

Stay at Home: Flight-to-Safety and Home Bias in U.S. ETFs During COVID-19 Pandemic

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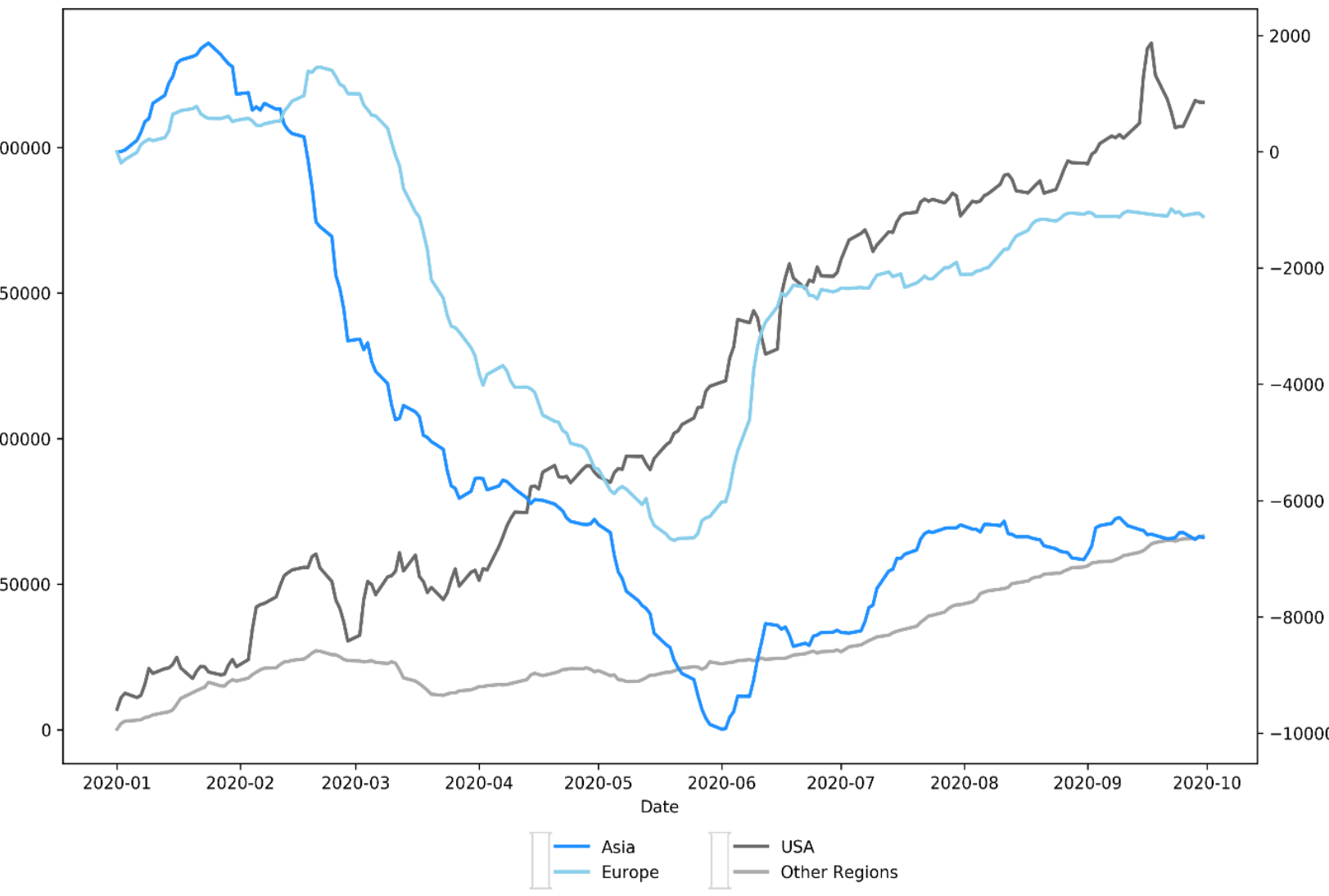
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Background

Since the beginning of 2020, the COVID-19 pandemic has turned into the most challenging and urgent task for almost all governments and communities across the world. The severity and high level of contagiousness of this disease have disrupted the supply chain and workforce of the world and resulted in an unprecedented impact on financial markets (Sharif, Aloui, & Yarovaya, 2020). While the adverse effect of the COVID-19 crisis has not been homogeneous across the countries, it has influenced the variance of the US and Europe’s stock markets more than the 2008 financial crisis. Moreover, recent pandemic plummeted foreign investment by almost 50% across the globe for the first half of 2020, the largest decline on record, according to the Wall Street Journal.

While the benefits of international portfolio diversification have been established in the literature, the way investors can gain exposure to the other countries’ capital market has not progressed at the same rate. A relatively new and very popular investment vehicle that can provide international exposure is the Exchange-Traded Fund (ETF). ETFs popularity among investors has grown remarkably in the United States since 2008 financial crisis to the extent that as of January 2020, ETFs hold more than \$4.4 trillion assets under management. Features like intraday tradability, tax efficiency, low fees, and transparency have contributed to the ETFs’ growth.

Cumulative new money flows (\$million) into ETFs, by geographic exposure during 2020 Pandemic



Objectives

In this study, we employ a novel approach to investigate investors' reactions to the pandemic by examining new money flows into U.S. ETFs with exposure to the U.S., Europe, and Asia. In other words, we employ follow the money approach to examine whether U.S. investors adjust the distribution of assets in their portfolio in response to COVID-19 outbreak in a given geographic location. To this end, we set to find out the joint distribution and linkage between assets with different geographic exposure. A good understanding of the linkage between assets with different geographic exposure is a key element in portfolio management. This joint distribution, however, may not remain constant over time. As a result, investors would require information about the conditional joint distribution of assets to maintain dynamic portfolio rebalancing strategies

Aggregated ETF flows with exposure to Asia, Europe, U.S., and rest of the world. The sample period is from January 2020 to October 2020 (196 days).

	Asia	Europe	USA	Other
mean	-34	-6	1100	339
std	165	157	4000	713
min	-670	-514	-10982	-2745
25%	-102	-67	-955	86
50%	-16	2	1071	443
75%	52	52	3342	743
max	363	835	18719	2006

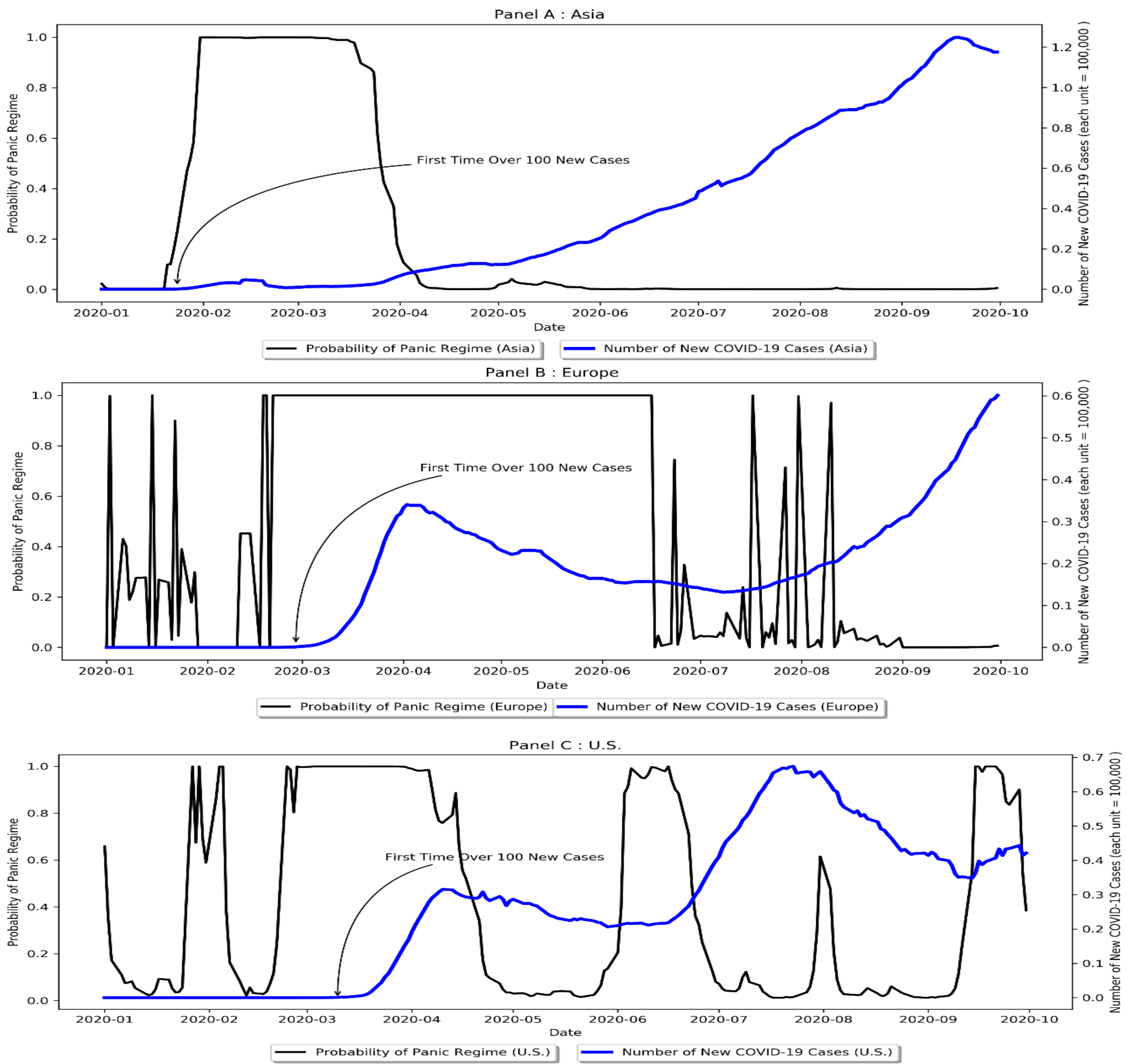
Univariate Markov Switching Model of each Region

Analysis of U.S. ETF flows also capture periods of normal regime with low volatility and panic regime with high volatility. However, the direction of U.S. ETF flows is opposite to the Asian and European ETF flows. That is, U.S. ETFs exhibit counter-cyclical characteristics and have a negative flow during the normal regime and a positive flow during the panic regime. This is consistent with the “flight home effect” in which, following a shock, investors tend to rebalance their portfolio away from the international market to their domestic market where they have less information asymmetry. We further investigate this issue in the multivariate section.

What is interesting about the data in this figure is the quick response of the market to the imminent risk of the pandemic. For example, Asian ETFs are among the first which exhibited signs of regime change and money outflows at the end of January 2020. This is while human-to-human transmission of COVID-19 was confirmed by the WHO and Chinese authorities on January 20, 2020; and on the same day, China reported the first outbreak by nearly 140 new cases in one day. We also reach a similar conclusion for the Europe flow series. Shortly following the regime change in the flow of Asian ETFs, the probability of panic regime for ETFs with Europe exposure reached to 100% on February 18. This coincides with the surge of new cases and the beginning of the lockdown policy in Europe. In the case of the U.S., however, the situation is different, and episodes of panic regime depend on the other locations. The first signs of panic regime emerge in early February and following the outflow of money from Asian ETFs.

Parameter estimates for univariate models. This table reports the parameter estimates of the univariate 2-state Markov switching models for the daily flow of ETFs with exposure to Asia, Europe, and U.S. The model choice(MSIAH Vs. MSIH) is based on the lowest AIC and BIC score from Table 2. The general MSIAH model is specified as $y_t = \mu_{S_t} + \beta_{S_t} y_{t-1} + \varepsilon_t$, where y_t refers to a vector of individual location flows, μ_{S_t} represents the conditional mean in each state (1 and 2), and σ_{S_t} shows the conditional volatility of each state. β_{S_t} denotes the first-order autoregressive term and ε_t shows the residuals. The MSIH model is a special form of MSIAH where $\beta_{S_t} = 0$. Duration shows the respective duration of being in one regime during the period of the study. The sample period is from January 2020 to October 2020. The parentheses contain the standard error. *, **, and ***, respectively, denote significance at the 10%, 5%, and 1% levels.

Probability of Panic Regime Vs. Covid-19 Cases



	Asia	Europe	USA
Model	2S-MSIAH	2S-MSIH	2S-MSIAH
$\mu 1$	0.10* (0.06)	0.18*** (0.04)	-0.03 (0.06)
$\mu 2$	-0.72*** (0.26)	-0.17 (0.14)	0.03 (0.15)
$\beta 1$	0.58*** (0.07)		0.10 (0.10)
$\beta 2$	0.12 (0.16)		0.29*** (0.11)
$\sigma 1$	0.40*** (0.04)	0.12*** (0.02)	0.35*** (0.06)
$\sigma 2$	1.48*** (0.33)	1.80*** (0.26)	1.78*** (0.32)
Duration 1	143.38	9.11	10.33
Duration 2	32.69	2.72	7.68

Markov Switching VAR model for the joint distribution

To model the joint distribution of flow series in our sample, we need to consider the flow of all ETFs in the U.S. market. It means that flow of ETFs with exposure to other geographic locations other than Asia, Europe, and the U.S., also needs to be considered. To do this, we aggregate the flow of funds with exposure to the Africa, Australia, Middle East and the rest of unclassified ETFs, and labeled them as “Others”.

During the panic period and episodes of economic decline, investors generally prefer safe-haven assets. A safe-haven by definition is an asset with low volatility and high liquidity that investors are drawn to in uncertain times

Parameter estimates for multivariate MSIAH model. This table reports the parameter estimates of the multivariate 2-state Markov switching models for the daily flow of ETFs with exposure to Asia, Europe, U.S., and rest of the world.

	Asia	Europe	USA	Other
$\mu 1$	0.12** (0.06)	0.03 (0.06)	0.03 (0.08)	0.19*** (0.06)
$\mu 2$	-1.11*** (0.21)	-0.14 (0.21)	0.43* (0.24)	-0.73** (0.30)
$\beta 1_Asia$	0.38*** (0.07)	0.13* (0.08)	-0.14 (0.09)	0.02 (0.07)
$\beta 2_Asia$	-0.00 (0.01)	-0.09 (0.13)	0.29*** (0.01)	-0.09 (0.17)
$\beta 1_Europe$	0.29*** (0.06)	0.57*** (0.07)	-0.04 (0.08)	-0.00 (0.02)
$\beta 2_Europe$	-0.08 (0.19)	0.42*** (0.16)	0.40* (0.21)	0.42* (0.23)
$\beta 1_USA$	-0.00 (0.06)	0.03 (0.06)	0.24*** (0.07)	0.07 (0.06)
$\beta 2_USA$	0.31** (0.16)	0.13 (0.15)	0.14 (0.18)	0.21 (0.19)
$\beta 1_Others$	0.13* (0.08)	-0.01 (0.08)	-0.04 (0.09)	0.28*** (0.08)
$\beta 2_Others$	-0.19 (0.15)	0.27** (0.14)	0.03 (0.18)	0.13 (0.18)
$\sigma 1$	0.35*** (0.04)			
$\sigma 2$	1.16*** (0.27)			
Duration 1	20.90			
Duration 2	5.44			

Summary and Conclusion

We examine the relations between dollar flows of U.S. traded ETFs with exposure to the U.S., Europe, Asia, and the rest of the world during the COVID-19 crisis utilizing a Markov Switching Model (MSVAR). We find convincing evidence that investors use ETFs to gain exposure to foreign markets. This study differs from the new stream of research on the effects of COVID-19 on financial markets and investors’ reactions in two major ways. First, we *follow the money* by using actual dollars of fund flows, whereas previous studies use returns. Second, we investigate the existence of two distinct regimes during this pandemic: (1) a “normal” regime when all ETFs receive positive flows and (2) a “panic” regime which emerges when the number of infected people surges in a global location and investors shift their funds from non-U.S. ETFs to U.S.-exposed ETFs. This portfolio rebalancing away from international funds toward U.S. ETFs, is consistent with the flight-to-safety effect and surge in “home bias” investing during the adverse economic shock. Furthermore, we find evidence of rapid portfolio adjustments of U.S. investors in response to the COVID-19 outbreak in a given geographic location.