Online Appendix

Media Sentiment on Foreign Countries and International Asset Allocation

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Online Appendix I.
LLM-Tongyi Qwen, API Token, Validation Procedures, and Illustrative Examples

1. Tongyi Qwen

Tongyi Qianwen (Qwen), developed by Alibaba Cloud, is a leading large language model in China. The model has an open-source lineage and shows strong performance on standard benchmarks in coding, mathematics, and general reasoning. It performs well in multilingual settings beyond Chinese and has been widely adopted in open-source communities, where many high-ranking models build on the Qwen architecture.

Independent market snapshots also suggest broad uptake. For example, an industry report firm Frost & Sullivan's "China GenAI Market Insight: Enterprise LLM Usage Panorama Research, 2025" attributes 17.7% of China's LLM token consumption share to Qwen, ranking first in China, and data from the API aggregation platform OpenRouter indicate that Qwen's global usage share has at times exceeded 12.3%, ranking fourth globally.

Qwen is especially effective in long text processing. It supports the analysis of very long inputs, enabling the processing of extended news reports and research papers. Research teams have further fine-tuned Qwen for finance and economics tasks, such as understanding the content of financial announcements. These features make Qwen well suited to academic applications in finance and economics, particularly for token-based textual analysis.

2. API Token

We use Qwen's API to classify news articles by their relevance to a country's economic fundamentals. For each article, we send the following prompt:

Task: Assess Economic Relevance

Determine if the given news content is related to the economic fundamentals of the given country and return 0 or 1: "1" indicates that the given news content is related to the economic fundamentals of the given country; "0" indicates that the given news content is not related to the economic fundamentals of the given country. Return in a dictionary format with the key as "Eco".

3. Validation Procedures

To assess classification accuracy at scale, we conducted the following validation test: First, we randomly selected 100 articles labeled by the LLM as economic-related and 100 labeled as noneconomic-related, then mixed their order to form a 200-article test set. Second, we recruited three graduate student assistants from Peking University, two PhD students and one Master's student in economics or finance, to independently label each article using the same instruction: *Determine if the given news content is related to the economic fundamentals of the given country and return 0 or 1: "1" indicates that the given news content is related to the economic fundamentals of the given country; "0" indicates that the given news content is not related to the economic fundamentals of the given country.* The final human label for each article is the majority vote across the three raters.

The LLM and human majority labels agree for 87 percent of the articles labeled economic-related and for 89 percent of the articles labeled noneconomic-related. These results indicate that the LLM performs well at classifying articles by relevance to economic fundamentals. These rates fall within the 80–90% range of classification accuracy, which, according to Ding, Qin, Liu, Chia, Joty, Li and Bing (2023) and Khan, Swaminathan, Prakash, Jayanthi and Kumari (2025), represents the typical performance level of LLM-based classification methods.

Below we present three examples that Qwen labels as economic-related, followed by three examples it labels as noneconomic-related. Quotations are excerpted from the original sources.

Economic-related Examples

Example 1
The Washington Post, June 4, 2001, Saudi Arabia

"Eight energy companies, including Exxon Mobil Corp., signed agreements today with Saudi Arabia to develop the country's gas reserves.

The agreements, with a total value of $25 billion, mark the return of foreign firms to the exploration of the fifth-largest gas reserves two decades after being expelled from Saudi Arabia. The contracts may give the companies a lead over rivals if the Saudis open access to crude oil reserves.

"Companies have been fighting for years to get back into the kingdom's hydrocarbon sector," said Mohammed Abduljabbar, an oil analyst at Petroleum Finance Co. "This is a very low risk area in terms of exploration and development as it's blessed with an abundance of reserves."

Exxon Mobil, the largest oil company, with a market value of $307 billion, is to lead the biggest of the three projects, worth $17 billion. The exploration seeks deposits beneath the southern area of the country's Al-Ghawar field, the world's largest oil field. Royal Dutch/Shell Group is to lead the $4 billion development of Shaybah in the Empty Quarter desert.

The other companies are BP PLC, TotalFinaElf SA, Conoco Inc., Phillips Petroleum Co., Marathon Oil Co. and Occidental Petroleum Corp. Final negotiations are pending. The companies are seeking an investment return of at least 15 percent, Saudi officials said.

Saudi Arabia, which wants to convert its oil-fed utilities industry to cheaper natural gas, has had budget deficits for most of the past two decades and needed foreign capital to proceed with the conversion projects.”

Example 2

USA Today, June 18, 2015, Greece

“The hourglass is almost empty for Greece, and Thursday's meeting of Eurozone finance ministers could likely mark the last-ditch effort for Athens to get a bailout deal done with its creditors before the end-of-month deadline.

The impasse has gotten its share of headlines, most which have ratcheted up the angst in markets. Last week, the International Monetary Fund suspended negotiations with Greece due to a "lack of progress." Over the weekend talks between the two sides were unable to result in a deal. And this week, despite more "11th-hour" negotiations involving both sides of the aisle, a deal remains elusive, making Thursday's meeting of Euro finance ministers key.

"The Greek debt drama continues into the 11th hour this week, as Thursday's meeting of Eurozone finance ministers should be the final chance for a deal before expiration of the bailout extension at the end of the month," says Gina Martin Adams, equity strategist at Wells Fargo Securities.

Adds Bill Stone, chief investment strategist at PNC: "The intractable negotiations between Greece and its creditors continues with hopes that some solution can be found to be approved at the euro-area finance ministers meetings. While Greece owes the IMF about 1.6 billion euros at the end of June, it is unclear if Greece has the means to hold out until July when even larger amounts are due, and the markets are likely to remain on edge about the uncertainty.”

Example 3

The Wall Street Journal, November 15, 2019, China

“China’s government said it would deposit about $2.5 billion into local commercial banks, marking a partial break with past practice where the bulk of official funds was held by the central bank.

For the first time, China's commercial banks yesterday were offered the opportunity to compete for Finance Ministry funds in an auction. The government said 51 Chinese banks participated in the auction of 20 billion yuan, or about $2.56 billion, of 90-day deposits, but it didn't say how many won mandates. Under a set formula and based on the auction results, the deposits will pay 2.7% annual interest.

China has traditionally put government money on deposit at the country's central bank, reflecting how under communism, the central bank was essentially China's only financial institution.

The auction represents the latest step toward eliminating the commercial-banking aspects of the central bank.”

Noneconomic-related Examples

Example 1
USA Today, Nov. 8, 1995, Japan

“Almost a half-million foreigners - 57% of them Asian - attend U.S. colleges and universities, says the Institute of International Education in a report out today.

For the first time, Japan has the most students in the United States, 45,276, or 10% of the 452,635 foreign students in 1994-95. China traditionally sends the most students, but officials say numbers from Asia overall have declined for the first time in 20 years - down 1.1% to 261,789.

"I think it indicates quite clearly that the Japanese hold our higher education system in very high esteem," says IIE president Richard M. Krasno. "They get good training here, training that they might not be able to get at home."

The institute says its annual count of international students shows "a broad erosion" from countries that once topped the list of sending countries. This year's total is up only 0.6% from 449,749 in 1993-94. The increase is the smallest in 10 years and continues a five-year trend of slower growth.

Krasno says Japanese themselves have "become quite aggressive in recruiting foreign students to come to Japan." Although few, the 2,200 Americans who study in Japan are a significant increase over past years. Japan's students are mainly from China and Korea.

More than 76,000 Americans study abroad, a 7% increase since the 1991-92 survey. The rates of increase for U.S. students going to Africa, Asia and Latin America were 18%, 20% and 17%.”

Example 2
The Washington Post, Aug., 23, 2007, Malaysia

“Some of the world's top pop stars are facing growing pressure to keep skimpy outfits and steamy dance moves off the stage during their concerts in Muslim-majority Malaysia, event organizers said Wednesday, citing protests by conservative Islamic critics who believe such Western performers can corrupt young people.

Gwen Stefani made what she called "a major sacrifice" by wearing clothes that revealed little at a Kuala Lumpur performance Tuesday. Muslim students and political activists had called for her concert to be scrapped because of her sexy reputation.

Promoters have announced that Beyonce is scheduled to perform Nov. 1 in this Southeast Asian country -- but with caveats.

"We've informed Beyonce's management about this issue of clothes, but it takes some of the fun out of it," said Razlan Ahmad Razali, chairman of Pineapple Concerts, which is organizing the concert.

"Beyonce won't be able to do the kind of show here that she does elsewhere," Razlan told the Associated Press. "She's a fashion icon, and we know that she often wears miniskirts and clothes that expose her navel during her performances. It's a pity to restrict her, because her costumes are all tasteful and glamorous."

Kanye West faced a different problem when he came to Kuala Lumpur in April; government officials said he should not perform one of his biggest hits, "Jesus Walks," because of religious sensitivities about the title, Razlan said.

Malaysia's government guidelines for public performances require a female artist to cover up from the top of her chest to her knees, including her shoulders. Performers may not hug or kiss, and their clothes must not have obscene or drug-related images or messages.

A Pussycat Dolls concert last year caused its Malaysian organizers to be fined ($2,857) after the group was accused of flouting decency regulations.

Such concerns have made Malaysia less appealing to some stars. A concert promoter, speaking on condition of anonymity because of the sensitivity of the issue, said the hassle about clothes was one of the reasons that Christina Aguilera skipped Malaysia during a recent Asian tour that included neighboring Singapore, Thailand and the Philippines.

The Pan-Malaysian Islamic Party, the country's biggest political opposition group, which opposed Stefani's appearance, says it will probably protest further if Beyonce or others, such as Justin Timberlake, perform here.

"Even with Gwen Stefani, we're not satisfied just because she covered up at the concert," party official Kamarulzaman Mohamed said. "Outside, she still wears sexy clothes and influences teenagers who idolize her. It's bad to have immoral artists visiting Malaysia."

Example 3
The Wall Street Journal, Sep.19,2014, Brazil

"In the late 1960s, a cultural movement was flowering in Brazil. Amid a brutal military dictatorship, a group of artists and musicians who called themselves Tropicalistas were fusing rock, samba, bossa nova and a neo-Dadaist aesthetic to create exciting, boldly countercultural art.

At the center of it all was Caetano Veloso, a young songwriter who these days is sometimes called the Bob Dylan of Brazil for the quality and variety of his work as well as its revolutionary overtones.

Mr. Veloso and his collaborator, Gilberto Gil, epitomized the contradiction of the times. The right-wing government was threatened by the unpredictable, shape-shifting Tropicalia movement, while some left-leaning students labeled the two musicians American imperialists because they often sang in English and played rock'n'roll guitar.

Officials arrested Messrs. Veloso and Gil in 1968 and then banished them from the country for several years. The two men made landmark recordings while detained and from exile in London, and sent them home to be orchestrated, completed and released as albums.

Almost a half-century later, Mr. Veloso, famous for absurdist love songs and tone poems like "Baby," "O Leaozinho," "Lost in the Paradise" and "Alegria, Alegria," is a national hero in Brazil. But at 72 years old, he still isn't well-known in the U.S., where he first performed in 1983.

His 49th studio album, "Abracaco" (Portuguese for "a big hug"), caps a trilogy of albums made with Brazilian indie rock trio Banda Ce. "Abracaco" was released this year in the U.S. by Nonesuch.

A number of critics have hailed the album as the trilogy's strongest, a return to form for Mr. Veloso and a recasting of the Tropicalistas' stark psychedelia for the modern era.

Produced by Mr. Veloso's son, Moreno, and the guitarist Pedro Sa, the record is grounded by fuzzy guitars, traditional samba rhythms and Mr. Veloso's impressionistic take on politics. "O Imperio da Lei" is a call for justice in the Amazon. Some of its lyrics translate roughly, "The rule of law is bound to reach the heart of Para," an Amazonian region marred by violence against anti-deforestation activists. "Um Comunista" is an eight-minute homage to Carlos Marighella, a Marxist radical from Mr. Veloso's home state of Bahia who was killed in 1969.

A notable difference between "Abracaco" and Mr. Veloso's earlier work is language. The album is sung entirely in Portuguese, a departure for an artist who in the '60s took his cues from the Beatles and the Rolling Stones and courted fans by writing songs in English.

"I wrote in English because back in the '60s I was interested in commanding the huge presence of American and British pop here. I knew it was part of our lives. But I wanted to put it in perspective too, not just be influenced by it," Mr. Veloso said in English during a phone interview from his home in Rio de Janeiro. He is more comfortable in his native tongue, he says, and now writes almost entirely in Portuguese.

But the language shouldn't deter American listeners, Mr. Veloso says. He is performing his newer songs and classic repertoire on a brief U.S. tour that culminates in New York at the end of September. The tour features an appearance by experimental guitarist Arto Lindsay.

Mr. Veloso recalls visiting Africa in the 1970s, when he was struck by the influence of Brazilian soccer star Pele, who at the time was being criticized at home for not speaking out against the military dictatorship.

For many people Mr. Veloso met on the Africa trip, it was enough to see a black athlete venerated as a hero in a country ruled by whites.

"I see an analogy between that and music," Mr. Veloso said. "Sometimes the figure of a rock'n'roll band's frontman or the sound of a bass line can be more political than two or three words that they say."

Online Appendix Figure I. Dynamic Effects of the *Wall Street Journal* Acquisition by News Corp

Figure I.A plots the coefficient estimates on *AbnWSJNeg* × *Treated* interacted with year dummies from 2001 to 2013, with 2007 omitted as the benchmark year. The regression specification follows Column (1) of Table V. Figure I.B plots the coefficient estimates on *AbnWSJNeg* × *AbnWSJAtt* interacted with month dummies from 2001 to 2013 and then aggregated to the quarter level for presentation, with 2007 Q2 omitted as the benchmark quarter. The regression specification follows Column (5) of Table V. The solid line denotes the coefficient estimates, and the dashed lines denote the 95% confidence interval.

Figure I.A

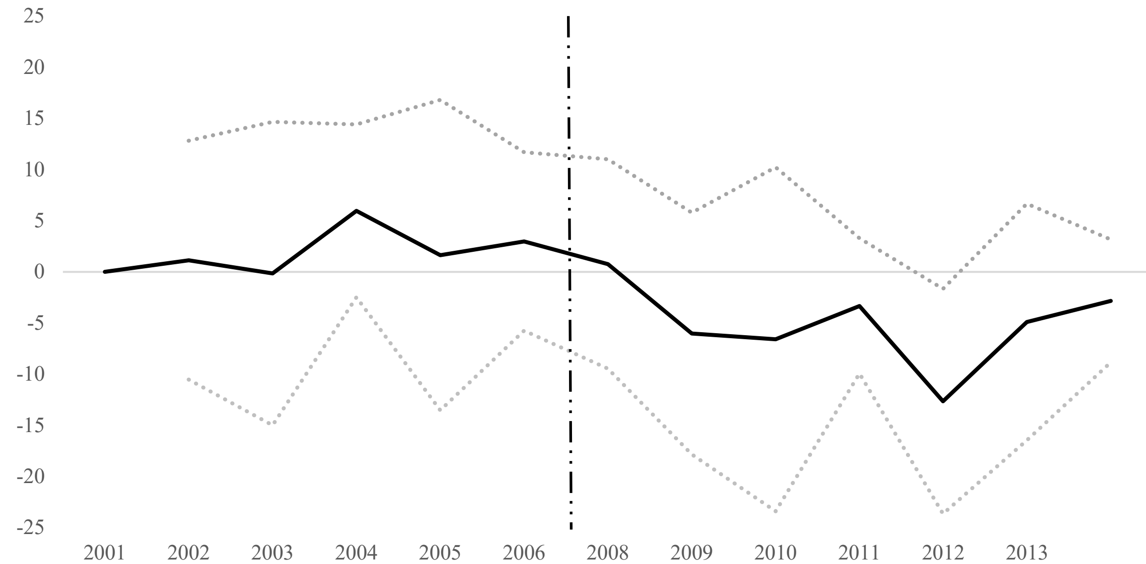
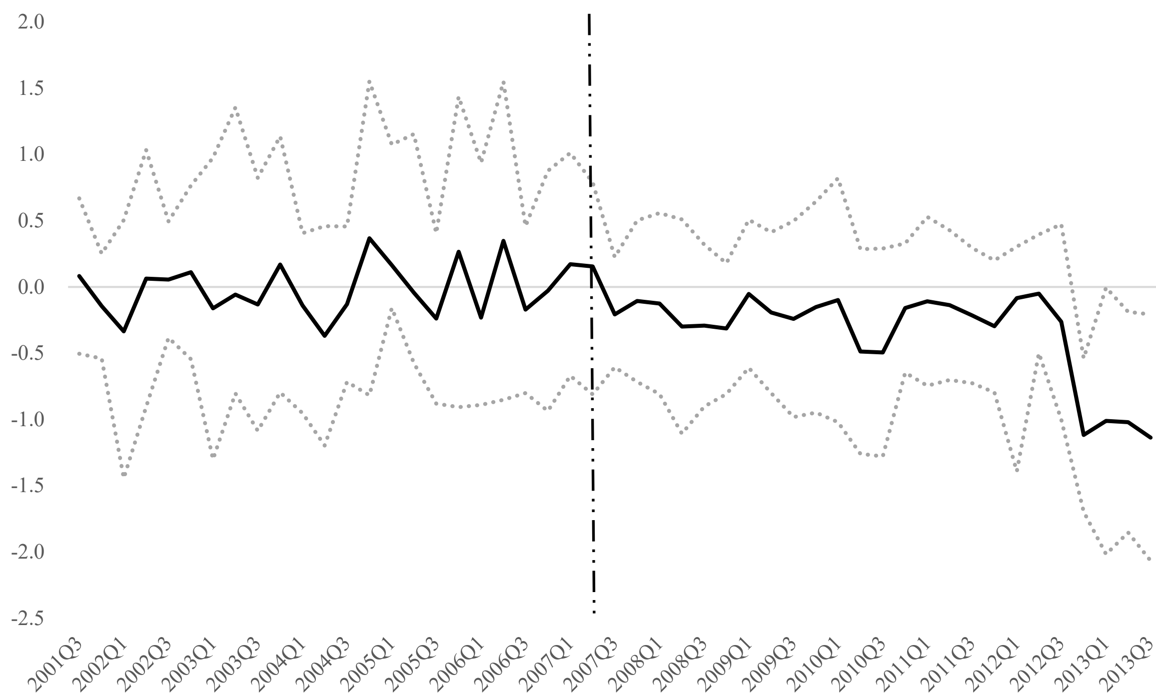


Figure I.B



Online Appendix Table I. Country-specific Media Sentiment and Country Fund Flows – Sports and Arts-related News

This table presents results of the panel regression analysis of country fund flows against sports- and arts-related country-specific negative media sentiment and various control variables for fund-year-month observations over the period of 1991 through 2020. News articles are classified as sports-related if they contain keywords listed in the *Encyclopædia Britannica*'s entry on sports, and as arts-related if they include terms found in the *Concise Oxford Dictionary of Art Terms*. Economic-related news is classified using dictionary-based textual analysis following Larcinese et al. (2011) and Knill et al. (2022). All variables are defined in the Appendix. Regressions in Column (2) and (4) control for fund-, country-, and year-month-fixed effects. All standard errors are clustered at the fund, country, and year-month levels. The t-statistics are reported in parentheses. ***, **, and * indicate significance at 1%, 5%, and 10%, respectively.

Dependent Variable	*Fund Flows*			
	(1)	(2)	(3)	(4)
Media Neg_Sports	0.001	-0.015		
	(0.00)	(-0.06)		
Media Attention_Sports	0.198**	0.272**		
	(2.36)	(2.26)		
Media Neg_Sports × Media Attention_Sports	-0.071**	-0.080**		
	(-2.23)	(-2.08)		
Media Neg_Arts			0.067	0.146
			(0.30)	(0.65)
Media Attention_Arts			0.229**	0.133
			(2.23)	(1.23)
Media Neg_Arts × Media Attention_Arts			-0.132***	-0.095*
			(-2.54)	(-1.81)
Media Neg_Econ		-0.615		-0.025
		(-0.73)		(-0.22)
Media Attention_Econ		0.377		0.031
		(1.43)		(1.24)
Media Neg_Econ × Media Attention_Econ		-0.003		-0.008
		(-0.02)		(-0.15)
Controls	No	Yes	No	Yes
Year-month Fixed Effects	No	Yes	No	Yes
Country Fixed Effects	No	Yes	No	Yes
Fund Fixed Effects	No	Yes	No	Yes
Obs.	8,489	7,469	16,068	14,136
Adjusted R^2	0.001	0.087	0.001	0.077

Online Appendix Table II. Country-specific Media Sentiment and Retail vs. Institutional Country Fund Flows
This table presents results of the panel regression analysis of retail and institutional country fund flows against country-specific negative media sentiment and various control variables for fund-year-month observations over the period of 1991 through 2020. *Retail Flows* and *Institutional Flows* are fund flows into institutional and retail share classes, respectively. *Media Neg* is defined as *Negative words / Total words* in news articles on a foreign country each month during the sample period and standardized as in Tetlock (2011). *Media Attention* is the number of news articles on a foreign country each month during the sample period. All variables are defined in Appendix. All regressions control for fund-, country-, and year-month-fixed effects. All standard errors are clustered at the fund, country, and year-month levels. The coefficients of the constant are omitted for brevity. The t-statistics are reported in parentheses. ***, **, and * indicate significance at 1%, 5%, and 10%, respectively.

Dependent Variables	*Retail Flows*	*Institutional Flows*
	(1)	(2)
Media Neg	-0.252	-0.097
	(-1.20)	(-0.50)
Media Attention	0.003	0.013
	(0.65)	(1.24)
Media Neg × *Media Attention*	-0.020**	-0.007
	(-2.04)	(-0.87)
Controls	Yes	Yes
Year-month Fixed Effects	Yes	Yes
Fund Fixed Effects	Yes	Yes
Country Fixed Effects	Yes	Yes
Obs.	34,538	34,538
Adjusted R^2	0.009	0.038

Online Appendix Table III. Retail Investors' Trades on Country-specific Funds vs. Domestic Funds

This table presents results of the panel regression analysis of retail investors' daily redemption of country-specific funds and daily purchase of domestic funds against negative media sentiment on foreign countries during the period of 1991 through 1996. *Country-specific Fund Redemption* is defined as an indicator that takes the value of one if a retail investor account on a given day exhibits a negative trade quantity of a country-specific fund. *Domestic Fund Purchase* is defined as an indicator that takes the value of one if a retail investor account on a given day exhibits a positive trade quantity of a domestic fund. *Country-specific Media Neg (Daily)* is defined as the daily media negativity on a foreign country on a given day. *Media Neg (Daily)* is defined as the average of *Country-specific Media Neg (Daily)*. The regression in Column (1) controls for account- and date-fixed effects. The regression in Column (2) control for account-fixed effects. All standard errors are clustered at the account levels. The coefficients of the constant are omitted for brevity. The t-statistics are reported in parentheses. ***, **, and * indicate significance at 1%, 5%, and 10%, respectively.

Dependent Variables	*Country-specific Fund Redemption*	*Domestic Fund Purchase*
	(1)	(2)
Country-specific Media Neg (Daily)	0.058**	
	(2.35)	
Media Neg (Daily)		0.007***
		(3.54)
Date Fixed Effects	Yes	No
Account Fixed Effects	Yes	Yes
Obs.	4,914	366,921
Adjusted R^2	0.402	0.150

Online Appendix Table IV. Country-specific Media Sentiment and Region Fund Flows

This table presents results of the panel regression analysis of region fund flows against average country-specific negative media sentiment and various control variables for fund-year-month observations over the period of 1991 through 2020. *Media Attention_Region* is the sum of *Media Attention* across all countries included in a region fund in a given month. *Media Neg_Region* is the average of *Media Neg* across those same countries. All variables are defined in the Appendix. All regressions control for fund-, and year-month-fixed effects. All standard errors are clustered at the fund, country, and year-month levels. The t-statistics are reported in parentheses. ***, **, and * indicate significance at 1%, 5%, and 10%, respectively.

Dependent Variable	*Fund Flows*	
	(1)	(2)
Media Neg_Region	-0.019	0.001
	(-0.90)	(0.06)
Media Attention_Region	0.962**	1.008**
	(2.38)	(2.34)
Media Neg_Region × Media Attention_Region	-0.083***	-0.066**
	(-3.20)	(-2.15)
Controls	No	Yes
Year-month Fixed Effects	Yes	Yes
Fund Fixed Effects	Yes	Yes
Region Fixed Effects	Yes	Yes
Obs.	119,518	116,539
Adjusted R^2	0.087	0.120

Online Appendix Table V. Country-specific Media Sentiment and Country Fund Flows – Robustness Tests

This table presents estimates of robustness tests on the baseline results using alternative measures, samples and additional control variables. Column (1) uses the natural logarithm of one plus the number of news articles on a foreign country each month as an alternative measure of *Media Attention.* Column (2) excludes ETFs from the sample. Column (3) and (4) include *Domestic News Sentiment* and *Country Popularity* as additional control, respectively, where *Domestic News Sentiment* is the Domestic News Sentiment Index in Buckman, Shapiro, Sudhof, and Wilson (2020) and *Country Popularity* is based on the Gallup Poll survey score. All variables are defined in the Appendix. All regressions control for fund-, country-, and year-month-fixed effects. All standard errors are clustered at the fund, country, and year-month levels. The t-statistics are reported in parentheses. ***, **, and * indicate significance at 1%, 5%, and 10%, respectively.

Dependent Variable	*Fund Flows*			
	(1)	(2)	(3)	(4)
	Ln(1+Media Attention)	*Non-ETF*	*Domestic News Sentiment*	*Country Popularity*
Media Neg	0.464	0.834	0.011	-0.457
	(1.40)	(1.52)	(0.07)	(-1.08)
Media Attention	0.728**	0.012**	0.011	0.017
	(2.17)	(2.28)	(0.81)	(1.05)
Media Neg × Media Attention	-0.335**	-0.024***	-0.013***	-0.015***
	(-1.95)	(-4.03)	(-3.92)	(-2.89)
Domestic News Sentiment			1.884**	
			(2.27)	
Country Popularity				1.080
				(0.63)
Controls	Yes	Yes	Yes	Yes
Year-month Fixed Effects	Yes	Yes	Yes	Yes
Fund Fixed Effects	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes
Obs.	33,980	14,750	33,980	22,536
Adjusted R^2	0.097	0.164	0.084	0.088

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