets of cross-border investment. Importantly, foreign sentiment is driven by an overreaction to international negative news, which is stronger for countries perceived as more "foreign." Capital flows contain an important foreign sentiment component and a residual component positively predicting returns. Event-based analyses support a causal interpretation of foreign investors shaping such sentiment effect (via their reactions to news). Our findings suggest worldwide overreaction following each other's (bad) news.

Keywords: International markets, institutional investors, news, new tone, flow shifts, sentiment, foreign sentiment, asset allocation

JEL Codes: G10; G11; G15; G40

Introduction

The growing global market integration has increased the role played by foreign investors in local markets. The evidence so far suggests that through stock market liberalization, foreign investors have had a positive effect on local markets in terms of a lower cost of capital, higher liquidity, and better informational efficiency.[1]

The underlying assumption has always been that international portfolio flows are originated by "rational" investors, while their "sentiment-driven" behavior has been scarcely considered. This is in stark contrast with the long-held view that sentiment is an essential part of investor actions and generates important asset pricing effects (e.g., Keynes 1936; De Long, Shleifer, Summers, and Waldmann 1990; Shleifer and Vishny 1997) degenerating ultimately into overreaction and a subsequent reversal at the aggregate market level (Ben-Rephael, Kandel, and Wohl 2012). It is therefore natural to conjecture that cross-border portfolio decisions may also be subject to sentiment toward the destination market of investment, likely driven by misinterpretation and overreaction to local information (e.g., Tetlock 2007, 2011; Dumas, Lewis, and Osambela 2017). These considerations lead us to two main hypotheses. The first is the "*foreign sentiment*" hypothesis: the sentiment displayed by foreign investors in their cross-border portfolio decisions generates noise in local market prices. The second is the "*news overreaction*" hypothesis: foreign sentiment arises due to foreign investors' overreaction to local news.

The key empirical challenge when investigating these hypotheses is to identify sentiment-driven shocks that arise from *foreign* investors toward *local* markets, which are *distinct from local and global (i.e., common) sentiment-driven demand shocks* and directly connected to trading decisions. A simple separation of retail trading from institutional trading may not achieve this purpose, as mounting evidence indicates that retail trading can in fact, be smart while institutional trading dumb.[2] In this paper, we address this challenge and introduce the novel concept of "*foreign sentiment"*, which captures the sentiment-driven component of foreign investment toward local markets. It is a flow-based measure which focuses on mutual fund investors' asset reallocation decisions between local and foreign markets. Its central difference from local and global sentiment measures is that it is a *cross-border* sentiment.[3] Moreover, since flows directly

[1] See, e.g., Bekaert and Harvey (2000); Bae, Bailey, and Mao (2006); Fang, Maffett, and Zhang (2015); and Kacperczyk, Sundaresan, and Wang (2020). Other related papers include Henry (2000), Chari and Henry (2004, 2008), Bekaert, Harvey and Lundblad (2005), Mitton 2006, Bekaert, Harvey and Lundblad (2007), and Bekaert, Harvey and Lundblad (2011).

[2] For evidence on smart retail trading, see, e.g., Kaniel, Saar, and Titman (2008), Kellye and Tetlock (2013, 2017), Boehmer, Jones, Zhang, and Zhang (2019). For evidence on dumb institutional trading, see, Edelen, Ince and Kadlec (2016), Jacobs (2016), DeVault, Sias, and Starks (2019).

[3] The sentiment literature suggests various local and global sentiment measures. They differ substantially from the sentiment of foreign investors toward local assets. Specifically, local measures capture sentiment in local markets (e.g., Baker and Wurgler, 2006, and Ben-Rephael, Kandel and Wohl, 2012). Global measures are the common component of local sentiment measures, thus essentially reflecting the contagion or comovement of local sentiment measures (e.g.,

reflect investors' trading decisions, our measure has the potential of identifying changes in demand much earlier than measures that are based on market prices.

Given the availability of data, we construct our proxy of foreign sentiment as the sentiment of U.S. investors toward non-U.S. markets. For robustness, we also complete the picture by examining the foreign sentiment of non-U.S. investors toward the U.S. market.[4] Our main foreign sentiment measure (Hereafter, "*FS*") is based on monthly data of intra-family flow shifts (net exchanges) between the U.S. mutual funds focusing on the U.S. market and the U.S. funds focusing on the international markets. Investors will shift their *pre-existing investments* from (to) their home market to (from) their foreign market when their view about the foreign market is relatively more optimistic (pessimistic) than the home market. Given that mutual fund investors' asset reallocation is likely to be driven by reactions to short-term information in the market,[5] we argue that the cross-border asset reallocation decisions of mutual fund investors is a good proxy for the foreign sentiment. As we will show later, this foreign sentiment measure has explanatory power over and above other flow-shifts sentiment proxies that capture local investors' sentiment towards their local equity market.

To clarify our terminology, we henceforth refer to foreign sentiment as either the sentiment of U.S. investors toward non-US markets or the sentiment of non-U.S. investors toward the U.S. market. We define local sentiment as the sentiment of local investors in a country toward their home equity market. The destination (origin) market is the destination (origin) of the cross-border investment.

Using monthly panel data of 21 developed market countries from 1992 to 2017, we provide three sets of results that collectively support our *foreign sentiment* hypothesis.

First, we start by documenting that foreign sentiment is associated with a contemporaneous increase in the local market prices in destination markets and a subsequent reversal that lasts up to 12 months. A one standard deviation increase in *FS* is associated with -1% (-2.7%) MSCI international country index returns in the next month (12 months), on average, across non-U.S. developed markets. The reversal suggests that such portfolio flows are driven by nonfundamental reasons (e.g., Tetlock, 2007). We also confirm that the pricing effects of foreign sentiment are distinct from those of local sentiment measures for either the origin

Baker, Wurgler and Yuan 2012, and Gao, Ren, and Zhang, 2020). Therefore, these measures are effectively based on local market variables and do not focus on the sentiment effect of investors' cross-border actions.

[4] The richness of the data tracking U.S. investment in non-U.S. markets, the rich heterogeneity across non-U.S. markets, and the fact we can directly measure asset reallocation for U.S. mutual funds' retail investors, enable us to provide clear evidence on the effect of foreign sentiment. The quality of the data tracking non-U.S. investment in the U.S. market is the second best in our databases in terms of dimensions such as the number of non-missing observations, which are crucial for testing time-series market return predictability as such tests require long sample period. However, the asset reallocation decisions of non-U.S. mutual fund investors toward the U.S. are based on non-direct proxies, which are nosier in nature.

[5] Net exchanges (flow shifts) are transfers of already invested money within the fund family across assets classes. As such, they are a clean measure of investors' asset allocation decisions, while net sales and redemptions are more likely to be driven by long-term saving and planning decisions (Ben-Rephael et al. 2012, 2017).

(U.S.) or the destination (non-U.S.) markets (henceforth, "U.S. local sentiment" and "non-U.S. local sentiment," respectively).

Moreover, *FS* predicts return reversals in international markets, even after controlling for the negative return predictability of the local sentiment in these markets, but it has no predictive power for the U.S. market return. In contrast, U.S. local sentiment predicts returns in the U.S. market, but has no predictive power for international market returns. These results suggest that investor sentiment toward foreign markets differs substantially from local sentiment. *FS* also has significant out-of-sample predictability on international market returns, achieving up to 4% out-of-sample R-squared for one-month ahead returns. Taken together, this first set of results supports our hypothesis that the portfolio choices of foreign investors toward local markets are associated with an overreaction. Henceforth, we refer to this foreign sentiment-induced return reversal as the "foreign sentiment effect."

Second, if foreign investors drive this foreign sentiment effect, we would expect such effect to be stronger in countries in which the influence of foreign investment is larger. To assess whether the impact of such foreign sentiment is related to the foreign investment influence in local markets, we construct a measure ("*ForeignTilt*") to capture the importance of foreign (i.e., U.S.) investors' investment in destination local (non-U.S.) markets. Specifically, if the magnitude of the foreign sentiment effect is due to the level of foreign investment influence, we expect countries with a larger *ForeignTilt* to display a stronger foreign sentiment effect, since more of the overall effect is passed through them. And, indeed, we find this to be the case.

Next, to get closer to the causal interpretation, we exploit the passage of the U.S. Jobs and Growth Tax Relief Reconciliation Act (JGTRRA) in 2003 as an exogenous shock to U.S. investment influence in each non-U.S. country. This relief act lowered the dividend tax rate to 15% for U.S. investors investing in firms domiciled in countries that have tax treaties with the U.S.. We take advantage of *ForeignTilt* ability to capture cross-country variations to explore the effect of the tax change in each country, depending on the country's dividend-paying intensity. Given that the tax relief made the treaty countries with a higher fraction of dividend-paying stocks more desirable for the U.S. investors, we expect and indeed document a higher increase in U.S. investments in these countries following the passage of the new regulation (e.g., Harris, Hartzmark, and Solomon, 2015). Then, using a difference-in-differences analysis, we show that the impact of foreign sentiment in these countries significantly increased after the passage of the new regulation. This result supports that the fraction of foreign investment in a given market, contributes to generating sentiment in local market prices.

Third, we broaden the scope of our sentiment effect. While our foreign sentiment measure (*FS*) is based on retail investors' asset reallocation decisions, we argue that it may broadly reflect the market-level foreign sentiment of all the investors in a country that conduct their cross-border investments in a correlated

sentiment-driven manner.[6] To support this conjecture, we explore the relationship between our measure and cross-border equity capital flows—arguably the most important indicator of capital movements across developed markets.[7] We first document that *FS* is 42% correlated with aggregate U.S. equity capital flows to non-U.S. countries, suggesting that a nontrivial part of capital flows is related to *FS*. We then decompose such capital flows to each country into a predicted component based on *FS* and a residual component that is not explained by it. We show that the predicted component has a similar predictive power for price reversals as *FS*, suggesting that *FS* proxies for the sentiment-driven demand component of cross-border capital flows. In contrast, the component not predicted by *FS* positively predicts future returns in international markets instead of reversals, suggesting that this component is likely to be the one more related to informed cross-border investor demand. The magnitudes of the return predictability of the two flow components are comparable, suggesting that foreign sentiment is an important and distinct part of cross border capital flows.

Having established the sentiment-driven role of foreign investment and shed light on its cause and economic importance, we turn to explore our second hypothesis—the relationship between foreign sentiment and local market public information. As hypothesized, one channel through which the foreign sentiment effect arises is foreign investors' overreaction to the information flow disseminated in local markets. To explore this conjecture, we analyze the relationship between foreign sentiment and local public news—a premier source of public signals – using Calomiris and Mamaysky (2019) country-specific news tone measures.

We again provide three sets of results that collectively support our *news overreaction* hypothesis. In the first set of results, we establish that local news in the destination market drives foreign sentiment: the destination-market local news tone positively predicts *FS* but not the other way round. Equally important, the destination-market local news tone does not predict the local sentiment in the destination markets (i.e., non-U.S. local sentiment). Given the response of *FS* to the destination-market local news tone, we turn to explore whether the interaction between such news tone and *FS* is relevant for predicting returns. Strikingly, we find that the ability of *FS* to predict international return reversals is solely driven by its interaction with the destination-market local news tone. In contrast, the interaction of *FS* with the origin-market local news tone has no predictive power, confirming that foreign sentiment is driven by the destination-market local

[6] For example, DeVault, Sias, and Starks (2019) show that institutional trading appears to be sentiment-driven in the cross-section of U.S. stocks. Other studies also show evidence that mutual fund managers conduct trades to appeal to their perceived non-fundamental preferences of fund investors (Solomon, Soltes, and Sosyura 2014; Harris, Hartzmark, and Solomon, 2015).

[7] Other papers that explored cross border equity capital flows across developed and emering markets include Brennan and Cao (1997), Froot, O'Connell and Seasholes (2001), Froot and Ramadorai (2008), Albuquerque, Bauer, and Schneider (2009), and Jotikasthira, Lundblad, and Ramadorai (2012). While these papers focus on total equity flows, our measure is based on aggregate intra-family flow shifts across asset classes.

news rather than by the origin-market local news. Moreover, the destination-market local news tone does not affect the return predictability of the local sentiment in destination markets. Jointly taken, these results suggest that local sentiment is not driven by an overreaction to news tone in the same manner as foreign sentiment is. Finally, we show that this news-driven foreign sentiment effect is stronger in the case of more economic relevance of the news, consistent with investors misinterpreting information about fundamentals (Tetlock 2007, 2011; Dumas et al. 2017).

The news literature suggests that overreaction to news is likely to be concentrated in bad news (Tetlock, 2007). The psychology literature refers to such behavior as a "negativity bias" (Baumeister, Bratslavsky, Finkenauer, and Vohs 2001, and Rozin and Royzman 2001). We use this intuition and split *FS* into positive and negative flow shifts and explore their interaction with news tone. We find that the foreign sentiment effect is mostly driven by an overreaction to *negative* destination-market local news. That is, return reversals in destination-market returns happen mostly when destination-market news is bad, coupled with foreign investors shifting their cross-border investments from the destination market back to the origin market.

Prior studies support the idea that the impact of news is associated with the degree of investor attention (see Tetlock, 2015; Ben-Rephael, Carlin, Da, and Israelsen forthcoming) and attention constraints (e.g., Hirshleifer and Teoh, 2003, Baber and Odean, 2007, and Hirshleifer, Lim and Teoh 2009). Building on these findings, in our second set of results, we sharpen our identification by examining whether the news-driven foreign sentiment effect is related to investor attention constraints. We consider two sets of tests. Our first test exploits the Olympic Games held in the U.S. as an exogenous shock that lowers U.S. investors' attention to non-U.S. news (e.g., Peress and Schmidt, 2019). Specifically, we expect U.S. investors to pay less attention to non-U.S. news during the U.S. Olympic Games period, which should result in an attenuated foreign sentiment effect. Our results support this conjecture. We also show that the attenuation in the foreign sentiment effect cannot be replicated in randomly-selected pseudo-Olympic months. Our second test focuses on the effect of a positive shock to investor attention. Specifically, we exploit the heterogeneity in U.S. investors' attention to the non-U.S. local news across international markets, using abnormal news intensity of a country relative to the U.S.. We document that abnormally high intensity of destination-market local news, which attracts U.S. investor attention to the news in that country, increases the foreign sentiment effect vis-a-vis such country. Collectively, these two tests support that the destination-market news drives the foreign sentiment effect.

In the third set of results, we delve deeper into the asymmetry of reaction by foreigners to the destination-market local news. We provide suggestive evidence to explain why foreign sentiment is driven by an overreaction to negative destination-market local news, while local sentiment is not driven by an overreaction to the same news. We conjecture that the differences in the reaction to the same news are

explained by "*attribution bias*"—or "*outgroup negativity"*—i.e., a situation where individuals overreact to negative information about entities outside their group. This reaction should be stronger for destination markets that have a higher degree of foreignness.[8] We use six measures that reflect the degree by which U.S. investors view an international country as an outgroup, i.e., "foreign." These are Hofstede's cultural distance measure based on six dimensions of national culture (i.e., individualism, power distance, masculinity, uncertainty avoidance, long-term orientation and indulgence), physical distance, ancestral distance (the fraction of US citizens with ancestors from the country), religious distance, language, and a composite distance measure that combines the information from all the above five measures. Using these measures, we show that the overreaction following negative destination-market news signals is stronger for countries more likely to be perceived as an outgroup. Thus, investors' overreaction following negative destination-market public signals is more pronounced when the signals are from countries that are more foreign.

Finally, in order to demonstrate the generality of our foreign sentiment effect and also to provide an out-of-sample validation, we study the link between non-U.S. investors' sentiment towards the U.S. market—i.e., their foreign sentiment towards the U.S. stock market. Consistent with our main findings, we document that a one standard deviation increase in non-U.S. investor foreign sentiment is associated with a reversal of -4.06% of the U.S. market index return in the next 12 months. We further find that non-U.S. investors' foreign sentiment toward the U.S. is driven by negative U.S. local news tone, while U.S. local sentiment toward the U.S. market is not driven by the same news tone. Collectively, our results suggest that both international and U.S. investors display foreign sentiment arisen from overreaction following each other's (bad) news, whereas their respective local sentiments are not driven by an overreaction to their own local news.

We entertain alternative explanations, including changes in risk, risk aversion, as well as shocks to fundamentals, market liquidity, or volatility. However, we argue that any of these alternative explanations cannot explain the overall set of our findings. For example, our findings suggest that U.S. and non-U.S. investors each overreact more to negative news of other regions and less to those of their own regions.[9] To address risk and fundamental concerns, we first focus on ADRs. These stocks should have similar return dynamics on a monthly basis as their foreign counterparts, as they are driven by the same fundamentals

[8] Negative bias towards information outside one's own group is a central human behavior (Tajfel, 1982; Hewstone, Rubin, and Willis, 2002). Allport (1954) recognized that negative bias towards outgroup and positive bias towards ingroup can be two separate behavioral biases that need not coexist. Akelog and Kranton (2000) show theoretically that group differences lead to intergroup bias and change economic outcomes. It is difficult for outgroup negativity to be simply interpreted as objective risk aversion or perception of risk/uncertainty. We discuss this in detail in Section 5.3.

[9] Put it differently, if one argues that risk aversion contains a subjective sentiment component, then such definition of risk aversion would essentially be equivalent to sentiment.

with limited room for time-varying risk or time-varying risk aversion to generate different effects on their prices. However, we find that *FS* is positively associated with the contemporaneous price difference between ADRs and their counterparts, which subsequently reverts. This is consistent with *FS* leading to sentiment-driven price dislocations but inconsistent with fundamental or risk/risk aversion explanations. Exploring the relation between FS and market volatility, we do not find a predictive relation between *FS* and subsequent market volatility in both the destination and origin markets. In addition, controlling for VIX doesn't alter our findings. This suggests that change in risk aversion or objective changes in risk are not the main drivers. Furthermore, for risk or risk aversion to be able to explain our results, we would require an unrealistically large and rapid change in risk/risk aversion.[10] The market volatility and VIX tests also provide evidence that the flow-shift decisions are driven by uninformed demand, opposed to planned rebalancing at the management company level due to mean-variance global optimization schemes.

Next, we control for potential liquidity shocks by using the Pastor and Stambaugh (2003) liquidity risk factor. Such shocks are not the driver behind our findings as *FS* coefficient estimates remain similar. We further address the liquidity concern by taking advantage of our panel data and exploiting market capitalization differences across markets. The idea is that smaller markets are more subject to liquidity concerns. The fact that our findings are not concentrated in smaller countries confirms that our findings are not simply due to markets with low levels of liquidity. Moreover, the fact that non-U.S. investors' foreign sentiment towards the U.S. market also predicts its return reversal further alleviates the liquidity concerns, as the U.S. market is fairly liquid.

Finally, we acknowledge that one cannot completely rule out a rational explanation for sentiment-based findings (Kozak, Nagel, and Santosh 2018). However, given the collective set of our findings, and the nature of our measure, it is more likely that our findings are driven by foreign investor sentiment.

Our paper contributes to several strands of literature. Our first contribution is to the literature on international asset pricing. Our findings shed light on the roles of foreign investors in market efficiency in three important aspects. *First*, we show that the effect of foreign investors on market efficiency is likely to be multi-faceted, which requires an in-depth understanding in the age of globalization. Kacperczyk et al. (2020) find that foreign investors contribute to market efficiency in the long term at the individual-stock level. We show another side of foreign investors: their investments generate sentiment-driven effects *at the market level*, which is not conducive to market efficiency in the *intermediate* term. Our finding that foreign sentiment comes from overreaction following negative foreign news and is exacerbated by a country's

[10] The magnitude of the change in returns over the short period is too large to be justified by change in risk or risk aversion explanations. Brunnermeier and Nagel (2008) find little evidence that risk aversion change rapidly. Campbell and Cochrane (1999) and Kyle and Xiong (2001) show that time varying risk or risk aversion does not generate a predictable reversal in prices.

foreignness is of interest to the general public and policy makers as geopolitical considerations has become the center of global economic and financial interactions.

Second, we contribute to the discussion on global market return predictability. Our results complement those of Rapach, Strauss, and Zhou (2013) who argue that U.S. fundamentals (reflected in U.S. market returns) are a *momentum predictor* of foreign market returns, while non-U.S. fundamentals display limited predictive ability on the U.S. market return. We contribute by showing that both U.S. and non-U.S. foreign sentiment are a *contrarian predictor* of each other's market returns. Moreover, consistent with Gabaix and Koijen (2020)'s hypothesis that flows—especially retail, mutual-fund, and foreign flows—are the most important force driving the total variance of aggregate U.S. equity prices, we document that our flow-shifting measure based on information extracted from a combination of all three aforementioned flow concepts evince worldwide *cross-border* return predictability. The fact that our foreign sentiment measure displays sizable out-of-sample predictability further demonstrates its economic significance, as most market return predictors fail the out-of-sample test (Goyal and Welch, 2008; Martin and Nagel, 2019).

Third, we shed light on the nature of cross-border equity capital flows by providing a way to use our foreign sentiment identification to decompose such flows into different components with differential asset pricing implications. We show that equity capital flows contain an important sentiment-driven component driven by sentiment, which is linked to local news; and a residual component, which predicts return continuation, thereby consistent with information (Froot and Ramadorai, 2008; Albuquerque, Bauer, and Schneider, 2009). Jotikasthira, Lundblad, and Ramadorai (2012) explore a *funding shock* channel and find that extreme inflows to and outflows from (akin to sales and redemptions) individual developed-market funds investing in emerging markets symmetrically predict reversals in the *cross-section* of *emerging market* prices. We examine the *time-series* of *developed market* prices and introduce a new channel of foreign investor overreaction to local news, which is distinct from the funding shock channel.[11] Our analysis suggests that news-related aggregate shifts in sentiment across borders affect both non-U.S. developed markets and the U.S..

Our second contribution is to shed light on the relation between news, investor behavior, and asset prices. Whether news tone leads to right or wrong investor actions or, relatedly, whether it positively or negatively predicts asset price movements is still in debate.[12] In the international context, Calomiris and Mamaysky (2019) document the return predictability of news while taking no stand on the mixed signs of

[11] In our setting, sales and redemptions or total flows of aggregate U.S. international funds do not predict return reversals. In fact, we find that these components are associated with return continuations. The conclusion remains the same even when we condition on extreme flows. These flow components are six and seven times larger than FS, respectively.

[12] See mixed views or evidence in Klibanoff, Lamont, and Wizman (1998), Huberman and Regev (2001), Hillert, Jacobs, and Müller (2014), Peress (2014), Soo (2018), Cheng, Jiang, and Song (2020), Jiang, Li, and Wang (forthcoming).

such predictability observed in individual countries. Similarly, Huang, Lehkonen, Pukthuanthong, and Zhou (2018) show news tone return predictability across asset classes, with mixed signs. Dang, Moshirian, and Zhang (2015) study the commonality of news tone around the world. We contribute by identifying the *sentiment-driven* part of investor flows in the *cross-border* setting and by showing that in this setting, news tone shapes the investor sentiment effect, which inherently entails negative return predictability. Finally, Golez and Karapandza (2020) examine nine major car companies across three countries and find that local newspaper journalists are positively biased about their home-country car companies. We focus on the actions of foreign investors via flows and analyze the worldwide implications generally at the market level, covering the majority of developed markets. Such actions are also affected by the news from the destination markets rather than the origin markets (i.e., home markets).

Our final contribution is to the literature on investor sentiment. Prior literature focused on identifying a "global" sentiment component based on convincing evidence of contagion or common movement of local sentiment measures (e.g., Baker et al. 2012 and Gao et al. 2018). We directly identify foreign investors' cross-border sentiment effect, which prior literature do not focus on. We show that foreign sentiment concept is important and document one important channel driving it, which is about investors' interpretation of cross-border publicly available information. Our foreign sentiment measure can be useful for future research that aims to specifically focus on or control for foreign investors' cross-border sentiment.

2. Data and Sentiment Measures

2.1 Returns

International county-level equity returns are the monthly returns of Morgan Stanly International Capital (MSCI) country indices obtained from Datastream.[13] MSCI country index normally covers approximately 85% of the equity universe, which represents a major part of a country's equity market. Due to issues that are particularly relevant for shorter term return predictability tests such as tradability and illiquidity, we consider all international developed countries as defined by MSCI in our analyses.[14] To be consistent with Calomiris and Mamaysky (2019, henceforth, CM) developed country classification, we remove Hong Kong and end up with 21 countries.[15]

[13] Monthly returns of foreign indices are adjusted for changes in the value of the foreign local currency relative to U.S. dollar.

[14] We concentrate on developed countries because the majority of international funds available to U.S. investors are funds tracking non-emerging markets. Within our sample period, the average U.S. investors' allocation to emerging equity market funds accounts for only 12% of their total allocation to international mutual funds. As of December 2017, total assets held by U.S. funds tracking emerging markets is 396 billion, while total assets held by all U.S. international funds are 3 trillion.

[15] Our findings are virtually the same if we include Hong Kong in the analysis (see Appendix A1 for country list).

The total market cap of developed markets as a whole represents more than 70% of the world market cap. There are also liquid ETFs tracking each of the MSCI developed country indices. Therefore, for the purpose of understanding cross-border investment implications, these market indices are the most economically important as well as liquid and tradable international financial market indices.

2.2 Flows and Sentiment Measures

We obtain mutual fund flows data for the U.S. and 21 non-U.S. developed markets. Due to data availability our main analysis of foreign sentiment (*FS*) is based on the sentiment of U.S. investors toward international markets. In our regression analysis we include local and foreign sentiment measures from the U.S. and Non-U.S. markets. To distinguish between all measures in our discussions, our variable notations indicate whether the sentiment measure is from the U.S. or Non-U.S. markets.

Aggregate monthly U.S.-based open-end mutual fund flow data are from Investment Company Institute (ICI). We use the ICI data (instead, for example, Morningstar mutual fund database) because the ICI data contains unique flow components, which are crucial for the construction of our sentiment measures. Specifically, the ICI decompose total fund net flows into four components: exchanges in, exchanges out, sales, and redemptions. The summation of all four components equals to the total fund net flows. The components of total net flows are grouped into two unique parts: net exchanges (exchanges in – exchanges out), which capture intra-family mutual fund money shifts across different fund categories; and net sales and redemptions (sales – redemptions), which captures the cash that enters or exits the fund family. Ben-Rephael et al. (2012, 2017) (hereafter, BKW) argue that net sales are likely to capture long-term savings and withdraws, while net exchanges are likely to capture short-term allocation decisions. As such, net exchanges have the potential of identifying early changes in investor demand. In terms of fund investment objectives, ICI classifies U.S.-based mutual funds into 42 categories.[16]

Using ICI aggregate mutual fund flow data, U.S. investors' foreign sentiment FS^{US} is defined as intra-family net exchanges into and out of international funds, normalized by the previous-month total assets of international funds.[17] The normalization takes into account the natural asset growth in the mutual fund industry. In a similar manner, net sales and redemptions ($FNSR^{US}$) is the normalized net sales of U.S.-based international funds. FS^{US} measures how U.S. investors allocate assets between the U.S. local market and international markets. When U.S. investors are optimistic (pessimistic) about international markets relative to the U.S. market, they shift their pre-existing investment in the U.S. (international) market towards

[16] ICI used to have 33 distinct investment categories. ICI did a reclassification in 2014. After reclassification, there are 7 major categories (level 3), 13 categories (level 4) and 42 sub-categories (level 5).

[17] International equity investments dominate international fund industry. In our sample period, the total asset allocation to international equity funds accounts for close to 90% of the total assets of all international funds on average. Our results (untabulated) are also robust if we exclude international bond funds.

international (the U.S.) market, resulting in a positive (negative) FS^{US}. Therefore, in contrast to existing sentiment measures, the measure teases out a foreign sentiment concept that is harder to be linked to equal optimism (or pessimism) about both the U.S. local market and the international market.

Following BKW, we also construct U.S. investors' local sentiment toward the U.S. local equity market LS^{US} based on intra-family money shifts between U.S.-based equity funds and bond funds. BKW show that LS^{US} predicts U.S. equity return reversals. The measure reflects local sentiment towards the equity market also because it reflects the notion that investors shift their investments to (from) the risky local assets (equity) using local safe assets (bond) as a benchmark (see Dumas, Kurshev, and Uppal 2009).

Unfortunately, there is no global version of the ICI data. Thus, to construct non-U.S. based mutual fund flows, we rely on data from the global open-end fund section of the Morningstar Direct mutual fund database. We focus on equity and bond funds, which are domiciled in all developed countries except the U.S.[18][19] Following Chuprinin, Massa, Schumacher (2015), we exclude funds with TNA less than 5 million USD. We further exclude the first 2 years' return data for all funds to alleviate the concern of the incubation bias (Evans 2010). The final sample includes 16,905 funds. Using the Morningstar style category, we mainly consider three groups of funds: (1) non-U.S. local equity funds, which are defined as non-U.S. based mutual funds investing in their respective local equity markets (e.g., Germany-based funds investing in Germany equity); (2) non-U.S. local bond funds, which are defined as non-U.S. based mutual funds investing in their respective bond markets (e.g., Germany-based funds investing in Germany bonds); (3) non-U.S. based U.S. equity funds, which are defined as non-U.S. domiciled mutual funds investing in the U.S. equity market (e.g., Germany-based funds investing in U.S. equity). There are 9,146 non-U.S. local equity funds, 6,278 non-U.S. local bond funds, and 1,481 non-U.S. based U.S. equity funds.

Since Morningstar does not provide corresponding flow shifting measures as ICI does, we proxy for the flow shifting concept using the relative net flow difference between two different fund categories. Specifically, for each non-U.S. market, the local investors' sentiment toward the local equity market LS^{INT} is defined as the local equity fund flows minus the local bond fund flows in that country.[20] In our later section, we will show that similar to LS^{US} being able to predict return reversals in the U.S. local market, LS^{INT} can also predict return reversals in non-U.S. local markets. Thus, the result is consistent with LS^{INT} being a local sentiment measure in a similar fashion as LS^{US}.

[18] Morgan Stanly International Capital (MSCI) defines 21 non-US countries (or regions) as developed markets, including: Austria, Australia, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hong Kong, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, United Kingdom.
[19] We follow Kacperczyk et al. (2020) and Etula, Rinne, Suominen, and Vaittinen (2020) to focus on developed markets as such markets are on average more tradable for foreign investors, especially, in our context, U.S. retail investors.
[20] The flows are percentage flows, i.e., dollar flows of all equity (bond) funds divided by total net assets of these funds.

Furthermore, to calculate aggregate non-U.S. investor foreign sentiment toward the U.S. market, we first calculate the flow shifting measure for each country as the flows to non-U.S. domiciled U.S. equity funds minus the flows to non-U.S. domiciled local equity fund. We then take a value-weighted average of these flow shifting measures across countries using each country's market cap as the weight. The resulting measure FS^{INT} captures the overall foreign sentiment of non-U.S. investors towards the U.S. market.[21]

Taken together, we focus on foreign and local sentiment information extracted from investors' actions – i.e., flows, which are arguably the most important factor driving aggregate equity market prices (Gabaix and Koijen 2020).

2.3 News

Country-level news tone, number of articles, and number of economic words are obtained from CM, which investigates the content and context of news article about each country's market (based on the entire database of English news articles by Thomson Reuters) and then constructs country-level topic-specific news data from January 1996 to December 2015. We focus on the news tagged by Thomson Reuters as relevant about a country's financial market.[22] News tone is an aggregation of word tone difference of each news article on a specific topic within a country.[23] Market topic news tone is used in our paper to proxy for the news tone about a given country's market.

2.4 Foreignness Measures

We use five measures of the difference between a country and the U.S. to proxy for the degree to which U.S. investors may view the country as an out-group. The first measure is the cultural distance between each developed country and the U.S.. It uses the cultural scores from Geert Hofstede.[24] Hofstede's culture score is built on six dimensions of national culture, including individualism, power distance, masculinity, uncertainty avoidance, long-term orientation, and indulgence.[25] For each developed country, we calculate the squared deviation of each dimension between the country and the U.S. We then take the squared root

[21] The non-U.S. foreign sentiment (FS^{INT}) is a time-series variable because U.S. market returns are a single time-series.
[22] CM considers five topics for developed countries: Market, Commodity, Governments, Corporate governance and structure, and the extension of credit.
[23] According to CM, article-level tone is defined as the number of positive words minus the number of negative words, scaled by the total number of words. Article-level topic specific tone is aggregated at the daily level. Monthly topic specific tone is a simple average of that month's daily tone.
[24] See https://geerthofstede.com/research-and-vsm/dimension-data-matrix/
[25] According to Geert Hofstede, individualism is defined as the extent to which people feel independent, as opposed to being interdependent as members of large groups; Power Distance is the extent to which the less powerful members of organizations and institutions (like the family) accept and expect that power is distributed unequally; Masculinity is the extent to which the use of force is endorsed socially; Uncertainty avoidance deals with a society's tolerance for uncertainty and ambiguity; Long-term orientation deals with change; Indulgence is about the good things in life.

of the average of the six dimensions as the country's cultural distance to the U.S. The second measure is the country's physical distance from the U.S. It is defined as the distance between the country's capital and Washington, DC. The distance measure is computed from Google map for each country. The third measure is the ancestral distance, calculated as the fraction of US citizens with ancestors from the country. Data about the fraction of U.S. citizens with ancestors from a foreign country is obtained from U.S. Census Bureau. The fourth measure is the religion dummy – i.e., whether protestant is the most popular religion in the country. The fifth measure is a language dummy, defined by whether English is the official language or predominant second language in that country. These two measures are the proxy for religious and linguistic distance. Religion and Language data are obtained from The World Factbook published by Central Intelligence Agency (CIA).

Finally, we also construct a composite distance measure that combines the distance information from all the above five measures. Since the five measures include continuous and binary measures, we construct the composite measure in the following way: first, we transform the continuous variables into dummy variables. We sort countries into terciles based on each variable and then scale the tercile rank into 0 and 1, with 1 representing the most different from the U.S. Next, we redefine the binary measures to have a similar interpretation. The first is a religious dummy, which receives the value of 0 if Protestant is the most popular religion in the country and one otherwise. The second is a language dummy that is equal to 0 if the country's official language or predominant second language is English, and one otherwise.

2.5 Summary Statistics

Figure 1A depicts the 6-month moving averages of net exchange of U.S. based international funds from 1992 to 2017. Similarly, Figure 1B and 1C depict the 6-month moving averages of net sales and total assets. As the figure shows, net sales are positive and increasing most of the time, which is consistent with the natural asset growth of U.S. based international fund sector. In contrast, net exchange is balanced between positive and negative values.

Table 1 Panel A reports summary statistics of U.S.-based mutual fund flows, US equity returns, and news tone for the U.S. market. First, note that the monthly averages of LS^{US} and FS^{US} are around zero. This is consistent with the fact that these measures capture investor asset reallocation decisions. In contrast, $FNSR^{US}$*'s* average is around 0.59%, capturing the natural growth in assets under management over the sample period. Similar to LS^{US} and FS^{US} , our international LS^{INT} and FS^{INT} flow-based measures are also averaged around zero. Finally, to alleviate the influence of outliers, all sentiment measures are winsorized at 1% and 99% percentiles.

3. U.S. Based Foreign Sentiment and International Markets

In this section, we first establish the foreign sentiment effect by examining the return predictability of our foreign sentiment measure. We then investigate the role of U.S. investors in deriving this effect. Last, we broaden the scope of the foreign sentiment effect by examining the relation between total capital flows and foreign sentiment.

3.1 The Contemporaneous Relation between Flows and International Returns

As is the common practice in the sentiment literature, sentiment effect is established via a return reversal pattern. We therefore start by examining the contemporaneous relation between foreign sentiment (FS^{US}), the local sentiment in destination markets (LS^{INT}), and international returns. Table 3 reports results of the panel regressions of international returns of 21 developed countries on FS^{US} and LS^{INT} from 1992 through 2017.[26] In all the specifications, we include country fixed effects and cluster standard errors by time (double clustering by time and country or removing country-fixed effects does not change our finding). The results show that FS^{US} and LS^{INT} are both positively related to international returns, regardless of whether FS^{US} and LS^{INT} are included in the same regression or in separate regressions, suggesting that foreign sentiment and the destination-market local sentiment capture different aspects of sentiment in local market prices.

3.2 The Relation between Sentiment and Subsequent International Returns

We then investigate the relation between foreign sentiment and the subsequent international returns. Panel A of Table 4 reports the results of panel regression in which future international returns are regressed on FS^{US}. The dependent variables—subsequent cumulative international returns—are constructed using five alternative horizons: the subsequent one, three, six, nine, and twelve months. We follow BKW and control for normalized net sales and redemptions ($FNSR^{US}$). To make sure that our findings are not driven by investor's feedback response to return, we control for contemporaneous and lagged market returns (up to five lags).[27]

The results show that FS^{US} negatively predicts international returns, consistent with it being a sentiment measure. A one standard deviation (1-STD) increase in FS^{US} is associated with a -1% return in the subsequent month. The economic significance is substantial especially given that the country indices

[26] We choose panel regression for two reasons: (1) instead of using an arbitrary weighting scheme, we allow FS^{US} to reflect a weighting scheme based on the importance of each country (i.e., the amount of variance); Naturally, countries that are more affected by foreign flow shifts should have a more substantial pricing effect. (2) it allows to control country fixed effects, and it fits our country-level news tone interaction analysis. In our unreported tables, we confirm that our findings are robust in time-series regression specification, where we group all international market returns into a single return time series.

[27] Following Da, Engelberg and Gao (2014), we control five periods of lagged returns in the regression. Our results are not sensitive to the number of lagged returns controlled in the regression.

are market-level returns instead of individual stock returns; they are also based on liquid developed stock markets with a combined market value that is comparable to the U.S. market value. The returns become even more negative over longer horizons, reaching -2.5% over a 6-month horizon and -3.4% over a 12-month horizon. Overall, the results suggest that the negative return predictability of FS^{US} is significant, particularly in shorter horizons.

In Panel B of Table 4, we also include the destination-market local sentiment (non-U.S. local sentiment LS^{INT}) and the origin-market local sentiment (U.S. local sentiment LS^{US}). The results show that FS^{US} predicts negative international returns of a similar magnitude as in Panel A. In addition, LS^{INT} also predicts reversals in the destination-market local returns. But, its predictive power of LS^{INT} is mainly concentrated at longer horizons. The results suggest that foreign sentiment and the destination-market local sentiment have distinctive asset pricing effects on destination-market local stock market returns.

When we instead explore the predictability of U.S. local sentiment (LS^{US}), we find that LS^{US} is not able to predict returns in international markets. This stands in contracts to LS^{US} ability to predict return reversals in the U.S. market (as shown in BKW and confirmed in Panel A of Table 12 of this paper). Moreover, we also find that FS^{US} is not able to predict returns in the U.S. market (Panel A of Table 12). Putting together, the sharp differences in predictability between FS^{US} and LS^{US} suggest that foreign sentiment and the origin-market local sentiment have distinctive asset pricing effects: foreign sentiment only predicts destination-market returns, while the origin-market local sentiment only predicts the origin-market return.

The fact that FS^{US} captures the shifts between the origin and destination markets, and the fact that the return predictability of FS^{US} is different from those of LS^{INT} and LS^{US} suggest that the foreign sentiment effect on returns is through a channel that is different from a simple absolute optimism/pessimism about the local markets in both the destination and origin countries (also referred to as sentiment contagion).[28]

It is worth noting the coefficients on other controls in the regression. First, we include contemporaneous returns of the U.S. markets as Rapach, Strass, and Zhou (2013) show U.S. returns may contain fundamental information about international returns. Our results are not affected by these controls.

Second, Table 4 indicates that there is a positive relation between net sales and redemptions ($FNSR^{US}$) and future international returns, of which significance (Panel B of Table 4) is concentrated in shorter terms (below 6 months). Table 3 shows that the contemporaneous $FNSR^{US}$-return relation is also positive. Our results indicate that at the aggregate level of all U.S. international funds, sales and redemptions predict return continuation in the time series of developed market prices. In unreported results, we verify that total net flows to U.S. international funds are also positively related to future international market returns. This

[28] In untabulated results, we verify that return predictability of FS^{US} is not driven by the 2007-2008 financial crisis.

relation still holds even if we focus on the extreme flow quintile or decile subsamples of these flow components. Jotikasthira, Lundblad, and Ramadorai (2012) examine extreme inflows to and outflows from individual developed-market funds investing in emerging markets. They find that such flows symmetrically predict reversals in the cross-section of emerging market prices, thus establishing that the domestic cross-sectional price-pressure effect in Coval and Stafford (2007) can extend to the cross-section of emerging market prices. Flows of an individual fund are akin to sales and redemptions. Our $FNSR^{US}$ results suggest that the time-series relation between aggregate flows and developed market prices appears to be driven by different economic forces than the temporary price-pressure based funding shock channel, likely because U.S. investors' funding shocks are unlikely to affect liquid developed-market indices as a whole on a monthly basis.

Overall, the results in the above two sections suggest that when U.S. mutual fund investors shift their pre-existing investments between the U.S. and international markets, international market prices move in the direction of U.S. flows contemporaneously, but then reverse in the subsequent months.

3.3 Out-of-Sample Predictability

To further gauge the economic significance of the return predictability of foreign sentiment, we perform out-of-sample tests on the second half of the sample period (2005-2017) using the first half of the sample (1992-2004) as the training period (for the rolling window method, the length of the rolling window equals the length of half of the sample period). Welch and Goyal (2008) show that in-sample predictability for a variety of widely accepted market return predictors cannot survive out of sample. Kandel and Stambaugh (1996) and Campbell and Thompson (2008) argue that out-of-sample predictability (OOS R^2) near 0.5% can signal economically significant monthly return predictability. We, therefore, focus on the OOS predictability using both rolling-window and recursive methods. We proxy international returns with a time series of MSCI ACWI exclude US index returns.[29] We construct two predictors to reflect the spirit of the foreign sentiment predictability reported in Table 4.

We report the results in Table 5. Panel A corresponds to the result in Panel A of Table 4. It reports the OOS R^2 of residual FS^{US}, which is calculated as the residual of regression of FS^{US} on other control variables in the baseline regression. To avoid look-ahead bias, we make sure that all information used to estimate residual FS^{US} is limited to the data available through the training period. Panel B of Table 5 corresponds to the results in Panel B of Table 4. In this panel, we estimate the residual FS^{US} by regressing FS^{US} on all control variables in Table 4, Panel B.

[29] OOS R^2 does not change qualitatively if we use MSCI EAFE index returns as a proxy.

We find that residual FS^{US} has considerable out-of-sample predictability: with the rolling-window method, the OOS R^2s of forecasting one-month ahead returns are 4% and 4.58% for the two predictors, respectively; with the recursive window method, they are 2.65% and 2.90%, respectively. The predictability gradually declines for predicting longer horizon returns, but can still maintain an OOS R^2 of above 2% for 6-month ahead returns, and 0.5% for the 12-month ahead returns using the recursive method.

The magnitude of the OOS R^2 matches with the magnitude of the international return predictors in Rapach, Strass, and Zhou (2013). Interestingly, we differ from Rapach et al. (2013) in that they show that U.S. fundamentals (returns) are a momentum predictor (i.e., positively predicts) international returns, whereas our U.S. foreign sentiment is a contrarian predictor of international returns.

3.4 The Role of Foreign Investors

So far, we have shown that the foreign sentiment measure can predict return reversals in the international markets. This foreign sentiment effect is measured by the negative coefficient in the regression of international returns on foreign sentiment. However, it is unclear whether this effect is indeed due to foreign (U.S.) investors' investment. Specifically, if U.S. foreign investment drives the effect of *FS*, one would expect the effect to be stronger for markets with larger fraction of foreign investment. To shed light on such a linkage and to get closer to a causal interpretation, we proceed in two steps. First, in Section 3.4.1, we provide compelling cross-country results where we show that the degree of U.S. investment in a country is indeed associated with the degree of the foreign sentiment effect. Second, in Section 3.4.2, we use a quasi-natural experiment that affects the degree of foreign investment in a given market to support the idea that the degree of U.S. foreign investment causes / reinforces such sentiment effect.

3.4.1 Foreign Investment and Foreign Sentiment

To obtain evidence that it is U.S. investors who generate the foreign sentiment effect, we start by exploring the cross-sectional variation of potential U.S. investment in each destination market. Countries with higher fractions of U.S. investment are more likely to be affected by the investment decisions of U.S. investors (see, e.g., Fang et al. 2015; Kacperczyk et al. 2020). To proxy for U.S. investors' investment influence on each individual destination market, we use the amount of market-level investment done by US investors in such countries. More specifically, we use the assets under management (AUM) of all the U.S. ETFs tracking an individual non-U.S. country market return as a proxy for U.S. investors' investment in that country.[30] We then define *ForeignTilt* as U.S. investors' investment tilt to the individual country *c*, which is calculated

[30] ETFs tracking most MSCI developed country indices are available starting as early as 1996. This is crucial as time-series market return predictability test requires a long sample period. ETFs are also at the monthly frequency, which matches with the frequency of our main test. Most ETFs are also liquid, allowing investors to adjust their investment meaningfully on a monthly basis.

as the percentage of the U.S. ETFs' AUM investing in that country relative to the country's market cap ($\frac{U.S\ ETF\ AUM_c}{Market\ Cap_c}$). Therefore, if foreign (U.S.) investors' investment generates the foreign sentiment effect in the destination market, we expect that countries with higher *ForeignTilt* to display a higher foreign sentiment effect. On the contrary, if the destination-market local investors are the main driver of this effect, then we should not find that the foreign sentiment effect significantly varies with U.S. investment.[31]

Table 6 reports the regression of FS^{US} interacted with *ForeignTilt*. We transform *ForeignTilt* into a score between 0 (low tilt quintile) and 1 (high tilt quintile), where countries are ranked into quintiles each month based on the raw *ForeignTilt* measure. This ranking is akin to portfolio sorts, which ease interpretation of the economic magnitude and reduce the effect of outliers. The coefficient on the interaction term is significantly negative at the 1% level for subsequent returns of all horizons except the first month. An increase in *ForeignTilt* from 0 to 1 (i.e., from the lowest quintile of investment to the highest quintile) is associated with -0.021 more negative foreign sentiment coefficient for return horizon of 12 months. The absolute magnitude of the change is ten times more than the coefficient for the countries with bottom *ForeignTilt* quintile (i.e., *ForeignTilt*=0), for which their sentiment coefficient is 0.002. The evidence indicates that the foreign sentiment effect is larger in countries with potentially higher U.S. investment influence. Therefore, it suggests that U.S. investors contribute to the foreign sentiment effect on local market prices.

3.4.2 A Quasi-Natural Experiment

The previous section documents the association between U.S. investment and the foreign sentiment effect. However, without an identification strategy in which the investment of U.S. investors exogenously shifts, it is hard to eliminate other confounding effects. For example, although we control for the destination-market local investor sentiment, one cannot fully rule out that local investors' investment in these destination markets lead to this sentiment effect.

To sharpen our identification, we take advantage of the passage of the Jobs and Growth Tax Relief Reconciliation Act and use it as a quasi-natural experiment that results in an exogenous variation in U.S. investment influence in each destination market. The passage of the Jobs and Growth Tax Relief Reconciliation Act (JGTRRA) in 2003 significantly reduced U.S. investors' taxes on dividend income (from a maximum of 38.6% to a maximum of 15%) for the foreign firms whose domiciled country has a tax treaty with the U.S. After JGTRRA, U.S. investors are likely to increase investment more in higher dividend-paying countries, while the incentives of destination-market local investors to increase their equity

[31] In unreported results, we also compute an alternative *ForeignTilt* defined as U.S. investment in excess of what it should be if U.S. investors followed a passive investment strategy based on market cap, as prescribed by the CAPM. The results are similar.

investment do not change. This suggests that the variation in U.S. *ForeignTilt* to non-U.S. countries around the event would be plausibly exogenous. Furthermore, dividends have been widely reported to be preferred, particularly by retail investors for non-fundamental reasons (Hartzmark and Solomon, 2013), and fund managers accommodate such preference by adjusting their tilt towards dividend-paying stocks (Harris, Hartzmark, and Solomon, 2015). Therefore, this event is likely to generate a cross-sectional variation in the investment of the very same investors that our foreign sentiment effect is designed to capture – i.e., either retail investors or those investors who trade in a correlated manner as retail investors.

We follow Kacperczyk et al. (2020) by estimating a difference-in-differences (DD) specification. The treatment variable is the country-level dividend yield, calculated as the prior year-end country-level total dividend divided by country market value.[3233] We restrict our event sample to the observations three years before and after the tax reform (i.e., 2001-2006).[34] Our DD approach consists of several steps.

We first examine how *ForeignTilt* changes across different dividend-paying countries around the tax reform as a function of each country's dividend payments. We estimate:

$$ForeignTilt_{c,t} = \beta_0 + \beta_1 Div_{c,t} + \beta_2 After_t + \beta_3 Div_{c,t} \times After_t + \beta_4 Control + \delta_{c,t} + \varepsilon_{c,t}, \quad (2)$$

where *c* and *t* are subscripts for country and time, respectively; *After* is a dummy variable which is equal to one after 2003, and zero otherwise; δ represents country fixed effects; *Div* is the country-level dividend yield; Control variables include lag returns (up to five periods). The coefficient β_3 (on $Div_{c,t} \times After_t$) explores how *ForeignTilt* varies based on the intensity of dividend payments in each country, after the passage of the Tax reform. Panel A of Table 7 shows that high dividend-paying countries experience a significant increase in *ForeignTilt* relative to low dividend-paying countries after the tax shock. The effect is economically important, as the coefficient β_3 has a positive and significant value of 0.1, which is close to one-third of the standard deviation of *ForeignTilt* (0.36).

Next, we investigate how the exogenous increase in *ForeignTilt* affects the foreign sentiment effect using the following regression model:

$$\begin{aligned} IntRet_{c,t+1:t+12} = {} & \beta_0 + \beta_1 FS_t^{US} + \beta_2 Div_{c,t} + \beta_3 After_t + \beta_4 FS_t^{US} * Div_{c,t} + \beta_5 Div_{c,t} * After_t \\ & + \beta_6 FS_t^{US} * After_t + \beta_7 FS_t^{US} * Div_{c,t} * After_t + \beta_8 Control + \delta_{c,t} + \varepsilon_{c,t}, \end{aligned} \quad (3)$$

[32] Country-level dividend yield is stable during the event window. Our results are robust if we use the 2003 country-level dividend yield for the period after 2003.

[33] We conduct our analysis at the local market level. Thus, we cannot compare dividend-paying to non-paying firms within a given country. In addition, most of our analyzed countries are included in the tax treaty. In our sample, only Singapore does not have a tax treaty with the U.S. Thus, a binary treatment-control test (i.e., treaty vs. non-treaty) is not feasible. As a result, we compare differences across countries based on the intensity of dividend-paying stocks relative to all stocks (i.e., a dosage treatment).

[34] The first full effective calendar year is 2004. This DD analysis excludes the following countries because U.S. ETFs tracking these countries do not exist before 2004: Denmark, Finland, Ireland, New Zealand, Norway.

where $IntRet_{c,t+1:t+12}$ is country c's cumulative market return over the subsequent 12 months. The coefficient of interest β_7 captures how much the foreign sentiment effect changes across the different dividend-paying countries before and after the shock. Panel B of Table 7 reports that β_7 is significantly negative, suggesting that the event, by increasing the fraction of investment in a given country (first step), results in a stronger foreign sentiment effect. In terms of economic magnitude, a 1-STD increase in country-level dividend yield leads to a decrease in β_7 by 0.04 in the next twelve months, which is around 150% more negative than the unconditional foreign sentiment effect (β_1 in Table 4, Panel B). This means that after the tax reform, the foreign sentiment effect turns stronger in higher dividend-paying countries, suggesting that U.S. investors affect the sentiment generation in international markets.

In figure 2, we implement a pre-trend testing for the finding in Table 7, Panel B by visually inspecting the data during the tax reform period. We plot the time series of the difference in the foreign sentiment effect across destination markets (i.e., the coefficient on the $Div * FS^{US}$ term for each year). As can be seen in the figure, over a three-year window before the tax reform, the "parallel trend assumption" in the foreign sentiment effect holds across different dividend-paying countries (insignificant coefficients on the $Div * FS^{US}$ term). In other words, there are no differential pre-event trends in the impact of U.S. foreign investment on the foreign sentiment effect in different destination markets. Therefore, the figure confirms that our findings are not driven by pre-existing trends in the foreign sentiment effect across different dividend-paying countries.[35]

Overall, the results support that at the aggregate market level, foreign investment shapes the dissemination of the foreign sentiment effect in local markets, which is not conducive to local market efficiency around the world.

3.5 Foreign Sentiment and Cross-Border Flows

We broaden the scope of the foreign sentiment effect by linking it to total capital flows to further shed light on its importance. The foreign sentiment measure is based on the asset reallocation decisions of mutual fund retail investors. However, it may broadly capture market-level foreign sentiment of all U.S. investors that trade in a correlated, non-fundamental manner. For example, recent evidence suggests that institutional investors may also be sentiment traders, or they trade to accommodate investors' non-fundamental preferences (see Footnote 6). Furthermore, recent evidence suggests that retail, mutual-fund, and foreign flows are the top three drivers of the variance of aggregate U.S. equity prices (Gabaix and Koijen, 2020),

[35] Due to limited number of countries, it is not feasible to do propensity score matching. However, in the DD setting, the parallel assumption does not require treated and control countries to be the same in other country characteristics, as differences in these characteristics are differenced out as long as they follow the same trend (see, e.g., Bertrand and Mullainathan, 2003). Our parallel trend test suggests that all countries follow the same trend before the shock, thus alleviating the concern of characteristic differences drive our findings.

pointing to the possibility that these flows are the most important determinants of market-level asset pricing. FS^{US}—the international portfolio rebalancing flows of U.S. fund investors—is a part of U.S. cross-border flows. It is also formed based on the information related to all three aforementioned flow concepts. We therefore expect it to reflect important sentiment-driven asset pricing information embedded in total capital flows.

Using the U.S. cross-border flow data from Treasury International Capital (TIC) System, we find that the time-series correlation coefficient between FS^{US} and U.S. cross-border equity flows is 42%. Alternatively, a regression of the cross-border equity flows on FS^{US} yields an R^2 of 17%, indicating a large amount of the total variation of cross-border flows is explained by FS^{US}. Therefore, although the portfolio rebalancing flow identified by FS^{US} seems to be small in terms of magnitude, these numbers suggest that FS^{US} can serve as a proxy for the general sentiment-driven trading in cross-border flows. Such sentiment-driven trading can be either the institutional trading directly induced by FS^{US} or other U.S. investors' trading reflecting the same sentiment-driven motives underlying FS^{US}.

We then project the U.S. cross-border flows to each destination market on FS^{US}, thus decomposing the flows into a predicted component based on FS^{US} (*PredEF*) and a residual component that is not explained by FS^{US} (*ResEF*). We standardize both components for interpreting the economic magnitude.

Table 8 shows that *PredEF* negatively predicts international returns in a way similar to FS^{US} in terms of both significance and magnitude, suggesting that FS^{US} allows to tease out the non-fundamental demand component in cross-border flows. In contrast, we find that *ResEF* positively predicts international market returns. A 1-STD increase in *ResEF* predicts a 1% increase in international returns over the next 12 months. The contrasting return predictability between *PredEF* and *ResEF* suggests that *PredEF* represents the sentiment-driven cross-border flow component, while the residual component *ResEF* corresponds to the informative component of flows. The results also indicate that at the 12-month return horizon, the magnitudes of the return predictability of the dumb and the smart flow components are of the same order of magnitude.

Taken together, our results suggest that foreign sentiment is an important component in total capital flows. This sheds light on the multi-faceted nature of capital flows and provides a way to decompose such flows into different components with different asset pricing implications.

4. Foreign Sentiment and Public News Tone

We now examine the channel through which the foreign sentiment effect arises. Prior literature suggests that foreign investors' sentiment-driven demand is likely to arise from misinterpreting and overreacting to news (public signals) beyond its true fundamental value (e.g., Tetlock 2011; Dumas, et al. 2017), where the

effect is more pronounced for negative news (Tetlock 2007). We therefore examine the role of public news in the relation between foreign sentiment and returns.

4.1 The Dynamic Relation between News Tone and Sentiment

To motivate our analysis on the relation between public news and sentiment, we first investigate the lead-lag relation between the local public news tone in destination markets (i.e., non-U.S. markets), FS^{US} and LS^{INT} in a vector autoregression (VAR) analysis. Figure 3 plots these relationships using impulse response functions. Subplots 1 and 3 show the cumulative response of FS^{US} and LS^{INT} to a 1-STD shock in the local news tone, controlling for market returns. Correspondingly, Online Appendix IA1 reports the results of panel VARs of FS^{US} (or LS^{INT}) on lagged FS^{US} (LS^{INT}), and additional lags of the country-level local news tone and returns with country fixed effects.[36] The plots show that FS^{US} positively responds to the past local news tone, whereas LS^{INT} is not responsive to such news tone. Subplots 2 and 4 shows the cumulative response of the local news tone to a 1-STD shock in FS^{US} and LS^{INT}, respectively. The plots show that the destination-market local news tone does not respond to either FS^{US} or LS^{INT}. Overall, the lead-lag relationships suggest that the destination-market local news tone drives foreign sentiment, whereas it does not drive the destination-market local sentiment. The asymmetric response of FS^{US} and LS^{INT} to news suggests different mechanisms driving foreign sentiment and local sentiment. Our findings are also consistent with the notion that the destination-market local public news tone affects foreign sentiment rather than the other way around.

4.2 The Interaction of News Tone with Sentiment and Its Implications for Future Returns

Given the evidence of the destination-market local news leading foreign sentiment, we now further investigate how news affects the foreign sentiment effect. Panel A of Table 9 reports the estimates of the panel regression of future international returns on FS^{US}, LS^{INT}, and their interaction with the destination-market local news tone, which is measured as the 3-month moving average of the local news tone from month *t*-2 to *t*.[37] For the convenience of interpretation, we sort the news tone average into quintiles in descending order, and then rescale the quintile ranks between 0 (most positive) and 1 (most negative) as $RSNewsTone^{INT}$, meaning a reverse-scale news tone. The variable of interest in this panel are two interaction terms: $FS^{US} * RSNewsTone^{INT}$ *and* $LS^{INT} * RSNewsTone^{INT}$.

[36] Changing Cholesky order does not affect our results qualitatively.

[37] We use a 3-month average news tone because the VAR analysis in Online Appendix IA1 shows that the positive relation between news tone and FS^{US} is significant for three months. Results (unreported) are similar if we use lagged news tone.

The results first show that the coefficients on the interaction term $FS^{US} * RSNewsTone^{INT}$ are significantly negative in all specifications except for the first month, indicating that the predictive power of FS^{US} is highly related to the extent of negative news. The more negative the news is, the greater the ability of FS^{US} to predict international return reversal. For example, taking into consideration the positive relation between *NewsTone* and FS^{US} found in our VAR analysis, Column (5) shows that when news tone is in the top negative quintile ($RSNewsTone^{INT}$=1), a 1-STD *decrease* in FS^{US} is associated with an almost 11% increase in international return over a horizon of 12 months. In contrast, when news tone is in the bottom negative quintile ($RSNewsTone^{INT}$=0), the relation between FS^{US} and future international returns is no longer significantly negative except for the first month.

To further explore whether this relation is symmetric for reactions to positive or negative news, in table 9, Panel B, we further split the FS^{US} and LS^{INT} into positive ("FS^{US+}") and negative ("FS^{US-}") components and interact them with news tone. We find that $FS^{US-} * RSNewsTone^{INT}$ is negative and statistically significant, whereas $FS^{US+} * RSNewsTone^{INT}$ is neither statistically nor economically significant. The result suggests that FS^{US}'s return predictability is mainly driven by the interaction term $FS^{US-} * RSNewsTone^{INT}$. That is, when there is bad destination-market local news (i.e., high $RSNewsTone^{INT}$) coupled with U.S. investors shifting money back from destination markets to the U.S. market (i.e., negative FS^{US}), international stock market prices will significantly move in the opposite direction of the flow shift subsequently, resulting in high international returns in the subsequent months. The evidence is therefore consistent with the interpretation that the foreign sentiment effect is driven by an overreaction to negative destination-market foreign news, which leads to return reversal.

In contrast, the interaction of the destination-market local sentiment (LS^{INT}) with the public news tone in their respective local markets is not significant across all specifications in Panel A of Table 9. $LS^{INT-} * RSNewsTone^{Int}$ is also insignificant in Panel B of Table 9. Therefore, the destination-market local sentiment effect on stock returns is not driven by an overreaction to the destination-market negative local news. The results support that foreign sentiment and local sentiment effects on returns are driven by different channels and that negative local news tone of the destination markets drives the foreign sentiment effect (we find similar findings in Panel B of Table 12, when we analyze non-U.S. investors' foreign sentiment towards the U.S. market (see Section 5.1)).

In Appendix A2, Panel A, we further explore whether U.S. investors overreact to the destination-market local news that is economic relevant, or, in other words, about fundamentals as suggested in (Tetlock 2007, 2011; Dumas et al. 2017). We compute economic words ratio of country c as the ratio of the total number of economic words to the number of articles in that country. We then define *EconRelevance* as a dummy variable which equals to 1 if past 3-month news economic words ratio per article is above its sample mean,

and 0 otherwise. Panel A shows that U.S. investors' overreaction to the destination-market negative news is stronger when the local news has more economic relevance. This evidence suggests that foreign sentiment arises from overreaction to fundamental news rather than due to economically irrelevant news.

Importantly, it could be the case the foreign investors respond to the destination-market returns, rather than to local news tone. To test that possibility, in Appendix A3, we conduct a horse race between news tone and returns, where we also explore the interaction of FS^{US} with past international market returns. In particular, we construct $RSRet^{INT}$ the same way as we do $RSNewsTone^{INT}$, and rerun our analysis. The coefficients on the interaction FS^{US} with news remain as strong as in Table 9, while the coefficients of $FS^{US} * RSRet^{INT}$ are insignificant. This confirms that the foreign sentiment effect is driven by reaction to negative news tone instead of simply to negative past returns.

Finally, news tone in the origin and destination markets could be subject to common shocks. This alone need not be contradictory to our story as long as U.S. investors overreact to the news tone coming from the destination markets but not the one from the origin market. To rule out the possibility that foreign investors shift their assets from the destination market to the origin market solely because of bad origin-market news tone, we conduct a horse race by interacting FS^{US} with both non-U.S. local news tone and U.S. local news tone. Specifically, in the same way as we construct the international news tone $RSNewsTone^{INT}$, we define the U.S. news tone $RSNewsTone^{US}$ as the reverse scaled 3-month U.S. local news tone average. We then rerun the analysis by including both news tone measures and their respective interaction with FS^{US} in the regression. The results (reported in Appendix A4) show that the coefficient on $FS^{US} * RSNewsTone^{INT}$ is significant for international returns of all horizons, while the coefficient of $FS^{US} * RSNewsTone^{US}$ is insignificant. This finding suggests that the foreign sentiment effect arises from overreaction to the destination-market news tone rather than to the origin-market news tone.

4.3 The Role of News

The previous section suggests that the foreign sentiment effect appears to arise from overreaction to the destination-market news. In this section, we provide supportive evidence that such news indeed causes U.S. investors to overreact. We take advantage of the fact that the impact of news on investors is determined by the degree of investor attention (Tetlock 2015 and Ben-Rephael et al. forthcoming) and attention constraints (e.g., Hirshleifer and Teoh, 2003; Hirshleifer, et al. 2009).

Evidence suggests that both retail and institutional investors are subject to attention constraints (see Baber and Odean 2007; Da, et al. 2011 for retail investor evidence and Fang, Peress, and Zheng, 2014 for institutional investor evidence). When facing either too much information or extraneous information, investors may be distracted (Peress, 2014; Hirshleifer, et al. 2009; and Peress and Schmidt 2019). Therefore, our main test is based on using the Olympic Games held in the U.S. as an exogenous shock to reduce U.S.

investors' attention to non-U.S. news. Since we have a single time series, we address potential concerns about alternative explanations, using a simulation approach that reflects the spirit of a DD test.[38] We also supplement this test with an additional test that uses an abnormal news intensity measure to identify the country-months where U.S. investors are more likely to pay attention to the local news from a destination market.

We argue that the Olympic Games held in the U.S. attract distract U.S. investors from paying attention to foreign news. As such, their foreign sentiment effect is muted, as their chance of overreacting to non-U.S. local news is reduced. Table 10 reports the estimates of panel regressions of international contemporaneous and future returns on FS^{US}, news tone, Olympics dummy, and their interaction. Comparing the coefficient on the triple interaction term $FS^{US} * RSNewsTone^{INT} * Olympics$ and that on the double interaction term $FS^{US} * RSNewsTone^{INT}$ in Column 1 indicates that the Olympic Games contemporaneously reduce the negative news-induced foreign sentiment effect by around 50% (i.e., the coefficient estimate drops from 0.014 to 0.0071). If the foreign sentiment effect is due to overreaction reflected in contemporaneous return, then weaker overreaction should be accompanied by weaker subsequent reversal. The significantly positive coefficient estimates of the triple interaction terms from *t*+1 to *t*+12 (Columns 2-6) are consistent with this conjecture.

The results of the Olympic month dummy may be driven by factors that may happen to exist during the Olympic periods but are unrelated to the Olympic Games. As such, the observed reduction in the coefficient estimates may be spurious. To alleviate this concern, we also compute simulated *p*-values based on simulated data. Specifically, we build a pseudo Olympics dummy by randomly choosing three months within our sample period as the Olympic months. We repeat this exercise 10000 times and run the same regressions as in Table 10 each time. In each simulation, we keep the *t*-statistic of the coefficient of the triple interaction term. We then compute simulated *p*-values as the fraction of the simulated *t*-statistics, which exceed the empirical *t*-statistics (reported below the coefficient estimates). The simulation exercise is essentially a DD test in the sense that we compare the Olympic months with many sets of randomly picked pseudo Olympic months.

Based on the simulated *p*-values, the coefficients of the triple interaction term are significant at 10% level for all columns except columns 2 and 3, and significant at the 5% level for Column 6. Moreover, a joint test of all the coefficients on the triple interaction terms across all return horizons (Column 1-6) is significant at the 5% level. Note that the bar for this test is high since we rely on three observations for our

[38] U.S. held two Olympics games within our sample period: 1996 Atlanta Summer Olympics and 2002 Salt Lake City Winter Olympics. The Olympics month are July 1996, August 1996 and February 2002.

identification. Still, the observed statistical significance supports the validity of the Olympic events as an effective instrument.

The Olympics identification strategy takes advantage of investor *distraction*. As a supplementary test, we consider a variable that potentially identifies country-month observations with high U.S. investors' *attention* (opposed to distraction). A consistent result would imply a stronger effect. Specifically, the number of news articles has been commonly used as a proxy for attention to news (e.g., Fang and Peress 2009; Gao et al. 2020). In this spirit, we compute an abnormal news intensity measure to capture U.S. investors' attention to the local news from a country.

Our country-level abnormal news intensity measure is the ratio of detrended news article number of a country to detrended U.S. news article number. This measure removes any common shocks affecting both the U.S. and non-U.S. markets, as well as the linear trends and seasonality. The month with a high abnormal news intensity from a destination market is likely to be the time when U.S. investors pay attention to the news from that market. In such months, U.S. investors' chance of overreacting to the local news from that market is likely to be high. We, therefore, expect the foreign sentiment effect to that destination market to be stronger in such high-attention months. In Appendix A2, Panel B, we define *AbnNews* as a dummy variable which is equal to 1 if the past 3-month country-level abnormal news article number is above its sample mean, and 0 otherwise. The triple interaction term ($FS^{US} * RSNewsTone^{INT} * AbnNews$) is significantly negative, indicating indeed a greater foreign sentiment effect in those country-month observations where abnormal news intensity is high.

Overall, the Olympics results provide causal evidence that investors' *in*attention to the destination-market news leads to weaker overreaction to the destination-market news tone, while the abnormal news intensity results suggest that investors' attention to the destination-market news leads to stronger overreaction to such news tone.

4.4 Foreignness and News-Driven Foreign Sentiment

In this section, we provide a deeper understanding of how the bad news-driven foreign sentiment effect can arise. As discussed in the introduction, investors' overreaction to the destination-market bad news is related to a couple of behavioral biases from the psychology literature, including attribution bias and outgroup negativity (see Footnote 8 for details). If U.S. investors display an outgroup negativity type of bias towards foreign countries, such bias should be magnified if the country is perceived as more foreign. To support this interpretation, we investigate whether overreaction to foreign bad news increases with U.S. investor's perceived foreignness of a country. Specifically, we examine the six foreignness measures introduced in Section 2.4 that reflect the extent to which U.S. investors may view an international country as an outgroup.

Table 11 reports the estimates of panel regressions of international future returns on FS^{US}, news tone, foreignness measures, and their interactions. In each regression, we include one of the foreignness measures (denoted "*Foreign*"), a negative value of the coefficient of the triple interaction term $FS^{US} * RSNewsTone^{INT} * Foreign$ indicates that the news-induced foreign sentiment effect increases with the foreignness degree of a country. Focusing on the 12-month return as the dependent variable, the results show that the triple interaction coefficient is significantly negative across all measures except the language dummy measure. Turning to the composite foreignness measure in the last column of Table 11, we can evaluate the economic importance of the foreignness measure. The coefficient on $FS^{US} * RSNewsTone^{INT}$ is -0.078 and that on $FS^{US} * RSNewsTone^{INT} * Foreign$ is -0.081. This means the total effect of $FS^{US} * RSNewsTone^{INT}$ is -0.078-0.081=-0.159 for the countries with the highest foreignness degree (i.e., those with *Foreign*=1), while it is -0.078 for the countries with the lowest foreignness degree (i.e., those with *Foreign*=0). Therefore, the news-induced foreign sentiment effect is 104% larger ($= \frac{-0.159}{-0.078} - 1$) for the countries with the highest foreignness degree than for the countries with the lowest foreignness degree.

Overall, the results suggest that the degree of a country's foreignness is a significant driver of the negative news-driven foreign sentiment effect. The results are thus consistent with the outgroup negativity bias.

5. Additional Analysis, Robustness, and Alternative Explanations

5.1 Analysis of Non-U.S. investors' Foreign Sentiment

The previous sections focus on U.S. investors' foreign sentiment towards international markets due to the richness of the data tracking U.S. investment in non-U.S. markets and of the heterogeneity across non-U.S. markets, and the fact we can directly measure asset reallocation for U.S. mutual funds' retail investors. Still, to demonstrate the generality of our foreign sentiment effect and also to provide an out-of-sample validation, we perform a comparable analysis of non-U.S. investors' foreign sentiment towards the U.S. market. To this end, we examine whether a proxy of non-U.S. investors' foreign sentiment towards the U.S. market, defined as FS^{INT} in Section 2.2, is related to the U.S. market (i.e., non-U.S. investors' destination market) return in a similar fashion as the relation between FS^{US} and non-U.S. market (i.e., U.S. investors' destination market) returns. Although we use a noisy proxy of investor reallocations, we find qualitatively similar results that confirm that the sentiment effect we document is general and not only confined to U.S. investors.

Table 12 Panel A reports the estimates of time-series regressions of future U.S. returns on LS^{US} (U.S. investors' local sentiment towards the U.S. equity market) and FS^{INT} (the non-U.S. investors' foreign sentiment towards the U.S. market) over our full sample period. Consistent with BKW findings, LS^{US}

significantly negatively predicts U.S. market returns, consistent with it being a U.S. local sentiment measure. FS^{INT} also significantly negatively predicts U.S. market returns, suggesting that non-U.S. investors' foreign sentiment is related to U.S. market returns in the same way as U.S. investors' foreign sentiment is related to international market returns. The effects of LS^{US} and FS^{INT} do not subsume each other. Therefore, the effects of U.S. local sentiment and non-U.S. foreign sentiment are distinct from each other. Also note that the economic significance of U.S. local sentiment and non-U.S. foreign sentiment are both large and of similar magnitudes. Interestingly, Rapach, Strauss, and Zhou (2013) find that U.S. fundamentals (reflected in U.S. market returns) are a momentum predictor of foreign returns, while non-U.S. fundamentals display limited predictive ability with respect to the U.S. In contrast, our findings indicate that non-U.S. foreign sentiment is also a contrarian predictor of U.S. returns. Thus, sentiment effects seem to play a symmetric role across markets, while U.S. fundamentals dominate in affecting global markets.

We also include FS^{US} (the U.S. foreign sentiment) in the regression. We find that FS^{US} is unrelated to U.S. market returns. Therefore, U.S. foreign sentiment towards international markets and non-U.S. foreign sentiment towards the U.S. market are also distinct from each other.

Other controls in the regression include $LNSR^{US}$ (normalized net sales of U.S. local equity funds), $FNSR^{US}$ (normalized net sales of U.S. international funds), and contemporaneous and lagged U.S. market returns. These controls do not subsume the results of FS^{INT} and LS^{US}.

We then proceed to examine whether the public news channel is also an important channel driving the non-U.S. foreign sentiment effect. Table 12 panel B reports the estimates of the time-series regression of future U.S. returns on positive-negative split of LS^{US} and FS^{INT}, and their interactions with the reverse-scale U.S. local news tone. The variables of interest are four interaction terms: $LS^{US+} * RSNewsTone^{US}$, $LS^{US-} * RSNewsTone^{US}$, $FS^{INT+} * RSNewsTone^{US}$ and $FS^{INT-} * RSNewsTone^{US}$. The first three interaction terms yield generally insignificant coefficients. Therefore, U.S. local news has no significant influence on the U.S. local sentiment effect. Furthermore, U.S. local news does not have a significant influence on non-U.S. investors' sentiment towards U.S. market when non-U.S. investors are shifting money towards the U.S. market.

In contrast, $FS^{INT-} * RSNewsTone^{US}$ is significantly negative for return horizons up to the subsequent six months. Therefore, the results suggest that only when local U.S. news are bad (high $RSNewsTone^{US}$) coupled with non-U.S. investors shifting money away from the U.S. market (i.e., negative FS^{INT-}), U.S. stock market prices will significantly move in the opposite direction to the flow shift subsequently, resulting in high returns in the subsequent months. The results are consistent with the interpretation that non-U.S. investors' foreign sentiment effect is driven by their overreaction to the

destination-market negative news (in this case, such news is the U.S. local news), which leads to return reversal.

In sum, the analysis of the U.S. market complements our previous finding in international markets. In both markets, foreign sentiment strongly responds to local negative news, while local sentiment does not. The results suggest a symmetric foreign sentiment effect for investors around the world: investors' foreign sentiment is driven by overreaction to each other's bad news, but their local sentiment is not related to such overreaction.[39]

5.2 Robustness

We perform several robustness checks that address potential alternative explanations. We also include detailed discussion about the alternative explanations in the next section. Our first test alleviates the concern that our findings are driven by changes in fundamentals. To this end, we examine the relation between U.S. foreign sentiment and ADR price premia, which is the price difference between ADRs and their home counterparts (i.e., the shares of the same firm listed in their home markets).[40] ADRs share the same fundamentals as their home counterparts, and any changes in international fundamentals, risk or risk aversion are expected to change the price of both ADRs and their home shares (see Hwang, 2011). If these changes are the main driver of FS^{US}, then we would observe no relation between FS^{US} and ADR premia. However, Online Appendix IA2 shows a significant positive association between U.S. foreign sentiment and ADRs premia with or without a number of controls for ADR characteristics such as the liquidity of both the ADR and its home counterparts and foreign exchange rate. This suggests that when U.S. investors

[39] There are two potential media-related biases: Golez and Karapandza (2018) show that local national newspapers are positively biased for the local automotive industry. This bias stems from journalists expressing their opinions. Relatedly, given that newswire news is in English, there might be a positive English news bias towards the U.S.. These media biases do not drive our news-related results for three reasons. First, we focus on aggregate news rather than individual firm-specific news. There is no evidence that firm-level media bias can aggregate at the market level. Second, evidence in other studies supports limited role of newswire bias. Specifically, our news measures are based on newswire journalists, who monitor a real-time press release feed and quickly replay the main points to their subscribers. Thus, they have little time to reflect their opinions (Li, 2018). Luo, Manconi, and Massa (2020) find no evidence of a political bias in newswire news. This is in contrast to newspapers journalists that have significant room for personal opinions and biases. Third, our own findings are inconsistent with the news bias concerns. Specifically, our symmetric foreign sentiment finding in this section suggests that non-U.S. investors are also overly negative towards U.S. local news, which should be positively biased towards the local U.S. economy (if there were a positive market-level media bias towards the home market). Furthermore, in Table 10, we do not find significant difference in news effect between English and non-English countries, suggesting that our results are not driven by potential negative bias towards non-English speaking countries in English news articles. Table 1 also shows that the mean (median) of U.S. news tone is similar to that of foreign country news tone, suggesting that there is no significant downward (or upward) bias in international news tone relative to U.S. news tone.

[40] Monthly ADR price premium is defined as the standardized difference between ADR price and its underlying asset price in local currency adjusted for exchange rates and ADR ratios. ADRs trading data is obtained from CRSP and trading data of ADRs home counterpart is from Datastream. We follow the procedures in Karolyi, Lee and Dijk (2012) to screen ADRs, which address the data quality issues in Datastream.

are subject to foreign sentiment, they will trade the ADRs first, thus pushing the ADR price away from the price of their home counterparts, as trading ADRs in the U.S. market is less costly than invest directly in international markets. The results are, therefore, consistent with the sentiment explanation rather than the fundamental explanation.

Second, to mitigate concerns that our findings are driven by changes in risk, uncertainty, or risk aversion, we investigate whether our FS^{US} predicts subsequent market volatility in both the destination markets and the origin market. Results in Online Appendix IA3 show that there is no significant relation between FS^{US} and future return volatility in both international markets (panel A) and the U.S. market (panel B). Moreover, Panel A of Online Appendix IA4 shows that our results are robust after controlling for the Pastor and Stambaugh (2003) liquidity risk factor and changes in VIX.[41] These results support the notion that FS^{US} captures sentiment and not shocks to liquidity or to uncertainty, expected risk, or risk aversion.

Third, to further address the concern that FS^{US}*'s* return predictive power may be due to the liquidity of international markets, we take advantage of the cross-sectional variation of country-level liquidity proxied by country-level market capitalization. We sort the sample of 21 developed foreign countries into four country portfolios by country equity market capitalization. If liquidity is the main driver, then FS^{US}'s return predictability will be mainly concentrated in smaller countries. However, Panel B of Online Appendix IA4 shows that FS^{US}'s return predictability is also significant in medium and large country groups. The foreign sentiment effect is not simply due to a lack of liquidity or price pressure.

Finally, we show that our foreign sentiment measure has unique pricing implications, controling for sentiment measures suggested by the literature. Specifically, we contrast FS^{US} with Baker et al. (2012, hence forth, BWY) global sentiment measure ("*GlbSent*") and with Hwang popularity score measure ("*PopScore*") by running a horse race with all three measures in one regression in Online Appendix IA5.[42] The original BWY measure is at the annual level. We construct a monthly version of BWY global sentiment measure to fit our monthly data analysis.[43] The *PopScore* measure is also at an annual frequency. However, since it is based on a survey on general public's attitudes' of a country, it does not focus on directly

[41] The implied volatility index for the European market only starts from 1999. Therefore, we use VIX as a proxy for changes in risk or risk aversion given the fact that correlation coefficient between VIX and VSTOXX is approximately 90%.

[42] We thank Jay Ritter for providing the international IPO data for our sample period. We follow BWY and construct the global sentiment measure as first principle component of country-level total sentiment index. For each country, total sentiment index is calculated as the first principle component of four sentiment proxies including volatility premium, first-day return on IPOs, the number of IPOs and market turnover. We also thank Byoung-Hyoun Hwang for providing the popularity score data. We further extend it to the end of 2017. Hwang's popularity score measure is nonstationary according to the unit root test, which makes it not directly usable for our panel regressions. We therefore detrend it by taking the first difference.

[43] The correlation between original BWY *yearly* global sentiment measure and our *monthly* version is 85% in the overlapped sample period.

measuring investor sentiment and cannot be measured at higher frequencies. The results show that the FS^{US} return predictability remain similarly strong both statistically and economically as in Table 4 after controlling for BWY global sentiment measure and Hwang's popularity score. The BWY global sentiment measure significantly negatively predict international returns at the horizon of 12 months. This is consistent with the original BWY study, which demonstrates that the measure can predict annual returns. Therefore, the result suggests that the global sentiment measure of BWY reflects a global sentiment that operates over the long run. In contrast, FS^{US} predicts return reversals for both very short-term (next month) and long-term (next year) returns. Therefore, the foreign sentiment effect we capture is distinct from the global sentiment effect captured by BWY. Likewise, we find the Hwang popularity score is positively related to contemporaneous international returns but not significantly related to future returns.

5.3 Additional Discussion of Alternative Explanations

In this section, we further discuss the alternative explanations of changes in risk, or risk aversion and concerns of liquidity or liquidity shocks (hedging demand), with respect to the findings in prior literature.

The first alternative explanation is risk concerns, which can be driven by either the quantity of risk or the attitude toward risk (risk aversion). Under this explanation, a decrease in foreign sentiment coupled with a higher future return is a rational risk premium compensation, and this is the reason for the higher returns going forward. Regarding this potential alternative, first note that we do not find changes in the quantity of risk measures going forward in both destination and origin markets, and control for contemporaneous changes in VIX, which reflects expected risk or risk aversion, does not alter our findings.

Still, our results specifically suggest that U.S. and non-U.S. investors each view the other's market more negatively, whereas they are not overly negative toward their own local markets. This *asymmetry* in response (investor reallocation decisions) between local and foreign investors might still be consistent with a rational compensation for risk.

One can think of three potential explanations. The first potential explanation is that risk/risk aversion increases across the U.S. and non-U.S. markets. Under this scenario, foreign trading decisions at the destination markets are more sensitive, and thus, quicker to react relative to origin market trading decision. However, under this explanation, we would expect foreign sentiment to have predictive power in the origin market as well if a rational risk premium compensates for a fundamental change. However, we find that our foreign sentiment measures cannot predict the origin market returns.[44] Moreover, if changes in risk/risk aversion are the main reason behind the documented return reversals, one would expect local sentiment to respond somewhat in a similar manner, potentially with some delay. That is, local sentiment should also be

[44] See Panel A of Table 9 for FS^{US}. We also find FS^{INT} cannot predict their origin market returns either (untabulated).

driven by overreact to negative local news. However, we do not find such a reaction. Finally, if in both markets, foreign investment is more sensitive, one should also observe a decrease in local flows into equity (LS^{INT}) to some extent, when U.S. foreign sentiment is low. This should result in a positive correlation between LS^{INT} and FS^{US}, since both should be responding to the same change in market conditions. However, Table 1 show that LS^{INT} and FS^{US} are negatively correlated. In a similar manner, LS^{US} and FS^{INT} are also negatively correlated. For an objective observer from outside the origin and destination markets, these patterns appear biased or at least subjective.

A second potential story is that foreign sentiment captures *relative* changes in risk or risk aversion across markets. Specifically, investors view their home country more positively relative to the destination markets. Similar to the first alternative, one would expect foreign sentiment to also have predictive power at the origin market, which we do not observe.

The last potential alternative explanation that explain the asymmetric reaction to local news tone, is that local investors is the group of investors that is biased. For example, local investors can be subject to a home bias, which prevents them from correctly respond to local news. Under this view, foreign investors *correctly* respond to the news in destination markets, and the observed subsequent returns is a compensation for time-varying risk. Still, this would imply a delayed reaction by local investors. While this is possible, we do not find a relation between *NewsTone* in local markets and local sentiment measures at any horizon. Second, this interpretation is still behavior-based as one of the two group of investors is not rational. However, given the nature of our measures, and prior literature findings, it is less likely that foreign retail investors react correctly while local investors do not.

Finally, as discussed in BKW, the magnitude and short horizon of the return predictability related to the foreign sentiment is too large to be justified in the Gordon growth model based on the risk consideration. Several studies also find little evidence that risk aversion changes rapidly (Brunnermeier and Nagel, 2008) and that time-varying risk or risk aversion does not necessarily generate a predictable reversal in prices (Campbell and Cochrane, 1999; Kyle and Xiong, 2001). Thus, any changes in investors' actions that result in short-term return reversals (in our case, a -1% return reversal in the first month) is more likely to be driven by a behavioral explanation than a rational one. Taken together, while we need not completely rule out a rational explanation for a sentiment concept (Kozak, Nagel, and Santosh 2018), it is difficult for any rational explanation based on objective risk considerations to account for all above three considerations.

The second alternative explanation is liquidity. Starting with the level of liquidity, one may argue that the U.S. market may be more liquid than international markets, which leads to the asymmetric predictability results of FS^{US}. But this very explanation is inconsistent with the fact that non-U.S. investor foreign sentiment can also predict reversals in the U.S. market return but not in international returns. The second channel of liquidity is liquidity shocks or hedging demand (Campbell, Grossman, and Wang 1993). In

untabulated results, we find both negative and positive FS^{US} (FS^{INT}) do not predict return reversals in U.S. (international) return. These flow measures capture the notion of investors moving into the destination market and out of the origin market simultaneously and vice versa. Therefore, the results indicate that when investors shift money out of their respective origin markets (i.e., hedging), such action cannot predict return reversals in their respective origin markets. In contrast, when investors shift money out of their respective destination markets, such action predicts return reversals in their respective destination markets. There is, therefore, a clear negative bias towards the foreign market in the shifting out part of their activity that is unexplainable by investors' liquidity demand quantity or price pressure alone. Furthermore, hedging demand arises from endowment shocks (a.k.a., liquidity shocks) to investors (see, e.g., Campbell, Grossman, and Wang 1993). Therefore, $FNSR^{US}$, which reflects changes in savings or income, is arguably a better proxy of endowment changes, than FS^{US}, which reflects shifting in investors' *pre-existing* investments.

6. Conclusion

We explore the sentiment effect of foreign investors, which is not conducive to the market efficiency of local markets. We construct a new and *direct* measure of U.S. investors' sentiment-driven demand shocks using mutual fund flow shifts toward international markets. The measure focuses on the notion of cross-border sentiment and does not rely on market prices and directly reveals investors' asset *re*allocation decisions between foreign and home investments. We denote the measure as "foreign sentiment."

Our first key finding is that foreign sentiment predicts return reversals in the destination markets and is distinct from local sentiment measures in both the origin and the destination markets. Our foreign sentiment measure is only a contrarian predictor of international market returns, while the local sentiment measures are only contrarian predictors of local markets. Thus, our measure allows to tease out the sentiment-driven foreign demand for local assets generated by foreign investors. We show causal evidence of foreign investment generating this foreign sentiment effect by utilizing the U.S. Jobs and Growth Tax Relief Reconciliation Act as an exogenous shock to investors' portfolio choice. We also show foreign sentiment has broad implications: Capital flows—one of the most important indicators of cross-border capital movements—can be decomposed into a large noise part related to the foreign sentiment, predicting return reversals, and a residual part, predicting return continuation and thereby consistent with it being an informed component. These contrasting effects shed light on the multi-facet nature of the relation between capital flows and equity prices.

Our second key finding is that we identify overreaction to the destination-market local news as one important channel driving the foreign sentiment effect. Specifically, the contrarian predictive ability of foreign sentiment is driven by overreacting to the destination-market local public news signals, and in particular, by overreacting to negative news. In contrast, the destination-market local sentiment predictive

ability is not driven by mis-reaction to the same local public signals. To provide a causal interpretation of news, we exploit the Olympic Games held in the U.S. as an exogenous shock to U.S. investors' attention to non-U.S. news. Consistent with the outgroup negativity bias, we find that the bad news-driven foreign sentiment effect is stronger in countries that are culturally remote from the U.S. or generally more foreign.

A complimentary analysis of non-U.S. investors' foreign sentiment towards the U.S. market provides consistent results, which suggests worldwide investors' tendency of overreacting to each other's bad news and such sentiment seems to play a symmetric role across the U.S. and international markets. Our findings are also robust to various controls and potential alternative explanations.

Overall, our findings shed light on the roles of foreign investors on international asset pricing via their flows. Such roles are likely to be multi-faceted, thus requiring an in-depth understanding in the age of globalization. Our findings also shed light on the cross-border effect of news on investor sentiment. Finally, we augment the sentiment literature by proving another channel of international sentiment, which is distinct from the local and the "global" sentiment components.

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Figure 1. Flows and assets under management

This figure depicts the 6-month moving averages of net exchanges (1A), net sales (1B), and total assets (1C) of U.S.-based international funds from July 1992 to December 2017. Dollar units are in millions, adjusted for inflation and presented in December 2017 prices.

Figure A

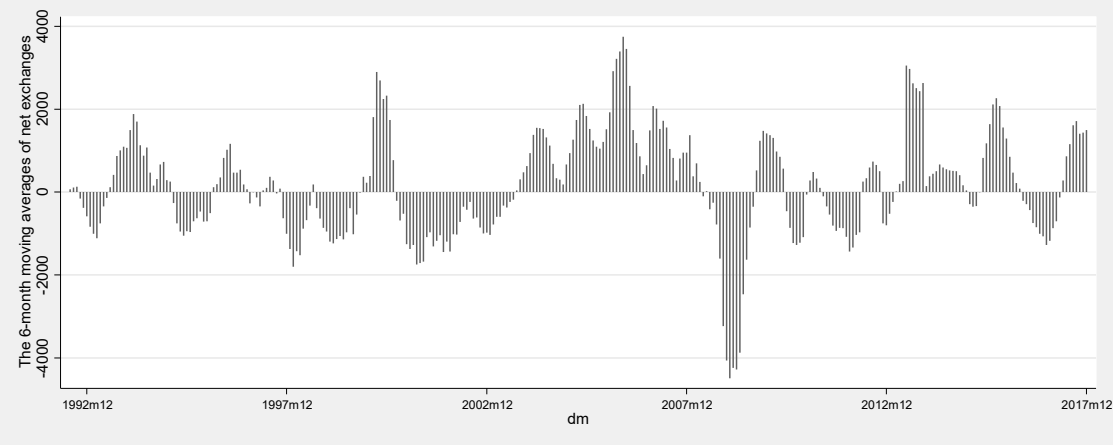


Figure B

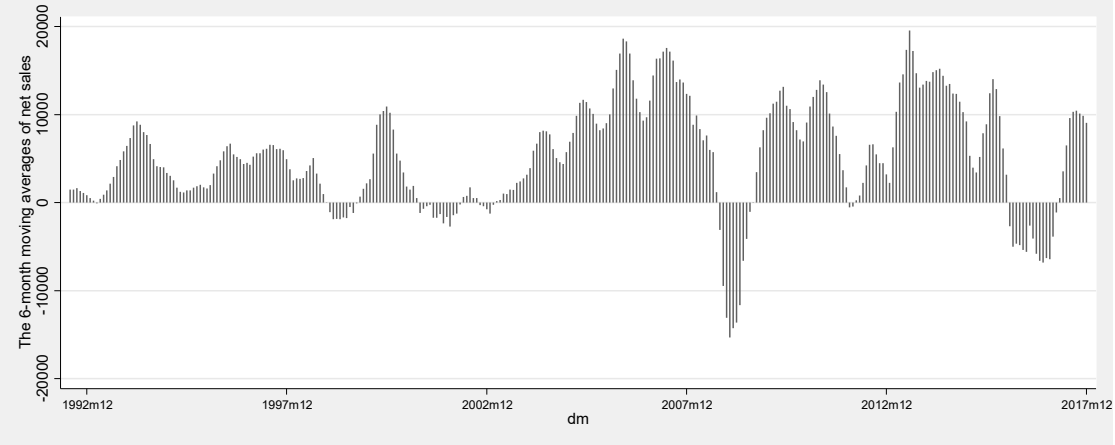


Figure C

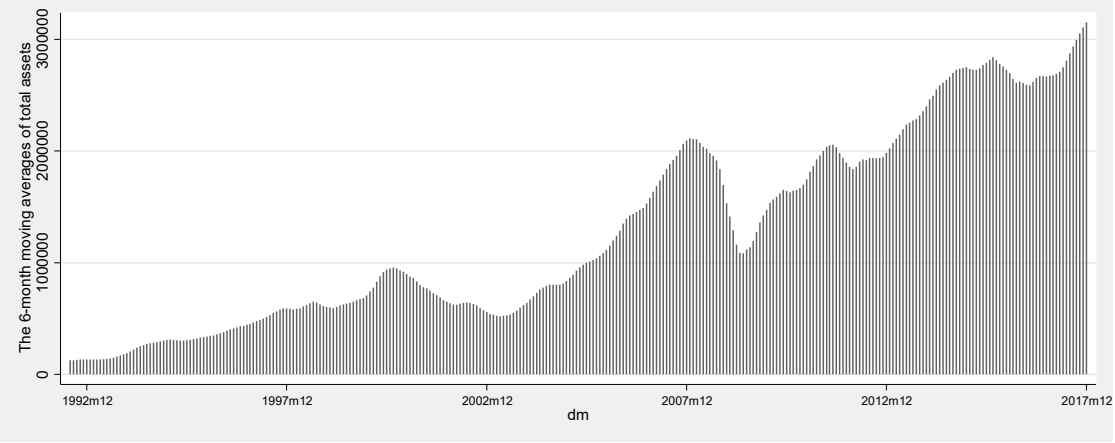


Figure 2. Parallel trend test

Figure 2 shows point estimates (Panel B of Table 7) and 95% confidence intervals for the differences in foreign sentiment beta over 12-month horizon across different dividend paying countries in a six-year event window around the passage of the Jobs and Growth Tax Relief Reconciliation Act (JGTRRA). The first full effective calendar year is 2004. FS^{US} is U.S. investors' foreign sentiment toward the non-U.S. markets, defined as the normalized net exchanges into and out of U.S.-based international funds. *Div* is the country-level dividend yield, calculated as the last year-end country-level total dividend divided by country market value.

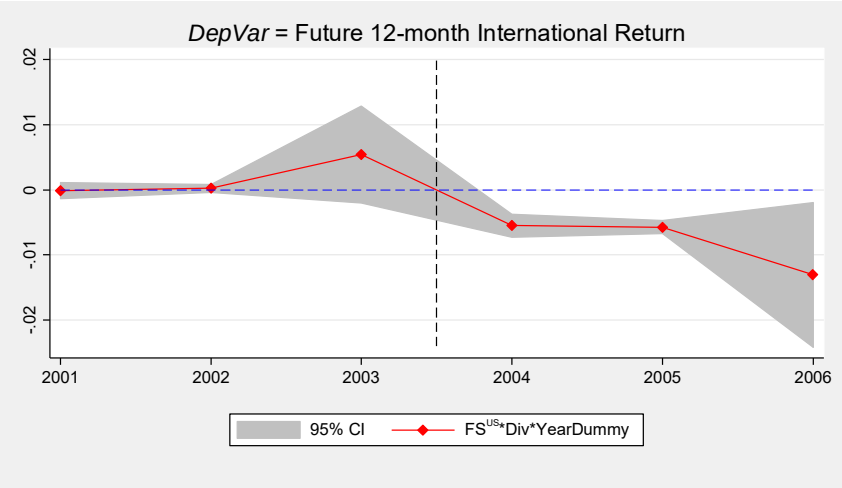


Figure 3. Cumulative impulse response functions of FS^{US}, LS^{INT} and foreign news tone

The following figures depict the cumulative impulse response functions of *FLOW* (FS^{US} or LS^{INT}), and the local public news tone in destination markets (i.e., the non-U.S. markets), controlling for the returns in destination markets using the following three-equation panel VAR system with four lags of each of the dependent variables.

$$\text{NewsTone}_{c,t}^{INT} = \beta_0 + \sum_{j=1}^{4} \beta_{1j} FLOW_{t-j} + \sum_{j=1}^{4} \gamma_{1j} \text{NewsTone}_{c,t-j}^{INT} + \sum_{j=1}^{4} \delta_{1j} IntRet_{c,t-j} + FE + \varepsilon_{c,t}$$

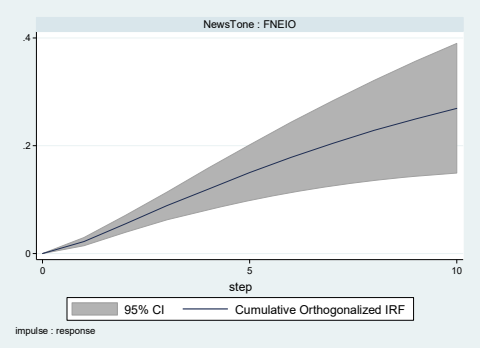
$$\text{IntRet}_{c,t} = \beta_0 + \sum_{j=1}^{4} \beta_{2j} FLOW_{t-j} + \sum_{j=1}^{4} \gamma_{2j} \text{NewsTone}_{c,t-j}^{INT} + \sum_{j=1}^{4} \delta_{2j} IntRet_{c,t-j} + FE + \varepsilon_{c,t}$$

$$\text{FLOW}_{t} = \beta_0 + \sum_{j=1}^{4} \beta_{3j} FLOW_{t-j} + \sum_{j=1}^{4} \gamma_{3j} \text{NewsTone}_{c,t-j}^{INT} + \sum_{j=1}^{4} \delta_{3j} IntRet_{c,t-j} + FE + \varepsilon_{c,t}\,.$$

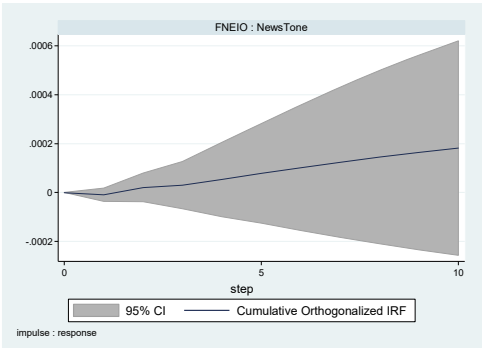
$IntRet_{c,t}$ is the monthly return of international market (i.e., the destination market of U.S. foreign investment) c at month t. *FLOW* is FS^{US} or LS^{INT}. FS^{US} is U.S. investors' foreign sentiment toward the non-U.S. markets, defined as the normalized net exchanges into and out of U.S.-based international funds. LS^{INT} is non-U.S. investors' local sentiment toward their local equity markets, defined as the percentage net flow difference between non-U.S. based mutual fund investing in local equity market and bond market. $NewsTone^{INT}$ is the country-level local public news tone in destination markets. Graph 1 depicts the cumulative response of FS^{US} to a one standard deviation shock in $NewsTone^{INT}$. Graph 2 depicts the cumulative response of $NewsTone^{INT}$ to a one standard deviation shock in FS^{US}. Graph 3 depicts the cumulative response of LS^{INT} to a one standard deviation shock in $NewsTone^{INT}$. Graph 4 depicts the cumulative response of $NewsTone^{INT}$ to a one standard deviation shock in LS^{INT}. The sample period is from January 1996 to December 2015 based on news data availability. In each graph, the solid black line represents the cumulative impulse response and the dash grey line represent the 95% confidence intervals. Standard errors and confidence interval of the impulse response functions are estimated via 10,000 simulations.

Cumulative Response of

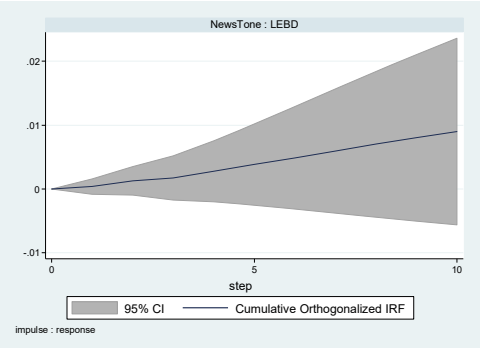
1. FS^{US} to a one STD shock in $NewsTone^{INT}$



2. $NewsTone^{INT}$ to a one STD shock in FS^{US}



3. LS^{INT} to a one STD shock in $NewsTone^{INT}$



4. $NewsTone^{INT}$ to a one STD shock in LS^{INT}

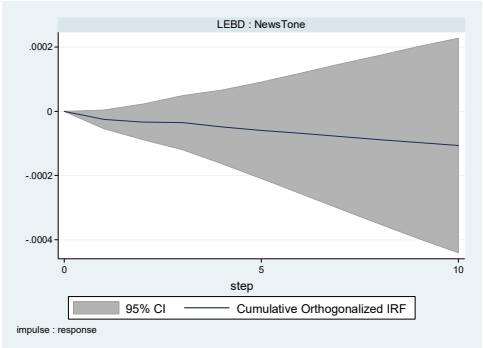


Table 1. Summary statistics

The table presents the summary statistics of fund flows, news tone and returns. The sample period is from January 1992 to December 2017. Panel A reports summary statistics of mutual fund flows, country-level market return and news tone for the U.S. market. FS^{US} (%) is U.S. investors' foreign sentiment toward the non-U.S. markets, defined as the normalized net exchanges into and out of U.S.-based international funds. $FNSR^{US}$ (%) is the normalized net sales of U.S.-based international funds. LS^{US} (%) is U.S. investors' local sentiment toward the U.S. equity market, defined as the normalized net exchanges between U.S.-based equity funds and bond funds. $LNSR^{US}$ (%) is the normalized net sales of U.S.-based equity funds. *USRet* (%) is valued-weighted return of the S&P500 total return index. Panel B reports summary statistics of mutual fund flows, country market returns and country-level news tone for 21 non-U.S. developed countries. LS^{INT} (%) is non-U.S. investors' local sentiment toward their local equity markets, defined as the percentage net flow difference between non-U.S. based mutual funds investing in local equity market and bond market. FS^{INT} (%) is non-U.S. investors' foreign sentiment toward the U.S. market, defined as the value-weighted average of percentage net flow difference between non-U.S. based U.S. equity funds and local equity funds. *IntRet* (%) is the return of MSCI country total index. For both the U.S. and international markets, country-level news tone is an aggregation of word tone difference (positive word minus negative word) of each news article that is assigned to the "market" topic. $NewsTone^{US}$ (%) is the news tone for the U.S., and $NewsTon^{INT}$ (%) is country-level news tone for each international country. News tone data is from January 1996 to December 2015.

Variable	Mean	Median	STD	Min	Max	N
Panel A: U.S. market						
FS^{US}	0.01%	0.01%	0.29%	-1.55%	1.34%	312
$FNSR^{US}$	0.59%	0.50%	0.87%	-1.90%	5.57%	312
LS^{US}	0.00%	-0.01%	0.12%	-0.72%	0.55%	312
$LNSR^{US}$	0.39%	0.27%	0.59%	-1.18%	2.45%	312
USRet	0.86%	1.28%	4.02%	-16.70%	10.90%	312
$NewsTone^{US}$	-0.45%	-0.43%	0.09%	-0.75%	-0.28%	240
Panel B: International markets						
LS^{INT}	0.01%	0.00%	3.32%	-40.36%	30.74%	5445
FS^{INT}	-0.03%	0.01%	1.10%	-5.65%	6.19%	312
IntRet	0.79%	1.01%	6.57%	-37.04%	33.26%	6552
$NewsTone^{INT}$	-0.40%	-0.37%	0.18%	-1.38%	0.05%	5040

Table 2. Correlation matrix of flow components

This table reports correlation coefficients among different fund flows. The sample period is from January 1992 to December 2017. FS^{US} is U.S. investors' foreign sentiment toward the non-U.S. markets, defined as the normalized net exchanges into and out of U.S.-based international funds. LS^{US} is U.S. investors' local sentiment toward the U.S. equity market, defined as the normalized net exchanges between U.S.-based equity funds and bond funds. LS^{INT} is non-U.S. investors' local sentiment toward their local equity markets, defined as the value-weighted average of percentage net flow difference between foreign-based mutual fund investing in equity market and bond market. FS^{INT} is non-U.S. investors' foreign sentiment toward the U.S. market, defined as the value-weighted average of percentage net flow difference between non-U.S. based U.S. equity funds and local equity funds.

	FS^{US}	LS^{US}	LS^{INT}	FS^{INT}
FS^{US}	1.00			
LS^{US}	0.39***	1.00		
LS^{INT}	-0.14**	-0.13**	1.00	
FS^{INT}	-0.18***	-0.16***	-0.05	1.00

Table 3. Contemporaneous relation between flows and international returns

This table reports results of panel regression of contemporaneous returns of 21 non-U.S. developed countries on FS^{US} and LS^{INT} from January 1992 to December 2017.

$$IntRet_{c,t} = \beta_0 + \beta_1 Flow + \beta_2 Control_{c,t} + \delta_{c,t} + \varepsilon_{c,t} ,$$

$Flow$ is either FS^{US} or LS^{INT}; $IntRet_{c,t}$ is the monthly return of international market (i.e., the destination market of U.S. foreign investment) c at month t. FS^{US} is U.S. investors' foreign sentiment toward the non-U.S. markets, defined as the normalized net exchanges into and out of U.S.-based international funds. LS^{INT} is non-U.S. investors' local sentiment toward their local equity markets, defined as the percentage net flow difference between non-U.S. based mutual funds investing in their local equity market and bond market. The regressions include country fixed effects. Control variables include $FNSR^{US}$ and lagged *IntRet* (up to five periods). All flow variables are standardized. Standard errors are clustered by time. *P*-values are in parentheses. *, **, and *** represent significance at the 10%, 5% and 1% level, respectively.

	(1)	(2)	(3)
	$IntRet_{c,t}$	$IntRet_{c,t}$	$IntRet_{c,t}$
FS_t^{US}	**0.012*** **		**0.013*** **
	(0.00)		**(0.00)**
$LS_{c,t}^{INT}$		0.0021	**0.0025** **
		(0.12)	**(0.05)**
$FNSR_t^{US}$	0.0068*		0.0083*
	(0.08)		(0.06)
$IntRet_{c,t-1}$	0.028	0.084	0.029
	(0.55)	(0.13)	(0.56)
$IntRet_{c,t-2}$	-0.061	-0.033	-0.072
	(0.16)	(0.50)	(0.13)
$IntRet_{c,t-3}$	0.047	0.097**	0.058
	(0.23)	(0.03)	(0.18)
$IntRet_{c,t-4}$	-0.021	0.013	-0.018
	(0.62)	(0.79)	(0.69)
$IntRet_{c,t-5}$	-0.018	0.0083	-0.015
	(0.67)	(0.86)	(0.74)
Obs.	6552	5445	5445
R2	0.08	0.02	0.08

Table 4. International return predictive regression

This table reports results of the panel regression of future returns of 21 non-U.S. developed countries on FS^{US} from January 1992 to December 2017. In Panel A, we analyze the return predictability of FS^{US}. In Panel B, we further include LS^{INT} and LS^{US} as controls. The following specification is used for both Panel A and Panel B.

$$IntRet_{c,t+1:t+i} = \beta_0 + \beta_1 FS_t^{US} + \beta_2 Control_{c,t} + \delta_{c,t} + \varepsilon_{c,t}.$$

$IntRet_{c,t+1:t+i}$ is the monthly future return of international market *c* (i.e., the destination market of U.S. foreign investment) over the next *i* months. FS^{US} is U.S. investors' foreign sentiment toward the non-U.S. markets, defined as the normalized net exchanges into and out of U.S.-based international funds. LS^{INT} is non-U.S. investors' local sentiment toward their local equity markets, defined as the percentage net flow difference between foreign-based mutual fund investing in equity market and bond market. LS^{US} is U.S. investors' local sentiment toward the U.S. equity market, defined as the normalized net exchanges between U.S.-based equity funds and bond funds. *USRet* is valued-weighted return of the S&P500 total return index. All specifications include country fixed effects. Other control variables include $FNSR^{US}$, *IntRet* and lagged *IntRet* (up to five periods). All flow variables are standardized. Standard errors are clustered by time. *P*-values are in parentheses. *, **, and *** represent significance at the 10%, 5% and 1% level, respectively.

Panel A: Foreign sentiment predictability

	(1)	(2)	(3)	(4)	(5)
	$IntRet_{c,t+1}$	$IntRet_{c,t+1:t+3}$	$IntRet_{c,t+1:t+6}$	$IntRet_{c,t+1:t+9}$	$IntRet_{c,t+1:t+12}$
FS_t^{US}	**-0.0092*** **	**-0.015*** **	**-0.025*** **	**-0.027** **	**-0.034** **
	(0.00)	**(0.01)**	**(0.00)**	**(0.02)**	**(0.01)**
$FNSR_t^{US}$	0.0082**	0.013*	0.020**	0.022**	0.028**
	(0.05)	(0.06)	(0.04)	(0.05)	(0.03)
$IntRet_{c,t}$	0.088*	0.15*	0.22*	0.18	0.16
	(0.09)	(0.07)	(0.08)	(0.24)	(0.32)
$IntRet_{c,t-1}$	-0.025	0.073	0.052	0.034	-0.013
	(0.59)	(0.35)	(0.65)	(0.82)	(0.94)
$IntRet_{c,t-2}$	0.081**	0.11	0.098	0.036	0.023
	(0.04)	(0.16)	(0.38)	(0.81)	(0.89)
$IntRet_{c,t-3}$	0.0049	0.013	-0.044	-0.094	-0.12
	(0.91)	(0.85)	(0.72)	(0.55)	(0.47)
$IntRet_{c,t-4}$	0.0047	-0.038	-0.060	-0.11	-0.091
	(0.91)	(0.71)	(0.70)	(0.52)	(0.61)
$IntRet_{c,t-5}$	-0.0044	-0.055	-0.13	-0.14	-0.14
	(0.93)	(0.57)	(0.39)	(0.41)	(0.45)
Obs.	6531	6489	6426	6363	6300
R2	0.03	0.03	0.03	0.03	0.03

Panel B: Foreign and local sentiment predictability

	(1)	(2)	(3)	(4)	(5)
	$IntRet_{c,t+1}$	$IntRet_{c,t+1:t+3}$	$IntRet_{c,t+1:t+6}$	$IntRet_{c,t+1:t+9}$	$IntRet_{c,t+1:t+12}$
FS_t^{US}	**-0.010*** **	**-0.015** **	**-0.023** **	**-0.023***	**-0.027***
	(0.01)	**(0.02)**	**(0.02)**	**(0.07)**	**(0.06)**
$LS_{c,t}^{INT}$	-0.0019	**-0.0047** **	**-0.0085*** **	**-0.011** **	**-0.013** **
	(0.15)	**(0.03)**	**(0.01)**	**(0.02)**	**(0.02)**
$FNSR_t^{US}$	0.0096**	0.015*	0.020*	0.019	0.018
	(0.04)	(0.08)	(0.08)	(0.14)	(0.18)
LS_t^{US}	-0.0024	-0.0014	-0.0066	-0.0060	-0.0027
	(0.54)	(0.86)	(0.61)	(0.71)	(0.88)
$USRet_t$	0.090	-0.045	-0.019	-0.042	-0.034
	(0.42)	(0.83)	(0.95)	(0.92)	(0.94)
$IntRet_{c,t}$	0.070	0.19**	0.26**	0.21	0.18
	(0.18)	(0.03)	(0.02)	(0.14)	(0.27)
$IntRet_{c,t-1}$	-0.027	0.087	0.055	0.034	-0.022
	(0.58)	(0.29)	(0.65)	(0.84)	(0.90)
$IntRet_{c,t-2}$	0.10**	0.13	0.100	0.037	0.026
	(0.02)	(0.11)	(0.41)	(0.82)	(0.89)
$IntRet_{c,t-3}$	0.0063	-0.000037	-0.085	-0.13	-0.13
	(0.89)	(1.00)	(0.52)	(0.45)	(0.45)
$IntRet_{c,t-4}$	0.0011	-0.068	-0.10	-0.16	-0.12
	(0.98)	(0.54)	(0.53)	(0.41)	(0.52)
$IntRet_{c,t-5}$	-0.020	-0.092	-0.18	-0.18	-0.15
	(0.69)	(0.39)	(0.28)	(0.34)	(0.44)
Obs.	5445	5403	5340	5277	5214
R2	0.03	0.03	0.03	0.03	0.03

Table 5. Out-of-sample predictive ability of residual FS^{US}

This table reports the out-of-sample R^2 statistics of residual FS^{US} in predicting future returns in international markets with both rolling and recursive estimation method. Similar to Table 4, using residual FS^{US} captures the unique information that is contained in FS^{US}. The out-of-sample R^2 measures the proportional reduction in mean squared forecast error (MSFE) of predictive model (alternative model) relative to benchmark model (null model) (Campbell and Thompson, 2008). The benchmark model is $IntRet_{t+i} = \beta_0 + \varepsilon_{t+i}$, where $IntRet_{t+i}$ is the cumulative next i-month return of MSIC ACWI exclude USA index. The alternative model is $IntRet_{t+i} = \beta_0 + \beta_1 FSR_t^{US} + \varepsilon_{t+i}$, where FSR^{US} is residual FS^{US}. We construct two residual FS^{US} to reflect the spirit of the foreign sentiment predictability reported in Table 4. Panel A corresponds to the specification in Panel A of Table 4. FSR_1^{US} is the regression residual obtained by regressing FS^{US} on $FNSR^{US}$, international return and its lags. Panel B corresponds to the specification in Panel B of Table 4. FSR_2^{US} is obtained by regressing FS^{US} on $FNSR^{US}$, LS^{INT}, LS^{US}, *USRet*, *IntRet* and lagged *IntRet* (up to five periods). To avoid look-ahead bias, all information used to estimate residual FS^{US} is limited to the data available through the training period. The out-of-sample evaluation period is from January 2005 to December 2017.

Panel A: FSR_1^{US}

	Out-of-Sample R^2 (2005-2017)				
	$IntRet_{t+1}$	$IntRet_{t+1:t+3}$	$IntRet_{t+1:t+6}$	$IntRet_{t+1:t+9}$	$IntRet_{t+1:t+12}$
Rolling	4.00%	1.42%	1.74%	0.19%	-0.60%
Recursive	2.65%	2.26%	2.40%	1.25%	0.70%

Panel B: FSR_2^{US}

	Out-of-Sample R^2 (2005-2017)				
	$IntRet_{t+1}$	$IntRet_{t+1:t+3}$	$IntRet_{t+1:t+6}$	$IntRet_{t+1:t+9}$	$IntRet_{t+1:t+12}$
Rolling	4.58%	2.13%	1.87%	0.29%	-0.72%
Recursive	2.90%	2.76%	2.88%	1.61%	1.01%

Table 6. International return predictive regression with U.S. foreign tilt interaction

This table reports results of the panel regression of returns of 21 non-U.S. developed countries on FS^{US}, U.S. investor's *ForeignTilt* in each individual foreign country and their interaction.

$$IntRet_{c,t+1:t+i} = \beta_0 + \beta_1 FS_t^{US} + \beta_2 ForeignTilt_{c,t} + \beta_3 FS_t^{US} * ForeignTilt_{c,t} + \beta_4 Control + \delta_{c,t} + \varepsilon_{c,t}.$$

$IntRet_{c,t+1:t+i}$ is the monthly future return of international market *c* (i.e., the destination market of U.S. foreign investment) over the next *i* months. FS^{US} is U.S. investors' foreign sentiment toward the non-U.S. markets, defined as the normalized net exchanges into and out of U.S.-based international funds. Using asset under management (AUM) of all U.S. ETFs tracking an individual non-U.S. country *c* as a proxy for U.S. investors' investment in that country, we calculate *ForeignTilt* as the percentage of the U.S. ETF's AUM investing in country *c* relative to its market value. U.S. *ForeignTilt* are then sorted into quintiles, and the quintile ranks are further scaled between 0 (low tilt) and 1 (high tilt). The regressions include country fixed effects. The sample period is from March 1996 to December 2017 based on ETF data availability. Control variables include $FNSR^{US}$, *IntRet* and lagged *IntRet* (up to five periods). Flow variables are standardized. Standard errors are clustered by time. *P*-values are in parentheses. *, **, and *** represent significance at the 10%, 5% and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)
	$IntRet_{c,t+1}$	$IntRet_{c,t+1:t+3}$	$IntRet_{c,t+1:t+6}$	$IntRet_{c,t+1:t+9}$	$IntRet_{c,t+1:t+12}$
FS_t^{US}	-0.010**	-0.0083	-0.0050	-0.0059	0.0017
	(0.03)	(0.21)	(0.68)	(0.69)	(0.92)
$FS_t^{US} * ForeignTilt_{c,t}$	-0.0030	**-0.011*** **	**-0.020*** **	**-0.022*** **	**-0.021** **
	(0.21)	**(0.01)**	**(0.00)**	**(0.01)**	**(0.02)**
$ForeignTilt_{c,t}$	0.00063	0.00038	0.0052	0.0092	0.0079
	(0.86)	(0.95)	(0.61)	(0.51)	(0.64)
Control variables: $FNSR_t^{US}$, $IntRet_t$, $IntRet_{t-1}$, $IntRet_{t-2}$, $IntRet_{t-3}$, $IntRet_{t-4}$, $IntRet_{t-5}$					
Obs.	4045	4007	3950	3893	3836
R2	0.03	0.03	0.03	0.03	0.02

Table 7. FS^{US} and U.S. foreign tilt: evidence from the JGTRRA shock

The table reports results using the U.S. Jobs and Growth Tax Relief Reconciliation Act (JGTRRA) in 2003 as an exogenous shock to U.S. investment influence in each destination market. Over the window of three years before and after the passage of JGTRRA, Panel A examines U.S. *ForeignTilt* and Panel B investigates the return predictability of FS^{US} across different dividend-paying countries.

In Panel A, we use the following difference-in-differences (DD) specification:

$$ForeignTilt_{c,t} = \beta_0 + \beta_1 Div_{c,t} + \beta_2 After_t + \beta_3 Div_{c,t} * After_t + \beta_4 Control + \delta_{c,t} + \varepsilon_{c,t}\,.$$

Using asset under management (AUM) of all U.S. ETFs tracking an individual non-U.S. country *c* as a proxy for U.S. investors' investment in that country, we calculate *ForeignTilt* as the percentage of the U.S. ETF's AUM investing in country *c* relative to its market value. U.S. *ForeignTilt* are then sorted into quintiles, and the quintile ranks are further scaled between 0 (low tilt) and 1 (high tilt). $After$ is a dummy variable which equals to one after December 2003, and zero otherwise. Div is the country-level dividend yield, calculated as the last year-end country-level total dividend divided by country market value.

In Panel B, we consider the following regression:

$$IntRet_{c,t+1:t+12} = \beta_0 + \beta_1 FS_t^{US} + \beta_2 Div_{c,t} + \beta_3 After_t + \beta_4 FS_t^{US} * Div_{c,t} + \beta_5 Div_{c,t} * After_t + \beta_6 FS_t^{US} * After_t + \beta_7 FS_t^{US} * Div_{c,t} * After_t + \beta_8 Control + \delta_{c,t} + \varepsilon_{c,t}\,.$$

Div and $After$ are defined above. $IntRet_{c,t+1:t+12}$ is the monthly future return of international market c (i.e., the destination market of U.S. foreign investment) over the next 12 months. FS^{US} is U.S. investors' foreign sentiment toward the non-U.S. markets, defined as the normalized net exchanges into and out of U.S.-based international funds. All specifications include country fixed effects. Control variables include *IntRet* and lagged *IntRet* (up to five periods). Standard errors are clustered by time. *P*-values are in parentheses. *, **, and *** represent significance at the 10%, 5% and 1% level, respectively.

Panel A: U.S. *ForeignTilt* and JGTRRA

	(1)
	$ForeignTilt_{c,t}$
$Div_{c,t} * After_t$	**0.10*** **
	(0.01)
Control variables: Div_t, $After_t$, $IntRet_{t-1}$, $IntRet_{t-2}$, $IntRet_{t-3}$, $IntRet_{t-4}$, $IntRet_{t-5}$	
Obs.	1152
R2	0.86

Panel B: FS^{US} and JGTRRA

	(1)
	$IntRet_{c,t+1:t+12}$
$FS_t^{US} * Div_{c,t} * After_t$	**-0.04*** **
	(0.00)
*Control variables: FS_t^{US}, Div_t, $After_t$, FS_t^{US}*Div_t, FS_t^{US}*$After_t$, Div_t *$After_t$, $FNSR_t^{US}$, $IntRet_t$, $IntRet_{t-1}$, $IntRet_{t-2}$, $IntRet_{t-3}$, $IntRet_{t-4}$, $IntRet_{t-5}$*	
Obs.	1152
R2	0.21

Table 8. International return predictive regression with U.S. cross-border equity flows

This table reports results of the panel regression of future returns of 21 non-U.S. developed countries on predicted and unpredicted cross-border equity flows based on U.S. investors' foreign sentiment (FS^{US}), from January 1992 to December 2017.

$$IntRet_{c,t+1:t+i} = \beta_0 + \beta_1 PredEF_{c,t} + \beta_2 ResEF_{c,t} + \beta_3 Control_{c,t} + \delta_{c,t} + \varepsilon_{c,t}.$$

$IntRet_{c,t+1:t+i}$ is the monthly future return of international market c (i.e., the destination market of U.S. foreign investment) over the next i months. We project U.S. cross-border equity flow in each country on FS^{US} and decompose it into a predicted component based on FS^{US} (*PredEF*) and a residual component that is not explained by FS^{US} (*ResEF*). Control variables include $FNSR^{US}$, *IntRet* and lagged *IntRet* (up to five periods). All flow variables are standardized. All specifications include country fixed effects. Standard errors are clustered by time. *P*-values are in parentheses. *, **, and *** represent significance at the 10%, 5% and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)
	$IntRet_{c,t+1}$	$IntRet_{c,t+1:t+3}$	$IntRet_{c,t+1:t+6}$	$IntRet_{c,t+1:t+9}$	$IntRet_{c,t+1:t+12}$
$PredEF_{c,t}$	**-0.0087****	**-0.016****	**-0.028*****	**-0.030****	**-0.036*****
	(0.01)	**(0.02)**	**(0.00)**	**(0.01)**	**(0.01)**
$ResEF_{c,t}$	0.0011	0.0030**	0.0073***	0.0090***	0.010***
	(0.16)	(0.02)	(0.00)	(0.00)	(0.00)
Control variables: $FNSR_t^{US}$, $IntRet_t$, $IntRet_{t-1}$, $IntRet_{t-2}$, $IntRet_{t-3}$, $IntRet_{t-4}$, $IntRet_{t-5}$					
Obs.	6315	6273	6210	6147	6084
R2	0.02	0.02	0.02	0.02	0.02

Table 9. International return predictive regression with news tone interaction

The table reports results of panel regression of future returns of 21 non-U.S. developed countries on FS^{US}, LS^{INT}, local news tone in destination markets (i.e., non-U.S. markets) and their interactions (Panel A), together with FS^{US} and LS^{INT} decomposition into positive and negative components (Panel B).

Panel A report results from the following regression:

$$IntRet_{c,t+1:t+i} = \beta_0 + \beta_1 FS_t^{US} + \beta_2 LS_{c,t}^{INT} + \beta_3 RSNewsTone_{c,t}^{INT} + \beta_4 FS_t^{US} * RSNewsTone_{c,t}^{INT} + \beta_5 LS_{c,t}^{INT} * RSNewsTone_{c,t}^{INT} + \beta_6 Control + \delta_{c,t} + \varepsilon_{c,t}\,.$$

$IntRet_{c,t+1:t+i}$ is the monthly future return of international market c (i.e., the destination market of U.S. foreign investment) over the next i months. FS^{US} is U.S. investors' foreign sentiment toward the non-U.S. markets, defined as the normalized net exchanges into and out of U.S.-based international funds. LS^{INT} is non-U.S. investors' local sentiment toward their local equity markets, defined as the percentage net flow difference between non-U.S. based mutual fund investing in equity market and bond market. $RSNewsTone^{INT}$ is a reverse scale news tone measure. To construct the measure, we first sort based on past 3-month moving average local news tone in destination-markets into quintiles in descending order and then re-scale the quintile ranks into values between 0 (most positive) and 1 (most negative).

Panel B extends the analysis conducted in Panel A, where FS^{US} and LS^{INT} are decomposed into positive and negative flow components.

$$IntRet_{c,t+1:t+i} = \beta_0 + \beta_1 FS_t^{US+} + \beta_2 FS_t^{US-} + \beta_3 LS_{c,t}^{INT+} + \beta_4 LS_{c,t}^{INT-} + \beta_5 RSNewsTone_{c,t}^{INT} + \beta_6 FS_t^{US+} * RSNewsTone_{c,t}^{INT} + \beta_7 FS_t^{US-} * RSNewsTone_{c,t}^{INT} + \beta_8 LS_{c,t}^{INT+} * RSNewsTone_{c,t}^{INT} + \beta_9 LS_{c,t}^{INT-} * RSNewsTone_{c,t}^{INT} + \beta_{10} Control + \delta_{c,t} + \varepsilon_{c,t}\,.$$

$FS_t^{US+}(FS_t^{US-})$ equals to FS_t^{US} if FS_t^{US} is positive (negative), and equals to 0 otherwise. $LS_{c,t}^{INT+}(LS_{c,t}^{INT-})$ equals to $LS_{c,t}^{INT}$ if $LS_{c,t}^{INT}$ is positive (negative), and equals to 0 otherwise.

The sample period is from January 1996 to December 2015 based on news data availability. All specifications include country fixed effects. Control variables include $FNSR^{US}$, *IntRet* and lagged *IntRet* (up to five periods). FS^{US} and LS^{INT} are standardized, while all interaction terms are not. Standard errors are clustered by time. *P*-values are in parentheses. *, **, and *** represent significance at the 10%, 5% and 1% level, respectively.

Panel A: Interaction of FS^{US} and news tone

	(1) $IntRet_{c,t+1}$	(2) $IntRet_{c,t+1:t+3}$	(3) $IntRet_{c,t+1:t+6}$	(4) $IntRet_{c,t+1:t+9}$	(5) $IntRet_{c,t+1:t+12}$
FS_t^{US}	-0.010**	-0.0020	0.0038	0.016	0.039*
	(0.05)	(0.84)	(0.82)	(0.45)	(0.08)
$LS_{c,t}^{INT}$	-0.0032	-0.0026	-0.012**	-0.016**	-0.020**
	(0.11)	(0.44)	(0.04)	(0.03)	(0.02)
$FS_t^{US} * RSNewsTone_{c,t}^{INT}$	-0.0098	**-0.040****	**-0.067****	**-0.11*****	**-0.15*****
	(0.28)	**(0.01)**	**(0.01)**	**(0.00)**	**(0.00)**
$LS_{c,t}^{INT} * RSNewsTone_{c,t}^{INT}$	0.0032	-0.0054	0.0023	0.0073	0.0096
	(0.45)	(0.43)	(0.83)	(0.57)	(0.51)
Control variables: $RSNewsTone_t^{INT}$, $FNSR_t^{US}$, $IntRet_t$, $IntRet_{t-1}$, $IntRet_{t-2}$, $IntRet_{t-3}$, $IntRet_{t-4}$, $IntRet_{t-5}$					
Obs.	4372	4372	4372	4372	4372
R2	0.05	0.05	0.05	0.05	0.06

Panel B: News tone interacted with both FS^{US+} and FS^{US-}

	(1) $IntRet_{c,t+1}$	(2) $IntRet_{c,t+1:t+3}$	(3) $IntRet_{c,t+1:t+6}$	(4) $IntRet_{c,t+1:t+9}$	(5) $IntRet_{c,t+1:t+12}$
$FS_t^{US+} * RSNewsTone_{c,t}^{INT}$	-0.014	0.0051	0.013	0.033	-0.022
	(0.40)	(0.82)	(0.69)	(0.45)	(0.66)
$FS_t^{US-} * RSNewsTone_{c,t}^{INT}$	-0.011	**-0.061****	-0.075	**-0.13****	**-0.13****
	(0.47)	**(0.05)**	(0.12)	**(0.02)**	**(0.02)**
$LS_{c,t}^{INT+} * RSNewsTone_{c,t}^{INT}$	0.0031	0.0012	0.015	0.028	0.044*
	(0.71)	(0.92)	(0.38)	(0.17)	(0.06)
$LS_{c,t}^{INT-} * RSNewsTone_{c,t}^{INT}$	0.0034	-0.013	-0.010	-0.016	-0.023
	(0.63)	(0.30)	(0.56)	(0.45)	(0.37)
Control variables: FS_t^{US+}, FS_t^{US-}, LS_t^{INT+}, LS_t^{INT-}, $RSNewsTone_t^{INT}$, $FNSR_t^{US}$, $IntRet_t$, $IntRet_{t-1}$, $IntRet_{t-2}$, $IntRet_{t-3}$, $IntRet_{t-4}$, $IntRet_{t-5}$					
Obs.	4372	4372	4372	4372	4372
R2	0.05	0.06	0.06	0.07	0.08

Table 10. International return predictive regression: FS^{US}, news tone and the Olympics

This table reports the results of panel regression of contemporaneous and future returns of 21 non-U.S. developed countries on FS^{US}, local news tone in destination markets (i.e., non-U.S. markets), Olympic dummy and their interactions.

$$IntRet_{c,t+i:t+j} = \beta_0 + \beta_1 FS_t^{US} + \beta_2 RSNewsTone_{c,t}^{INT} + \beta_3 Olympics_t + \beta_4 FS_t^{US} * RSNewsTone_{c,t}^{INT} + \beta_5 RSNewsTone_{c,t}^{INT} * Olympics_t + \beta_6 FS_t^{US} * Olympics_t + \beta_7 FS_t^{US} * RSNewsTone_{c,t}^{INT} * Olympics_c + \beta_8 Control + \delta_{c,t} + \varepsilon_{c,t}\,.$$

$IntRet_{c,t+1:t+i}$ is the monthly future return of international market *c* (i.e., the destination market of U.S. foreign investment) over the next *i* months. FS^{US} is U.S. investors' foreign sentiment toward the non-U.S. markets, defined as the normalized net exchanges into and out of U.S.-based international funds. We first sort past 3-month moving average destination-market local news tone into quintiles in descending order and then re-scale the quintile ranks into values between 0 (most positive) and 1 (most negative), denoted as $RSNewsTone^{INT}$. *Olympics* is a dummy which equals to 1 if the U.S. is holding the Olympic Games in that month, and 0 otherwise. In our sample period, there are two Olympic Games held in the U.S. Atlanta Summer Olympic Games was held from July to August 1996 and Salt Lake City Winter Olympic Games was held in February 2002. To validate Olympics dummy, we also generate simulated *p*-values using simulations. Specifically, we randomly pick pseudo Olympic months within our sample period and run the same regression 10000 times. In each simulation, we keep the t-statistic of coefficient for the triple interaction term. Simulated p-values reported in brackets are calculated as the portion of the simulated t-statistics which exceed OLS t-statistics. The sample period is from January 1996 to December 2015 based on news tone data availability. Control variables are $FNSR^{US}$, *IntRet* and lagged *IntRet* (up to five periods). The regressions include country fixed effects. FS^{US} is standardized. Standard errors are clustered by time. *P*-values are in parentheses. *, **, and *** represent significance at the 10%, 5% and 1% level, respectively.

	(1) $IntRet_{c,t}$	(2) $IntRet_{c,t+1}$	(3) $IntRet_{c,t+1:t+3}$	(4) $IntRet_{c,t+1:t+6}$	(5) $IntRet_{c,t+1:t+9}$	(6) $IntRet_{c,t+1:t+12}$
FS_t^{US}	-0.00092	-0.0094*	-0.0021	0.0022	0.0093	0.031
	(0.88)	(0.07)	(0.83)	(0.89)	(0.66)	(0.18)
$Olympics_t$	0.014*	-0.027***	-0.0016	-0.0021	0.064**	0.033
	(0.08)	(0.00)	(0.92)	(0.93)	(0.02)	(0.38)
$FS_t^{US} * RSNewsTone_{c,t}^{INT}$	0.014**	-0.0058	-0.021**	-0.035**	-0.055***	-0.076***
	(0.02)	(0.26)	(0.02)	(0.02)	(0.01)	(0.00)
$FS_t^{US} * RSNewsTone_{c,t}^{INT} * Olympics_t$	**-0.0069*****	**0.0023****	**0.0048***	**0.026*****	**0.024*****	**0.056*****
	(0.00)	**(0.04)**	**(0.08)**	**(0.00)**	**(0.00)**	**(0.00)**
Simulated p-values	***[0.08]***	*[0.22]*	*[0.29]*	***[0.07]***	***[0.08]***	***[0.04]***
*Control variables: $RSNewsTone_t^{INT}$, FS_t^{US} *Olympics$_t$, $RSNewsTone_t^{INT}$ *Olympics$_t$, $FNSR_t^{US}$, IntRet$_t$, IntRet$_{t-1}$, IntRet$_{t-2}$, IntRet$_{t-3}$, IntRet$_{t-4}$, IntRet$_{t-5}$*						
Obs.	4998	4998	4998	4998	4998	4998
R2	0.12	0.04	0.04	0.04	0.05	0.05

Table 11. International return predictive regression: FS^{US}, news tone and foreignness statistics

This table reports results of panel regression of future returns of 21 non-U.S. developed countries on FS^{US}, local news tone in destination markets (i.e., non-U.S. markets), foreignness statistics and their interactions.

$$IntRet_{c,t+1:t+i} = \beta_0 + \beta_1 FS_t^{US} + \beta_2 Foreign_c + \beta_3 RSNewsTone_{c,t}^{INT} + \beta_4 FS_t^{US} * RSNewsTone_{c,t}^{INT} + \beta_5 Foreign_c * RSNewsTone_{c,t}^{INT} + \beta_6 Foreign_c * FS_t^{US} + \beta_7 FS_t^{US} * RSNewsTone_{c,t}^{INT} * Foreign_c + \beta_8 Control + \varepsilon_{c,t}.$$

$IntRet_{c,t+1:t+i}$ is the monthly future return of international market c (i.e., the destination market of U.S. foreign investment) over the next i months. FS^{US} is U.S. investors' foreign sentiment toward the non-U.S. markets, defined as the normalized net exchanges into and out of U.S.-based international funds. We consider six proxies for foreignness. They are cultural distance, physical distance, ancestral distance, a religion dummy, a language dummy, and a composite index combining the above five measures. We sort each country's Hofstede cultural distance from U.S. into tercile and then scale the tercile rank into 0 and 1 with 1 indicating the most culturally remote country from the U.S. We sort physical distance of each country to U.S. into tercile and scale the tercile rank into 0 and 1 with 1 indicating the most physically remote country from U.S. We sort the fraction of U.S. citizens with ancestors from each country into tercile and then scale the tercile rank into 0 and 1 with 1 indicating the most ancestrally remote country from the U.S. religion dummy is a dummy that is 0 if protestant is the most popular religion in the country, and 1 otherwise. Language dummy is 0 if country's official language or predominant second language is English, and 1 otherwise. The composite index (last column) is the simple average of all five cultural statistics. We sort past 3-month moving average destination-market local news tone into quintiles in descending order and then re-scale the quintile ranks into values between 0 (most positive) and 1 (most negative), denoted as $RSNewsTone^{INT}$. The sample period is from January 1996 to December 2015 based on news tone data availability. Control variables are $FNSR^{US}$, *IntRet* and lagged *IntRet* (up to five periods). FS^{US} is standardized. Standard errors are clustered by time. *P*-values are in parentheses. *, **, and *** represent significance at the 10%, 5% and 1% level, respectively.

	(1) Cultural Distance	(2) Physical Distance	(3) Ancestral Distance	(4) Religion Dummy	(5) Language dummy	(6) Composite index
	$IntRet_{c,t+1:t+12}$	$IntRet_{c,t+1:t+12}$	$IntRet_{c,t+1:t+12}$	$IntRet_{c,t+1:t+12}$	$IntRet_{c,t+1:t+12}$	$IntRet_{c,t+1:t+12}$
FS_t^{US}	0.015	0.026	0.031	0.010	0.038*	0.027
	(0.49)	(0.29)	(0.20)	(0.68)	(0.07)	(0.21)
$Foreign_c$	-0.067***	-0.025	0.033**	-0.028**	-0.0085	-0.035*
	(0.00)	(0.11)	(0.02)	(0.03)	(0.63)	(0.10)
$FS_t^{US} * RSNewsTone_{c,t}^{INT}$	-0.095***	-0.096**	-0.031	-0.087**	-0.13***	-0.078**
	(0.01)	(0.02)	(0.27)	(0.03)	(0.00)	(0.03)
$FS_t^{US} * RSNewsTone_{c,t}^{INT} * Foreign_c$	**-0.063****	**-0.051****	**-0.049****	**-0.062*****	0.014	**-0.081****
	(0.02)	**(0.03)**	**(0.05)**	**(0.00)**	(0.60)	**(0.02)**
Control variables: $RSNewsTone_t^{INT}$, $FS_t^{US} * Foreign_c$, $RSNewsTone_t^{INT} * Foreign_c$, $FNSR_t^{US}$, $IntRet_t$, $IntRet_{t-1}$, $IntRet_{t-2}$, $IntRet_{t-3}$, $IntRet_{t-4}$, $IntRet_{t-5}$						
Obs.	4998	4998	4998	4998	4998	4998
R2	0.04	0.04	0.04	0.04	0.04	0.04

Table 12. U.S. return predictive regression

The table reports results of time-series regression of U.S. future return on LS^{US} and FS^{INT} (Panel A), and their interaction with local U.S. news tone (Panel B).

Panel A reports results from the following regression:

$$USRet_{t+1:t+i} = \beta_0 + \beta_1 LS_t^{US} + \beta_2 FS_t^{INT} + \beta_3 Control_t + \varepsilon_t.$$

$USRet_{t+1:t+i}$ is future U.S. return over the next i months. U.S. return is valued-weighted return of the S&P500 total return index. LS^{US} is U.S. investors' local sentiment toward the U.S. equity market, defined as the normalized net exchanges between U.S.-based equity funds and bond funds. FS^{INT} is non-U.S. investors' foreign sentiment toward the U.S. market, defined as defined as the value-weighted average of percentage net flow difference between non-U.S. based U.S. equity funds and local equity funds. Panel A's sample period is from January 1992 to December 2017.

In Panel B, we report results of time-series regression of U.S. future return on LS^{US}, FS^{INT} and their interactions with U.S. news tone:

$$\begin{aligned} USRet_{t+1:t+i} = {} & \beta_0 + \beta_1 LS_t^{US+} + \beta_2 LS_t^{US-} + \beta_3 FS_t^{INT+} + \beta_4 FS_t^{INT-} + \beta_5 RSNewsTone_t^{US} \\ & + \beta_6 LS_t^{US+} \times RSNewsTone_t^{US} + \beta_7 LS_t^{US-} \times RSNewsTone_t^{US} \\ & + \beta_8 FS_t^{INT+} \times RSNewsTone_t^{US} + \beta_9 FS_t^{INT-} \times RSNewsTone_t^{US} + \beta_{10} Control + \varepsilon_{c,t}. \end{aligned}$$

LS_t^{US+} (LS_t^{US-}) equals to LS_t^{US} if LS_t^{US} is positive (negative); otherwise, it is 0. FS_t^{INT+} (FS_t^{INT-}) equals to FS_t^{INT} if FS_t^{INT} is positive (negative); otherwise, it is 0. We first sort past 3-month moving average U.S. news tone into quintiles in descending order and then re-scale the quintile ranks into values between 0 (most positive) and 1 (most negative), denoted as $RSNewsTone_t^{US}$. Panel B's sample period is from January 1996 to December 2015, based on news tone data availability.

Control variables in both panels include $LNSR^{US}$, *USRet* and lagged *USRet* (up to five periods). All flow variables are standardized. Standard errors are adjusted for serial correlation using Newey-West (1987). *P*-values are in parentheses. *, **, and *** represent significance at the 10%, 5% and 1% level, respectively.

Panel A: Non-U.S. investors' foreign sentiment predictability on U.S. market return

	(1)	(2)	(3)	(4)	(5)
	$USRet_{t+1}$	$USRet_{t+1:t+3}$	$USRet_{t+1:t+6}$	$USRet_{t+1:t+9}$	$USRet_{t+1:t+12}$
LS_t^{US}	-0.0048	**-0.012***	**-0.020***	**-0.028****	**-0.035***
	(0.25)	**(0.10)**	**(0.06)**	**(0.04)**	**(0.07)**
FS_t^{INT}	0.00021	-0.0043	-0.021	**-0.034****	**-0.041****
	(0.95)	(0.63)	(0.11)	(0.03)	(0.03)
FS_t^{US}	-0.0066	-0.0076	-0.0096	-0.0068	-0.011
	(0.12)	(0.34)	(0.38)	(0.61)	(0.51)
Control variables: $FNSR_t^{US}$, $LNSR_t^{US}$, $USRet_t$, $USRet_{t-1}$, $USRet_{t-2}$, $USRet_{t-3}$, $USRet_{t-4}$, $USRet_{t-5}$					
Obs.	311	309	306	303	300
R2	0.05	0.08	0.11	0.09	0.09

Panel B: U.S. News tone interacted with both FS^{INT+} and FS^{INT-}

	(1)	(2)	(3)	(4)	(5)
	$USRet_{t+1}$	$USRet_{t+1:t+3}$	$USRet_{t+1:t+6}$	$USRet_{t+1:t+9}$	$USRet_{t+1:t+12}$
$LS_t^{US+} * \text{RSNewsTone}_t^{US}$	0.00079	-0.0074	-0.064	-0.086	-0.11
	(0.96)	(0.80)	(0.23)	(0.23)	(0.21)
$LS_t^{US-} * \text{RSNewsTone}_t^{US}$	0.022	-0.0039	0.071*	0.051	0.10
	(0.26)	(0.91)	(0.09)	(0.36)	(0.16)
$FS_t^{INT+} * \text{RSNewsTone}_t^{US}$	0.012	0.045	0.027	-0.0019	-0.079
	(0.60)	(0.32)	(0.75)	(0.99)	(0.49)
$FS_t^{INT-} * \text{RSNewsTone}_t^{US}$	**-0.031****	**-0.068*****	**-0.11****	-0.088	-0.11
	(0.02)	**(0.01)**	**(0.03)**	(0.26)	(0.21)
Control variables: LS_t^{US+}, LS_t^{US-}, FS_t^{INT+}, FS_t^{INT-}, $RSNewsTone_t^{US}$, $USRet_t$, $USRet_{t-1}$, $USRet_{t-2}$, $USRet_{t-3}$, $USRet_{t-4}$, $USRet_{t-5}$					
Obs.	238	238	238	238	238
R2	0.05	0.08	0.12	0.14	0.16

Appendix A1. Non-U.S. developed countries used in the analysis

This table reports results the list of non-U.S. developed countries used in our analysis. We consider the all international developed countries as defined by MSCI in our analyses. To be consistent with Calomiris and Mamaysky (2019) developed countries classification, we remove Hong Kong and end up with 21 non-U.S. developed countries.

Number	Country	Code
1	Australia	AU
2	Austria	AT
3	Belgium	BE
4	Canada	CA
5	Denmark	DK
6	Finland	FI
7	France	FR
8	Germany	DE
9	Greece	GR
10	Ireland	IE
11	Italy	IT
12	Japan	JP
13	Netherlands	NL
14	New Zealand	NZ
15	Norway	NO
16	Portugal	PT
17	Singapore	SG
18	Spain	ES
19	Sweden	SE
20	Switzerland	CH
21	United Kingdom	UK

Appendix A2. International return predictive regression: FS^{US}, *EconRelevance* and *AbnNews*

In this table, we explore the ability of FS^{US} to predict international return based on the economic relevance of local news (Panel A) and the amount of news being disseminated (Panel B).

Panel A reports results of panel regression of future returns of 21 non-U.S. developed countries on FS^{US}, local news tone and *EconRelevance* in destination markets (i.e., non-U.S. markets), and their interactions.

$$\begin{aligned} IntRet_{c,t+1:t+12} = {} & \beta_0 + \beta_1 FS_t^{US} + \beta_2 RSNewsTone_{c,t}^{INT} + \beta_3 EconRelevance_{c,t} + \beta_4 FS_t^{US} \\ & * RSNewsTone_{c,t}^{INT} + \beta_5 RSNewsTone_{c,t}^{INT} * EconRelevance_{c,t} + \beta_6 FS_t^{US} \\ & * EconRelevance_{c,t} + \beta_7 FS_t^{US} * RSNewsTone_{c,t}^{INT} * EconRelevance_{c,t} + \beta_8 Control \\ & + \delta_{c,t} + \varepsilon_{c,t} . \end{aligned}$$

$IntRet_{c,t+1:t+i}$ is the monthly future return of international market *c* (i.e., the destination market of U.S. foreign investment) over the next *i* months. FS^{US} is U.S. investors' foreign sentiment toward the non-U.S. markets, defined as the normalized net exchanges into and out of U.S.-based international funds. We first sort past 3-month moving average destination-market local news tone into quintiles in descending order and then re-scale the quintile ranks into values between 0 (most positive) and 1 (most negative), denoted as $RSNewsTone_{c,t}^{INT}$. $EconRelevance_c$ is a dummy variable which equals to 1 if past 3-month local news economic words ratio per article in destination-market *c* is above its sample mean, and 0 otherwise. Specifically, economic words ratio of country *c* is defined as the ratio of total number of economic words to number of articles.

Panel B reports results of panel regression of future returns of 21 non-U.S. developed countries on FS^{US}, local news tone and *AbnNews* in destination markets (i.e., non-U.S. markets), and their interactions.

$$\begin{aligned} IntRet_{c,t+1:t+12} = {} & \beta_0 + \beta_1 FS_t^{US} + \beta_2 RSNewsTone_{c,t}^{INT} + \beta_3 AbnNews_{c,t} + \beta_4 FS_t^{US} * RSNewsTone_{c,t}^{INT} \\ & + \beta_5 RSNewsTone_{c,t}^{INT} * AbnNews_{c,t} + \beta_6 FS_t^{US} * AbnNews_{c,t} + \beta_7 FS_t^{US} \\ & * RSNewsTone_{c,t}^{INT} * AbnNews_{c,t} + \beta_8 Control + \delta_{c,t} + \varepsilon_{c,t} . \end{aligned}$$

FS^{US} and $RSNewsTone_{c,t}^{INT}$ are defined above. $AbnNews_c$ is a dummy variable which equals to 1 if past 3-month local abnormal news article number in destination-market *c* is above its sample mean, and 0 otherwise. Specifically, abnormal news article number in destination-market *c* is calculated as raw news article number that is detrended by removing the linear trend and seasonality and then further scaled by U.S. news article number that is detrended in the same way.

The sample period is from January 1996 to December 2015 based on news data availability. Control variables are $FNSR^{US}$, *IntRet* and lagged *IntRet* (up to five periods). The regressions include country fixed effects. FS^{US} is standardized. Standard errors are clustered by time. *P*-values are in parentheses. *, **, and *** represent significance at the 10%, 5% and 1% level, respectively.

Panel A: $EconRelevance = \frac{total\ number\ of\ economic\ words}{number\ of\ news\ articles}$	
	$IntRet_{c,t+1:t+12}$
FS_t^{US}	0.0026
	(0.91)
$EconRelevance_{c,t}$	-0.026
	(0.30)
$FS_t^{US} * RSNewsTone_{c,t}^{INT}$	-0.042**
	(0.04)
$FS_t^{US} * RSNewsTone_{c,t}^{INT} * EconRelevance_{c,t}$	**-0.061*** **
	(0.00)
Control variables: $RSNewsTone_{c,t}^{INT}$, FS_t^{US} *$EconRelevance_t$, $RSNewsTone_t^{INT}$ *$EconRelevance_t$, $FNSR_t^{US}$, $IntRet_t$, $IntRet_{t-1}$, $IntRet_{t-2}$, $IntRet_{t-3}$, $IntRet_{t-4}$, $IntRet_{t-5}$	
Obs.	4998
R2	0.06

Panel B: *AbnNews* = Abnormal News Article Number	
	$IntRet_{c,t+1:t+12}$
FS_t^{US}	-0.0026
	(0.94)
$AbnNews_{c,t}$	-0.040
	(0.16)
$FS_t^{US} * RSNewsTone_{c,t}^{INT}$	-0.020
	(0.47)
$FS_t^{US} * RSNewsTone_{c,t}^{INT} * AbnNews_{c,t}$	**-0.069*** **
	(0.00)
Control variables: $RSNewsTone_t^{INT}$, $FS_t^{US} * AbnNews_t$, $RSNewsTone_t^{INT} * AbnNews_t$, $FNSR_t^{US}$, $IntRet_t$, $IntRet_{t-1}$, $IntRet_{t-2}$, $IntRet_{t-3}$, $IntRet_{t-4}$, $IntRet_{t-5}$	
Obs.	4998
R2	0.06

Appendix A3. A Horse race between international local news tone and local returns

This table reports results of the panel regression of future returns of 21 non-U.S. developed countries on FS^{US}, where we conduct a horse race between destination-market news tone ($RSNewsTone^{INT}$) and returns ($RSRet^{INT}$).

$$IntRet_{c,t+1:t+i} = \beta_0 + \beta_1 FS_t^{US} + \beta_2 RSNewsTone_{c,t}^{INT} + \beta_3 RSRet_{c,t}^{INT} + \beta_4 FS_t^{US} * RSNewsTone_{c,t}^{INT} + \beta_5 FS_t^{US} * RSRet_{c,t}^{INT} + \beta_6 Control + \delta_{c,t} + \varepsilon_{c,t}\,.$$

$IntRet_{c,t+1:t+i}$ is the monthly future return of international market *c* (i.e., the destination market of U.S. foreign investment) over the next *i* months. FS^{US} is U.S. investors' foreign sentiment toward the non-U.S. markets, defined as the normalized net exchanges into and out of U.S.-based international funds. We first sort past 3-month moving average destination-market local news tone into quintiles in descending order and then re-scale the quintile ranks into values between 0 (most positive) and 1 (most negative), denoted as $RSNewsTone^{INT}$. We follow the same procedure to transform the past 3-month moving average destination-market return into the reverse scaled return measure, denoted as $RSRet^{INT}$. The sample period is from January 1996 to December 2015 based on news tone data availability. The regressions include country fixed effects. Control variables include $FNSR^{US}$, *IntRet* and lagged *IntRet* (up to five periods). FS^{US} is standardized. Standard errors are clustered by time. *P*-values are in parentheses. *, **, and *** represent significance at the 10%, 5% and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)
	$IntRet_{c,t+1}$	$IntRet_{c,t+1:t+3}$	$IntRet_{c,t+1:t+6}$	$IntRet_{c,t+1:t+9}$	$IntRet_{c,t+1:t+12}$
FS_t^{US}	-0.011*	0.00017	-0.0031	0.0080	0.022
	(0.10)	(0.99)	(0.87)	(0.73)	(0.39)
$FS_t^{US} * RSNewsTone_{c,t}^{INT}$	-0.012	**-0.036*** **	**-0.059** **	**-0.081*** **	**-0.12*** **
	(0.13)	**(0.01)**	**(0.01)**	**(0.01)**	**(0.00)**
$FS_t^{US} * RSRet_{c,t}^{INT}$	0.0054	-0.0046	0.0091	-0.0083	0.0041
	(0.51)	(0.72)	(0.63)	(0.74)	(0.88)
Control variables: $RSNewsTone_t^{INT}$, $RSRet_t^{INT}$, $FNSR_t^{US}$, $IntRet_t$, $IntRet_{t-1}$, $IntRet_{t-2}$, $IntRet_{t-3}$, $IntRet_{t-4}$, $IntRet_{t-5}$					
Obs.	4998	4998	4998	4998	4998
R2	0.04	0.05	0.04	0.05	0.06

Appendix A4. A Horse race between international news tone and U.S. news tone

This table reports results of the panel regression of future returns of 21 non-U.S. developed countries on FS^{US}, where we conduct a horse race between destination-market news tone (i.e., international news tone $RSNewsTone^{INT}$) and origin-market news tone (i.e., U.S. news tone $RSNewsTone^{US}$).

$$IntRet_{c,t+1:t+i} = \beta_0 + \beta_1 FS_t^{US} + \beta_2 RSNewsTone_{c,t}^{INT} + \beta_3 RSNewsTone^{US} + \beta_4 FS_t^{US} * RSNewsTone_{c,t}^{INT} + \beta_5 FS_t^{US} * RSNewsTone^{US} + \beta_6 Control + \delta_{c,t} + \varepsilon_{c,t}.$$

$IntRet_{c,t+1:t+i}$ is the monthly future return of international market *c* (i.e., the destination market of U.S. foreign investment) over the next *i* months. FS^{US} is U.S. investors' foreign sentiment toward the non-U.S. markets, defined as the normalized net exchanges into and out of U.S.-based international funds. We first sort past 3-month moving average destination-market local news tone into quintiles in descending order and then re-scale the quintile ranks into values between 0 (most positive) and 1 (most negative), denoted as $RSNewsTone^{INT}$. We follow the same procedure to transform the past 3-month moving average U.S. news tone into the reverse scaled tone measure, denoted as $RSNewsTone^{US}$. The sample period is from January 1996 to December 2015 based on news data availability. The regressions include country fixed effects. Control variables include $FNSR^{US}$, *IntRet* and lagged *IntRet* (up to five periods). FS^{US} is standardized. Standard errors are clustered by time. *P*-values are in parentheses. *, **, and *** represent significance at the 10%, 5% and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)
	$IntRet_{c,t+1}$	$IntRet_{c,t+1:t+3}$	$IntRet_{c,t+1:t+6}$	$IntRet_{c,t+1:t+9}$	$IntRet_{c,t+1:t+12}$
FS_t^{US}	-0.0072	0.0047	0.0096	0.025	0.070**
	(0.26)	(0.64)	(0.56)	(0.28)	(0.02)
$FS_t^{US} * RSNewsTone_{c,t}^{INT}$	**-0.013***	**-0.035****	**-0.066*****	**-0.097*****	**-0.092****
	(0.10)	**(0.02)**	**(0.01)**	**(0.00)**	**(0.01)**
$FS_t^{US} * RSNewsTone_{c,t}^{US}$	0.013	0.00021	0.0039	-0.0086	-0.091
	(0.36)	(0.99)	(0.91)	(0.84)	(0.10)
Control variables: $RSNewsTone_t^{INT}$, $RSNewsTone_t^{US}$, $FNSR_t^{US}$, $IntRet_t$, $IntRet_{t-1}$, $IntRet_{t-2}$, $IntRet_{t-3}$, $IntRet_{t-4}$, $IntRet_{t-5}$					
Obs.	4998	4998	4998	4998	4998
R2	0.03	0.04	0.06	0.08	0.09

Table IA1. Lead-lag analysis of flow, international return and news tone.

The following figures depict the cumulative impulse response functions of *FLOW* (FS^{US}or LS^{INT}), and the local public news tone in destination markets (i.e., non-U.S. markets), controlling for the returns in destination markets. Our sample covers 21 non-U.S. developed countries. FS^{US} is U.S. investors' foreign sentiment toward the non-U.S. markets, defined as the normalized net exchanges into and out of U.S.-based international funds. LS^{INT} is non-U.S. investors' local sentiment toward their local equity markets, defined as the percentage net flow difference between non-U.S. based mutual fund investing in local equity market and bond market. $NewsTone^{INT}$ is the local public news tone in destination markets. $IntRet_c$ is monthly return of international market *c*. The sample period is from January 1996 to December 2015 based on news data availability. Standard errors are clustered by time. *P*-values are in parentheses. *, **, and *** represent significance at the 10%, 5% and 1% level, respectively.

	FS_t^{US}	$NewsTone_{c,t}^{INT}$	$LS_{c,t}^{INT}$	$NewsTone_{c,t}^{INT}$
$NewsTone_{c,t-1}^{INT}$	**15.48*****	0.50***	-0.68	0.49***
	(0.00)	(0.00)	(0.28)	(0.00)
$NewsTone_{c,t-2}^{INT}$	**19.06*****	0.20***	0.82	0.21***
	(0.00)	(0.00)	(0.19)	(0.00)
$NewsTone_{c,t-3}^{INT}$	**8.83****	0.14***	-0.23	0.14***
	(0.01)	(0.00)	(0.70)	(0.00)
$NewsTone_{c,t-4}^{INT}$	0.23	0.0046	-0.15	0.014
	(0.94)	(0.82)	(0.75)	(0.46)
$IntRet_{c,t-1}$	0.45***	0.0017***	-0.0022	0.0017***
	(0.00)	(0.00)	(0.76)	(0.00)
$IntRet_{c,t-2}$	0.12***	0.00020	-0.0024	0.00025
	(0.01)	(0.40)	(0.73)	(0.28)
$IntRet_{c,t-3}$	-0.0085	0.0010***	-0.014	0.0011***
	(0.84)	(0.00)	(0.04)	(0.00)
$IntRet_{c,t-4}$	-0.11**	-0.00023	0.0041	-0.00017
	(0.01)	(0.35)	(0.54)	0.53
FS_{t-1}^{US}	0.18***	-0.00020**		
	(0.00)	(0.02)		
FS_{t-2}^{US}	0.156***	0.00029***		
	(0.00)	(0.00)		
FS_{t-3}^{US}	0.10***	-0.00012		
	(0.00)	(0.19)		
FS_{t-4}^{US}	-0.023	0.00010		
	(0.24)	(0.30)		
$LS_{c,t-1}^{INT}$			0.21***	-0.0015**
			(0.00)	(0.02)
$LS_{c,t-2}^{INT}$			0.14***	0.00034
			(0.00)	(0.56)
$LS_{c,t-3}^{INT}$			0.17***	-0.00036
			(0.00)	(0.54)
$LS_{c,t-4}^{INT}$			0.017	-0.00038
			(0.46)	(0.53)
Obs.	4935	4935	4226	4226

Table IA2. American Depository Receipt (ADRs) Premia (Discount) and U.S. foreign sentiment

This table reports results of the panel regression of monthly ADR premia (discount) on FS^{US}. Our sample include 526 ADRs over the period of January 1992 to December 2017. Dependent variable is ADR premia (in percentage), *PrcDiff*, which is defined as the ADR price minus home share ADR-ratio adjusted price, and then scaled by home share ADR-ratio adjusted price. FS^{US} is U.S. investors' foreign sentiment toward the non-U.S. markets, defined as the normalized net exchanges into and out of U.S.-based international funds. MV^{ADR} (MV^{Home}) is market value of U.S. ADR (home counterpart). $Amihud^{ADR}$ ($Amihud^{Home}$) is the Amihud illiquidity measure of U.S. ADRs (home counterparts). Turnover ratio is defined as monthly trading volume over number of share outstanding. TO^{ADR} (TO^{Home}) is turnover ratio of U.S. ADRs (home counterparts). Realized volatility is defined as the standard deviation of daily returns within a month. Vol^{ADR} (Vol^{Home}) is the realized volatility of U.S. ADRs (home counterparts). *FX* is the month-end foreign exchange rate at which one U.S. dollar will be exchanged for the currency of a ADR's home country. The regressions include ADR fixed effects. Standard errors are double clustered by ADR and time. *P*-values are in parentheses. *, **, and *** represent significance at the 10%, 5% and 1% level, respectively.

	(1)	(2)	(3)
	$PrcDiff_{c,t}$	$PrcDiff_{c,t}$	$PrcDiff_{c,t}$
FS_t^{US}	**0.11*** **	**0.11*** **	**0.11*** **
	(0.00)	**(0.00)**	**(0.00)**
$MV_{c,t}^{ADR}$		0.0069	0.0069
		(0.21)	(0.21)
$Amihud_{c,t}^{ADR}$		-0.011**	-0.011**
		(0.05)	(0.05)
$TO_{c,t}^{ADR}$		-0.00090	-0.00090
		(0.86)	(0.86)
$Vol_{c,t}^{ADR}$		-3.93	-3.93
		(0.12)	(0.12)
$MV_{c,t}^{Home}$		-0.0025**	-0.0025**
		(0.04)	(0.04)
$Amihud_{c,t}^{Home}$		-0.0013	-0.0013
		(0.59)	(0.59)
$TO_{c,t}^{Home}$		0.019	0.019
		(0.56)	(0.56)
$Vol_{c,t}^{Home}$		3.08	3.08
		(0.31)	(0.31)
$FX_{c,t}$			0.0000041
			(0.87)
Obs.	53417	52315	52315
R2	0.23	0.24	0.24

Table IA3. FS^{US} and future return volatility

The table reports results of the time series regression of future volatility in destination markets (Panel A: non-U.S. markets) and in origin market (Panel B: the U.S. market) on FS^{US}. The sample ranges from January 1992 to December 2017.

Panel A report results from the following regression:

$$IntRetVol_{t+1:t+i} = \beta_0 + \beta_1 FS_t^{US} + \beta_2 Control + \varepsilon_t .$$

$IntRetVol_{t+1:t+i}$ is defined as the standard deviation of MSCI ACWI exclude USA index daily return over the next i months. FS^{US} is U.S. investors' foreign sentiment toward the non-U.S. markets, defined as the normalized net exchanges into and out of U.S.-based international funds. Control variables include $FNSR^{US}$, *IntRetVol* and lagged *IntRetVol* (up to five periods).

In Panel B, we report results of the time series regression of future U.S. return volatility on FS^{US}:

$$USRetVol_{t+1:t+i} = \beta_0 + \beta_1 FS_t^{US} + \beta_2 Control + \varepsilon_t .$$

$USRetVol_{t+1:t+i}$ is defined as the standard deviation of S&P500 index daily return over the next i months. Control variables include $FNSR^{US}$, *IntRetVol* and lagged *IntRetVol* (up to five periods). All specifications include country fixed effects. All flow variables are standardized. Standard errors are adjusted for serial correlation using Newey-West (1987). *P*-values are in parentheses. *, **, and *** represent significance at the 10%, 5% and 1% level, respectively.

Panel A: FS^{US} and international return volatility

	(1)	(2)	(3)	(4)	(5)
	$IntRetVol_{t+1}$	$IntRetVol_{t+1:t+3}$	$IntRetVol_{t+1:t+6}$	$IntRetVol_{t+1:t+9}$	$IntRetVol_{t+1:t+12}$
FS_t^{US}	0.00023	0.00034	0.00039	0.00039	0.00035
	(0.21)	(0.16)	(0.15)	(0.17)	(0.28)
$FNSR_t^{US}$	-0.00053	-0.00061	-0.00059	-0.00060	-0.00058
	(0.13)	(0.21)	(0.23)	(0.19)	(0.19)
$IntRetVol_t$	0.66***	0.48***	0.34***	0.29***	0.26***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
$IntRetVol_{t-1}$	-0.054	-0.028	0.012	0.024	0.016
	(0.56)	(0.72)	(0.83)	(0.64)	(0.73)
$IntRetVol_{t-2}$	0.100	0.070	0.060**	0.066**	0.056**
	(0.11)	(0.10)	(0.04)	(0.02)	(0.04)
$IntRetVol_{t-3}$	-0.059	-0.0077	0.025	0.023	0.025
	(0.26)	(0.87)	(0.45)	(0.40)	(0.37)
$IntRetVol_{t-4}$	0.13**	0.085**	0.074**	0.051*	0.058*
	(0.05)	(0.01)	(0.02)	(0.08)	(0.07)
$IntRetVol_{t-5}$	-0.032	0.021	0.037	0.036	0.023
	(0.61)	(0.76)	(0.56)	(0.51)	(0.66)
Obs.	312	312	312	312	312
R2	0.53	0.40	0.32	0.29	0.26

Panel B: FS^{US} and U.S. return volatility

	(1)	(2)	(3)	(4)	(5)
	$USRetVol_{t+1}$	$USRetVol_{t+1:t+3}$	$USRetVol_{t+1:t+6}$	$USRetVol_{t+1:t+9}$	$USRetVol_{t+1:t+12}$
FS_t^{US}	0.00021	0.00035	0.00040	0.00030	0.00032
	(0.37)	(0.23)	(0.23)	(0.38)	(0.41)
$FNSR_t^{US}$	-0.00054	-0.00068	-0.00074	-0.00064	-0.00062
	(0.17)	(0.19)	(0.17)	(0.23)	(0.26)
$USRetVol_t$	0.69***	0.53***	0.40***	0.34***	0.30***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
$USRetVol_{t-1}$	0.015	0.025	0.040	0.033	0.040
	(0.89)	(0.73)	(0.48)	(0.54)	(0.43)
$USRetVol_{t-2}$	0.072	0.044	0.034	0.047	0.029
	(0.27)	(0.23)	(0.30)	(0.19)	(0.40)
$USRetVol_{t-3}$	-0.083	-0.0011	0.015	0.0095	0.019
	(0.27)	(0.98)	(0.67)	(0.76)	(0.55)
$USRetVol_{t-4}$	0.13*	0.066*	0.051	0.054	0.060
	(0.05)	(0.09)	(0.17)	(0.20)	(0.14)
$USRetVol_{t-5}$	-0.028	-0.00062	0.024	0.028	0.027
	(0.66)	(0.99)	(0.74)	(0.66)	(0.66)
Obs.	312	312	312	312	312
R2	0.59	0.50	0.40	0.34	0.31

Table IA4. FS^{US} return predictability controlling for VIX and liquidity

This table reports results of panel regression of future returns of 21 non-U.S. developed countries on FS^{US} controlling for volatility and liquidity. The sample is from January 1992 to December 2017.

Panel A reports results of the panel regression of international future returns on FS^{US} and LS^{INT}:

$$IntRet_{c,t+1:t+i} = \beta_0 + \beta_1 FS_t^{US} + \beta_2 LS_{c,t}^{INT} + \beta_3 \Delta VIX_t + \beta_4 Liq_t + \beta_5 Control_{c,t} + \delta_{c,t} + \varepsilon_{c,t} .$$

$IntRet_{c,t+1:t+i}$ is the monthly future return of international market c (i.e., the destination market of U.S. foreign investment) over the next i months. FS^{US} is U.S. investors' foreign sentiment toward the non-U.S. markets, defined as the normalized net exchanges into and out of U.S.-based international funds. LS^{INT} is non-U.S. investors' local sentiment toward their local equity markets, defined as the percentage net flow difference between non-U.S. based mutual fund investing in equity market and bond market. ΔVIX is the contemporaneous change in VIX, the volatility index of Chicago Board Options Exchange (CBOE). Liq is the Pastor and Stambaugh (2003) traded liquidity factor. The regressions include country fixed effects. Control variables include $FNSR^{US}$, U.S. return, international counter-level return and its lag (up to five periods). FS^{US} and LS^{INT} are standardized. Standard errors are clustered by time.

In Panel B, we sort all developed countries in our sample into four portfolios based on country market capitalization and further generate country portfolio returns. Then we estimate the time-series regression by regressing the future portfolio return on FS^{US} for each country portfolio. Each row of the table shows the return predictability β_1 of FS^{US} for each country portfolio. For example, first row displays the foreign sentiment effect for the smallest country portfolio. The dependent variable is equally-weighted future country return. Control variables include $FNSR^{US}$, portfolio return and its lag (up to five periods). Standard errors are adjusted for serial correlation using Newey-West (1987). *P*-values are in parentheses *, **, and *** represent significance at the 10%, 5% and 1% level, respectively.

Panel A: Predictive return regression with liquidity factor and *VIX* controls

	(1)	(2)	(3)	(4)	(5)
	$IntRet_{c,t+1}$	$IntRet_{c,t+1:t+3}$	$IntRet_{c,t+1:t+6}$	$IntRet_{c,t+1:t+9}$	$IntRet_{c,t+1:t+12}$
FS_t^{US}	**-0.012*** **	**-0.016*** **	**-0.025** **	**-0.024** **	**-0.025***
	(0.00)	**(0.01)**	**(0.01)**	**(0.04)**	**(0.06)**
$LS_{c,t}^{INT}$	-0.0021*	-0.0048**	-0.0085***	-0.011**	-0.013**
	(0.09)	(0.03)	(0.01)	(0.03)	(0.02)
ΔVIX_t	-0.0026	-0.00075	-0.0016	0.0000043	-0.00041
	(0.11)	(0.74)	(0.64)	(1.00)	(0.92)
Liq_t	-0.051	0.053	-0.29	-0.60	-0.76
	(0.63)	(0.80)	(0.41)	(0.19)	(0.12)
Control variables: $FNSR_t^{US}$, $USRet_t$, $IntRet_t$, $IntRet_{t-1}$, $IntRet_{t-2}$, $IntRet_{t-3}$, $IntRet_{t-4}$, $IntRet_{t-5}$					
Obs.	5519	5475	5409	5343	5277
R2	0.05	0.03	0.03	0.04	0.04

Panel B: Country portfolio return predictive regression

	(1)	(2)	(3)	(4)	(5)
Quartile	Ret_{t+1}	$Ret_{t+1:t+3}$	$Ret_{t+1:t+6}$	$Ret_{t+1:t+9}$	$Ret_{t+1:t+12}$
Small	**-0.0088** **	**-0.019** **	**-0.035** **	-0.036	-0.047
	(0.02)	**(0.05)**	**(0.02)**	(0.13)	(0.16)
2	**-0.011** **	**-0.014***	-0.019	-0.022	-0.027
	(0.01)	**(0.08)**	(0.12)	(0.16)	(0.21)
3	**-0.012*** **	**-0.019** **	-0.026**	-0.023	-0.027
	(0.00)	**(0.02)**	**(0.05)**	(0.16)	(0.20)
Big	**-0.0080*** **	**-0.013***	**-0.025** **	**-0.025***	**-0.031***
	(0.01)	**(0.06)**	**(0.02)**	**(0.05)**	**(0.05)**

Table IA5. FS^{US}, Global sentiment and *PopScore*

This table reports results of the panel regression of international future returns on FS^{US}, *Popscore* and BWY Global Sentiment from January 1992 to December 2017.

$$IntRet_{c,t+1:t+i} = \beta_0 + \beta_1 FS_t^{US} + \beta_2 Popscore_{c,t} + \beta_3 GlbSent_t + \beta_3 Control_{c,t} + \delta_{c,t} + \varepsilon_{c,t} .$$

$IntRet_{c,t+1:t+i}$ is the monthly future return of international market *c* (i.e., the destination market of U.S. foreign investment) over the next *i* months. FS^{US} is U.S. investors' foreign sentiment toward the non-U.S. markets, defined as the normalized net exchanges into and out of U.S.-based international funds. We follow Baker, Wurgler and Yuan (2012) and construct the *monthly* global sentiment measure as first principle component of country-level total sentiment index, which is calculated as the first principle component of four sentiment proxies including volatility premium, first-day return on IPOs, the number of IPOs and market turnover. Following Hwang(2011), we construct *Popscore* as the country popularity score among U.S. general public from Gallup Survey, which covers a sample of 9 developed countries: Australia, Canada, France, Germany, Greece, Italy, Japan, Spain, UK. The regressions include country fixed effects. Control variables include LS^{US}, $FNSR^{US}$, U.S. return, *IntRet* and lagged *IntRet* (up to five periods). FS^{US} is standardized. Standard errors are clustered by time. *P*-values are in parentheses. *, **, and *** represent significance at the 10%, 5% and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	$IntRet_{c,t}$	$IntRet_{c,t+1}$	$IntRet_{c,t+1:t+3}$	$IntRet_{c,t+1:t+6}$	$IntRet_{c,t+1:t+9}$	$IntRet_{c,t+1:t+12}$
FS_t^{US}	**0.013*** **	**-0.0097** **	**-0.017** **	**-0.030** **	**-0.031** **	**-0.033** **
	(0.01)	**(0.03)**	**(0.03)**	**(0.02)**	**(0.04)**	**(0.05)**
$GlbSent_t$	-0.00099	0.00030	-0.00066	-0.0049	-0.014	-0.029**
	(0.73)	(0.92)	(0.90)	(0.57)	(0.25)	(0.05)
$PopScore_{c,t}$	0.0027*	0.000010	-0.0053	-0.010	-0.015	-0.016
	(0.06)	(1.00)	(0.29)	(0.12)	(0.12)	(0.11)
Control variables: $FNSR_t^{US}$, $IntRet_t$, $IntRet_{t-1}$, $IntRet_{t-2}$, $IntRet_{t-3}$, $IntRet_{t-4}$, $IntRet_{t-5}$						
Obs.	2541	2540	2538	2535	2532	2529
R2	0.086	0.028	0.025	0.032	0.033	0.040