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Understanding the Transmission of COVID-19 News to French Financial Markets*

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Abstract

Ortmans and Tripier (2020) found that news of coronavirus cases in Eurozone countries increased 10-year sovereign bond spreads over German sovereign yields and decreased Eurozone stock returns between January and March 2020. This paper employs returns on 174 French assets to investigate why Covid-19 news roiled financial markets in early 2020. The crisis initially led to a crash in oil prices and an appreciation of the euro. The results indicate that increases in Covid cases especially decreased returns on assets exposed to oil price decreases and euro appreciations. The banking sector was not harmed by increases in cases, indicating that fears of a sovereign-bank nexus was not driving the response. Luxury firms benefited from increases in cases in early 2020 and afterwards weathered the crisis well.

Keywords: France, Coronavirus, European Central Bank

JEL classification: G10, I10

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1. Introduction

Coronavirus news roiled financial markets in early 2020. The French stock market fell 36 percent between 1 January and 12 March 2020. The Italian stock market fell 45 percent at this time. The German stock market fell 33 percent.

Ortmans and Tripier (2020) investigated how increases in the number of new Covid-19 cases in early 2020 affected 10-year sovereign yield spreads in 15 eurozone countries relative to 10-year German sovereign yields. Using the local projection methods of Jorda (2005), they reported that an increase of ten Covid-19 cases per million people between 2 January and 5 March 2020 raised sovereign bond spreads by 0.021 percentage points (ppt) immediately and by 0.24 ppt after five business days. March 5 is a key date because it is five business days before the European Central Bank's (ECB's)12 March 2020 press conference. When Ortmans and Tripier extended their sample period beyond 12 March, they found that increases in Covid-19 cases no longer affected spreads. Employing samples up to 9 March 2020, they also reported that 10 new cases per million people led to an 11 percent drop in Eurozone stock prices within 5 business days of the news. Extending the sample period, they again found that Covid-19 cases stopped affecting returns. They concluded that interventions by the ECB on 12 March 2020 broke the link between news of Covid-19 cases and turmoil in European stock and bond markets.

On 12 March the ECB announced several steps to help the economy handle the pandemic (Arnold and Stubbington, 2020). These included increasing quantitative easing (QE) purchases in 2020 by €120bn, providing subsidized loans to banks to stimulate small business lending, and offering loans to banks at rates below the yields that banks received from deposits at the ECB. These policies increased liquidity to the banking sector (Couppey-Soubeyran, Perego, and Tripier, 2020). At the same time, ECB President Christine Lagarde caused controversy by saying

that the role of the ECB was not to reduce yield spreads between the sovereign bonds of Germany and other Eurozone countries. Later in the day however she and other ECB officials downplayed her comment.

This paper investigates why Covid-19 cases roiled financial markets before the ECB's intervention on 12 March. These are several reasons why coronavirus news could affect stock returns. Investors might have expected health concerns or legal shutdown requirements to restrict spending on items requiring close contact such as hotels, transportation, and restaurant meals (Chetty et al., 2020). Concerns that international trade would be hindered and supply chains disrupted could have harmed firms linked to global value chains (Shih, 2020). Increased government borrowing to offset the health and economic costs of the crisis could raise sovereign yields and harm banks that hold government bonds (Ortmans and Tripier, 2020). At an extreme, explosive increases in sovereign yield spreads relative to German bond yields could increase the risk of a breakup of the single currency (Jones, 2020).

The coronavirus crisis also unleashed two disinflationary shocks in Europe. First, it caused the euro to appreciate as investors withdrew funds from investments in other currencies and flocked to the greater safety of the euro and as they expected the Federal Reserve to lower interest rates more than the ECB would (see, e.g., Martin and Szalay, 2020). Second, it contributed to a drop in oil prices, as investors foresaw a drop in spending on transportation and as oil producing countries struggled to address the shock. Figure 1 shows the evolution of the euro and Brent crude oil prices as the crisis hit Europe. The euro appreciated by 6 percent between 21 February and 9 March 2020. Since a one-standard deviation shock to the euro equals 0.59 percent, a 6 percent change represents a large appreciation. Brent crude oil prices also fell

53 percent over this period. News of the coronavirus crisis could have affected stock prices by impacting the euro and crude oil prices.

To investigate why news of the number of coronavirus cases affected financial markets before the ECB's intervention on 12 March 2020, this paper examines in detail the response of French stocks to this news. It first investigates the exposures of 174 French assets to the euro, Brent crude oil prices, and several other macro variables over the last 20 years. It then compares assets' exposures to Covid-19 cases in 2020 to their exposures to macro variables. The results indicate that there is a close relationship between stocks harmed by increases in the number of coronavirus cases and stocks harmed by appreciations of the euro and falls in oil prices. Also, there is some evidence that stocks that gain from expansionary ECB policy also gain from increases in the number of cases. This suggests that investors expected an increase in the number of cases to trigger expansionary policy. Finally, there is no evidence that banks in general were harmed by increases in the number of cases. Banks such as Natixis that had made loans to firms dependent on the oil industry were harmed by increases in the number of cases, but other banks were not. This indicates that the sovereign/bank "doom loop", whereby reductions in the value of banks' holding of sovereign bonds pressure the government to borrow more to bail out banks, was not driving the fall in French stock prices in early 2020.

In previous work Aloui (2021) investigated the impact of ECB QE policies on the euro/dollar exchange rate from July 2007 to November 2020. He employed a bivariate vector autoregression model with time-varying coefficients and stochastic volatility. In October 2012 and March 2016, he reported that QE policy depreciated the euro. In April 2020, on the other hand, he reported that QE policy appreciated the euro. The euro thus behaved differently in early 2020 than it had before.

Izzeldin et al. (2021) investigated the impact of the Covid-19 crisis on G-7 stock markets. They employed the smooth transition heterogeneous autoregressive model and daily data over the 24 April 2018 to 24 April 2020 period. They reported that international travel restrictions severely affected the consumer services sector. They found that people seeking web-based entertainment and distraction options caused the technology sector to be affected the latest and least severely. On the other hand they found that the oil and gas sector was the first to be hit by the crisis.

Gharib et al. (2021) examined how the COVID-19 pandemic affected spot gold prices and West Texas Intermediate (WTI) crude oil prices. They employed the bootstrap techniques of Phillips and Shi (2018) and daily data over the 4 January 2010 to 4 May 2020 period. They reported that during the crisis oil prices experienced a negative bubble and gold experienced a positive bubble. Granger causality tests indicate bilateral contagion between the two markets. Their findings imply that investors needed a safe haven asset to hedge against oil price falls during the crisis and found one in gold.

Bouri et al. (2021) studied how the pandemic affected the interrelationships between world equities, corporate bonds, gold, crude oil prices, and the value of the dollar. They used daily data over the 14 August 2011 to 12 May 2020 period and time-varying parameter vector autoregression techniques. They reported that the pandemic changed asset interactions and caused risk to spike. After the crisis oil prices, world stocks, and corporate bonds became the main transmitters of shocks. They also discussed how panic in the oil market made oil prices an important transmitter.

Sharif et al. (2020) investigated the relationship between the number of COVID-19 cases, WTI crude oil prices, the Dow Jones Index, the Caldara and Iacoviello (2018) geopolitical risk

index, and the Baker, Bloom and Davis (2016) economic uncertainty measure. They used daily data and wavelet-based Granger causality tests and coherence wavelet methods to examine time frequency interconnections between these variables. They found that increases in the number of Covid-19 cases lower oil prices and stock prices. They also reported that falls in oil prices lower U.S. stock prices and increase geopolitical risk and economic uncertainty.

This paper adds to this literature by investigating in detail the impact of the coronavirus crisis on the French stock market. It uses more disaggregated data than the papers cited above. This makes it possible to investigate in detail why Covid-19 cases roiled French financial markets in early 2020.

The next section presents the data and methodology. Section 3 presents the results. Section 4 concludes.

2. Data and Methodology

Ortmans and Tripier (2020) reported that new cases in Eurozone countries increased 10-year sovereign bond spreads over German sovereign yields. They found that the news continued to impact spreads for five days. They reported that increases in new cases also decreased Eurozone stock returns. They found that the 12 March 2020 ECB press conference broke the link between news of Covid-19 cases and these financial market responses. Ortmans and Tripier (2021) noted that the responses were the strongest when they employed a sample period from the beginning of January 2020 until 13 March 2020.

Thorbecke (2021) investigated how 217 French stocks fared over the pandemic period. He estimated the exposure of these stocks to a set of macroeconomic variables over the 19 January 2001 to 18 February 2020 period when coronavirus news roiled financial markets. He

then used actual out-of-sample values of the macroeconomic variables to predict how stock returns would evolve over the 19 February 2020 to 20 January 2021 period. He reported that idiosyncratic rather than macroeconomic factors during the pandemic period harmed real estate companies such as Klépierre, a landlord for shopping centers, and Covivio, an owner of luxury hotels. He also found that idiosyncratic factors hurt firms related to air transportation such as ADP, which manages Paris's airports, and Airbus. In addition, he reported that idiosyncratic factors roiled firms linked to the oil industry such as Vallourbe, a manufacturer of iron and steel pipes for shale oil drillers, and CGG, a provider of geophysical services to the oil industry. On the other hand, he reported that idiosyncratic factors benefitted semiconductor companies such as Soitec, X-Fab Silicon Foundries, and STMicroelectronics and luxury firms such as Rémy Cointreau, Hermès, and LVMH.

The macroeconomic variables that Thorbecke (2021) used to predict French stock returns during the pandemic included the returns on the French and world stock markets, the change in the log of Brent crude oil prices, the change in the log of the U.S. dollar/euro exchange rate, and data from the Euro Area Monetary Policy Event-Study Database (Altavilla et al., 2019). These variables employed can also be useful for investigating why increases in the number of Covid-19 cases lowered French stock returns as the crisis emerged. For instance, they can shed light on whether the fall in stock prices was related to the fall in oil prices and the appreciation of the euro that are evident in Figure 1. In addition, if the explosive growth of yield spreads from Covid-19 cases led to fears of financial fragmentation and even a breakup of the single currency, then firms would be harmed that had benefited from Mario Draghi's promise on 26 July 2012 to do whatever it takes to save the euro. A dummy variable for 26 July 2012 can be included to observe stocks that benefited from this communication.

Data on stock returns for 311 French companies and sectors, returns on the aggregate French and world stock markets, and the change in the spot prices of Brent crude oil are obtained from the Datastream database. The data cover business days from 22 January 2001 to 19 January 2021. There are thus 5,216 observations. Following Chen, Roll, and Ross (1986), causality is assumed to flow from the macroeconomic variables on the right-hand side to firm and portfolio returns on the left-hand side and any causality flowing in the other direction is assumed to be second order. Augmented Dickey–Fuller tests permit rejection of the null hypothesis that the variables employed have unit roots. Since the variables are stationary, least squares regressions can be employed.

The following regression is employed to estimate stocks' exposures to macroeconomic variables:

$$\Delta R_{i,t} = \alpha_0 + \alpha_{1,i}\Delta R_{m,t} + \alpha_{2,i}\Delta R_{m,World,t} + \alpha_{3,i}\Delta P_{oil,t} + \alpha_{4,i}\Delta er_t + \alpha_{5,i}\Delta MP_t + \alpha_{6,i}Draghi_{i,t}, \quad (1)$$

where $\Delta R_{i,t}$ is the change in the log of the stock price index for firm or portfolio i, $\Delta R_{m,t}$ is the change in the log of the price index for the French aggregate stock market, $\Delta R_{m,World,t}$ is the change in the log of the price index for the world stock market, $\Delta P_{oil,t}$ is the change in the log of the spot price for Brent crude oil, Δer_t is the change in the U.S. dollar/euro exchange rate, ΔMP_t represents the change in the two-year French sovereign yield driven by ECB press conferences, and $Draghi_{i,t}$ is a dummy variable that equals one on 26 July 2012 when ECB President Draghi said that he would do whatever it takes to save the euro and zero otherwise. There are no cross-equation restrictions, so the model can be estimated equation-by-equation using ordinary least squares. Given the large sample size (5,216 observations) and the assumption that causality flows from the macroeconomic variables on the right-hand side to the firm- or sector-specific returns on the left-hand side, ordinary least squares should provide precise parameter estimates.

The exposure of the same assets to the number of Covid-19 cases is also estimated over the sample period from the beginning of January 2020 to 13 March 2020 highlighted by Ortmans and Tripier (2021). Data on the number of cases in France are obtained from Our World in Data.[1]

The following regression is estimated:

$$\Delta R_{i,t} = \beta_{0,i} + \beta_{1,i}\Delta R_{m,t} + \beta_{2,i}\Delta R_{m,World,t} + \beta_{3,i}\Delta P_{oil,t} + \beta_{4,i}\Delta er_t + \beta_{5,i}\Delta MP_t + \beta_{6,i}NumCases_t , \quad (2)$$

NumCases represents the number of Covid-19 cases and the other variables are defined after equation (1). Since Ortmans and Tripier (2020) reported that the number of cases had dynamic effects of asset prices over five days, equation (2) is estimated using the number of cases lagged five days, the number of cases lagged three days, and the contemporaneous number of cases. The variable $Draghi_{i,t}$ from equation (1) is excluded from equation (2) because it only takes on values of zero over the 1 January 2020 to 13 March 2020 sample period.

To investigate the relationship between assets' exposures to macroeconomic variables over 20 years from equation (1) and assets' exposures to Covid-19 cases in the beginning of 2020 from equation (2), the estimated coefficient β_6 from equation (2) is regressed on the estimated α_i coefficients from equation (1). Using B_6 to represent the estimated value of β_6 from equation (2) and a_i to represent the estimated values of α_i from equation (1), the following regression is thus estimated:

$$B_{6,i} = \gamma_0 + \gamma_1 a_{1,i} + \gamma_2 a_{2,i} + \gamma_3 a_{3,i} + \gamma_4 a_{4,i} + \gamma_5 a_{5,i} + \gamma_6 a_{6,i} + \gamma_7 \text{Change}_i . \quad (3)$$

Change_i represents the change in the value of asset *i* between 1 January 2020 and 20 January 2021. This variable would be informative if investors had foresight about how assets would fare

[1] The website for OWID is https://ourworldindata.org/coronavirus-data .

during the pandemic period. When estimating equation (3) only values of a_i from regressions where the adjusted R-squared from estimating equation (1) exceeds 0.10 are used. This helps exclude cases where the a_i coefficients have little explanatory power. Out of 311 regressions run using equation (1), there are 174 that yield adjusted R-squared coefficients exceeding 0.10.

3. Results

Table 1 presents the coefficients for the number of cases from estimating equation (1). Columns (2), (4), and (6) present stocks' exposures to the contemporaneous number of cases, the number of cases lagged three days, and the number of cases lagged five days, respectively. Columns (3), (5), and (7) present the corresponding standard errors.

The top row presents the coefficients for the aggregate French stock market. An increase in the number of cases, the number of cases lagged three days, and the number of cases lagged five days all decrease returns. For contemporaneous cases, a one standard deviation increase in cases reduces returns by 0.4 percent. For returns lagged three days, a one standard deviation increase in cases reduces returns by 0.2 percent. For returns lagged five days, a one standard deviation increase in cases reduces returns by 2.9 percent. These findings reflect the results of Ortmans and Tripier (2020) indicating that cases lagged five days have the largest impact on asset returns.

There is a close relationship between the coefficients in columns (2), (4), and (6) of Table 1. The adjusted R-squared from a regression of the coefficients in column (2) on the corresponding coefficients in column (4) equals 0.878. The adjusted R-squared from a regression of the coefficients in column (4) on the coefficients on column (6) equals 0.901. Thus the contemporaneous number of cases, the number of cases lagged three days, and the number of cases lagged five days impact the same assets in similar ways.

To investigate the cross-sectional responses across the assets listed in Table 1 to news of the number of cases, equation (3) is estimated. This involves regressing the coefficients in columns (2), (4), and (6) on the assets' exposures to the return on the French economy, the return on the world economy, the change in the log of the Brent crude oil spot price, the change in the log of the dollar/euro exchange rate, the change in 2-year French interest rates driven by ECB press conferences, Mario Draghi's announcement to do whatever it takes to save the euro on 26 July 2012, and the actual change in the asset's return between 1 January 2020 and 20 January 2021.[2]

The results are presented in Table 2. There is a close relationship between stocks' exposures to oil prices and to the euro and stocks' exposures to the number of cases. Assets that benefit from oil price increases and euro depreciations tend to be harmed by increases in the number of cases, the number of cases lagged three days, and the number of cases lagged five days. Also, the results allow rejection at the 0.057 level of the null hypothesis that assets that benefit from expansionary monetary policy do not benefit from an increase in contemporaneous cases. This suggests that investors were anticipating the health crisis leading to looser monetary policy. The other coefficients in Table 2 are not statistically significant, although the coefficients on all the right-hand side variables always take on the same sign whether the left-hand side variable is the number of cases, the number of cases lagged three days, and the number of cases lagged five days. For instance, in all three regressions stocks that did well (badly) over the 1 January 2020 to 20 January 2021 period also exhibited a positive (negative) relationship between an increase in the number of cases and their stock returns. This suggests that investors had some idea of the stocks that would gain or lose from the pandemic.

[2] Assets' exposures to these variables are available on request.

Figure 2 sheds light on the results in Tables 1 and 2. The horizontal axis plots the gains or losses of the assets listed in Table 1 over the 1 January 2020 to 13 March 2020 period. This was a time when coronavirus news roiled markets and contributed to a 34 percent drop in the aggregate stock market. The vertical axis shows assets' exposures to news of the contemporaneous number of cases. As the regression line shows, assets that did worse during this period tended to be more negatively affected by increases in the number of cases. Some assets, however, are outliers.

The Southwest portion of Figure 2 shows those assets that are harmed even more by increases in the number of cases than one would predict from their overall losses on the horizontal axis. These include CGG, Vallourec, and oil equipment and services stocks. These are all assets that lose significantly when oil prices fall. As news of the pandemic contributed to a crash in oil prices, these stocks were especially exposed to an increase in the number of cases. Airline stocks gain from decreases in oil prices. This might help explain why airline stocks are above the regression line in Figure 2.

In the Northeast corner of Figure 2 are medical services and also Biomerieux, a maker of medical equipment. News of the medical emergency benefited these stocks.

Examining banks, Natixis in the South of Figure 2 is harmed by increases in the number of cases. Morris and Smith (2020) reported that Natixis had extended many loans to companies related to the oil sector. As the pandemic caused oil prices to crash, it damaged Natixis. On the other hand, Société Générale in the North of Figure 1 benefits from an increase in cases. Thorbecke (2021) reported that Société Générale gained from euro appreciations, partly due to having borrowed from abroad. As an increase in the number of cases was associated with a euro appreciation, it benefited Société Générale.

Two electricity companies, Albioma and EDF, and also the overall electricity sector are below the regression line in Figure 2. Equation (1) indicates that all three of these benefit from higher oil prices. Since the Covid-19 pandemic led to a fall in oil prices, increases in the number of coronavirus cases could have exerted a more negative effect than expected of these assets.

France's luxury brands in Table 1, including LVMH, Hermès, Kering, and Christian Dior, gained from increases in the number of cases. Unlike many French firms, these company's stocks are either not harmed or only slightly harmed by appreciations. These firms have pricing power (see, e.g., Goldstein 2021). Thorbecke (2021) also reported that these stocks performed well during the pandemic. Investors thus discounted the impact of the health crisis on these stocks.

4. Conclusion

The coronavirus crisis caused stock prices in Europe and around the world to collapse between the middle of February and the middle of March 2020. Ortmans and Tripier (2020) found that increases in Covid-19 cases in early 2020 lowered Eurozone stock prices and raised Eurozone sovereign bond spreads over German bond yields. They reported that the ECB's intervention on 12 March 2020 broke the link between news of Covid-19 cases and turmoil in European stock and bond markets.

This paper investigates why coronavirus news roiled the French stock market before the ECB's actions on 12 March 2020. The crisis contributed to a drop in oil prices, as spending on transportation fell and as oil producing countries struggled. The fall in oil prices was unprecedented, with West Texas Crude oil prices falling to negative 37.63 on 20 April 2020. The results in this paper indicate that assets exposed to oil price falls suffered from news of rising

Covid-19 cases. As Figure 1 shows, in early March 2020 the euro also appreciated. The results indicate that assets exposed to euro appreciations also fared badly.

Couppey-Soubeyran, Perego, and Tripier (2020) observed that the coronavirus crisis could lead to non-performing loans and threaten bank solvency, leading to sovereign debt and banking crises. There is no evidence that these fears drove the fall in French stock prices in early 2020. Banks such as Natixis that had loaned to firms exposed to oil price falls were harmed by increases in the number of cases. On the other hand banks such as Société Générale that gain from euro appreciations benefited from increases in the number of cases. The overall banking sector exhibited no exposure to the number of cases.

Several luxury brands such as LVMH, Hermès, Kering, and Christian Dior, gained from increases in the number of cases. These firms are also resilient to euro appreciations and performed well during the pandemic (Thorbecke, 2021). This suggests that these high-end firms help to stabilize the French economy in the face of difficult shocks. It is important to nurture the luxury sector, for instance by encouraging industrial clusters in France where upstream and downstream firms can congregate and workers can interact. The experience of Japan, Taiwan, and China indicates that this type of industrial agglomeration helps to spread know-how, increase human capital, and foster innovation. In addition, keeping production in France can help to maintain quality and promote brand strength.

Future research should extend the work in this paper to Italy. Ortmans and Tripier (2020) reported that, without the ECB's 12 March 2020 intervention, Italy's sovereign debt rates would have risen to 19.5 percent by 18 March 2020. Italy's public debt was higher than France's, and investors might have feared for debt sustainability and a sovereign-bank nexus emerging in Italy. In addition, the appreciation of the euro combined with the fall in German

bond yields relative to yields on other bonds suggests that the coronavirus crisis before 12 March 2020 led to a flight to the safety of the euro and of German assets. Future research should investigate whether this is true and if so what caused investors to later move back to risky assets. Finally, since ECB policy on 12 March 2020 broke the link between Covid cases and Eurozone assets, future research should investigate whether investors shifted their focus from the coronavirus outbreak to ECB policy after 12 March.

Table 1. The Impact of an Increase in Covid-19 Cases on French Stock Returns between 1 January 2020 and 13 March 2020.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Datastream (DS) Portfolio or Company	Coefficient on Contemporaneous Number of Cases	S.E.	Coefficient on Number of Cases Lagged 3 Days	S.E.	Coefficient on Number of Cases Lagged 5 Days	S.E.
French Stock Market (DS Portfolio)	-1.90E-05***	5.24E-06	-7.58E-05***	1.16E-05	-0.000137***	3.44E-05
Aerospace (DS Portfolio)	-0.00000892	0.0000089	-4.89E-05	3.12E-05	-9.66E-05	5.76E-05
Airlines (DS Portfolio)	0.0000316**	0.0000144	8.94E-05	7.27E-05	0.000285***	0.000103
Apparel Retailer (DS Portfolio)	0.0000207**	0.00000943	7.46E-05*	4.08E-05	1.86E-04***	6.75E-05
Auto Parts (DS Portfolio)	-0.000016**	0.00000613	-7.64E-05**	3.12E-05	-0.000138**	5.73E-05
Automobiles (DS Portfolio)	0.0000237***	0.0000088	6.15E-05	4.87E-05	9.09E-05	7.97E-05
Banks (DS Portfolio)	0.0000041	0.0000127	-4.93E-07	5.64E-05	-4.03E-05	8.15E-05
Basic Materials (DS Portfolio)	0.0000216***	0.00000238	7.37E-05***	1.10E-05	0.000152***	1.59E-05
Basic Resources (DS Portfolio)	-0.0000191***	0.00000437	-4.78E-05*	2.47E-05	-9.31E-05**	4.40E-05
Beverages (DS Portfolio)	-0.00000468	0.00000632	-5.40E-06	2.87E-05	3.77E-06	5.11E-05
Biotechnology (DS Portfolio)	-0.000049***	0.00000712	-0.000157***	3.24E-05	-0.000316***	5.35E-05
Cement (DS Portfolio)	-0.00000556	0.00000655	-2.71E-05	2.93E-05	-5.56E-05	5.54E-05
Chemicals (DS Portfolio)	0.0000243***	0.00000251	8.12E-05***	1.22E-05	0.000167***	1.81E-05
Clothing, Access (DS Portfolio)	0.00000982**	0.00000407	5.51E-05**	2.29E-05	0.000128***	4.48E-05
Computer Svs (DS Portfolio)	-0.0000258***	0.00000307	-9.60E-05***	1.55E-05	-0.000208***	2.31E-05
CONS.DISCRETNRY. (DS Portfolio)	0.00000988***	0.0000034	4.22E-05**	1.82E-05	0.0001***	3.30E-05
Construction (DS Portfolio)	0.000029***	0.00000547	6.76E-05**	3.26E-05	0.000173***	5.41E-05
CONSUMER STAPLES (DS Portfolio)	0.00000986***	0.00000246	3.13E-05***	1.11E-05	7.13E-05***	1.86E-05
Cosmetics (DS Portfolio)	-0.00000288	0.00000463	2.06E-05	2.96E-05	3.31E-05	5.24E-05
Defense (DS Portfolio)	-0.0000146***	0.00000436	-3.63E-05*	2.16E-05	-6.87E-05*	3.72E-05
Distill.Vintners (DS Portfolio)	-0.00000497	0.00000634	-6.04E-06	2.90E-05	2.11E-06	5.16E-05
Divers. Retail (DS Portfolio)	0.0000216	0.0000293	4.00E-05	0.00012	0.00024	0.000228
Drug/Groc Stores (DS Portfolio)	0.0000289***	0.00000799	7.06E-05*	4.08E-05	0.00017**	7.29E-05
Elec. Elect. Eq (DS Portfolio)	-0.000000288	0.00000426	-7.87E-06	1.89E-05	-3.66E-05	3.13E-05
Elec. Entertain (DS Portfolio)	-0.00000188	0.00000663	-2.82E-05	3.00E-05	-5.77E-05	5.35E-05
Elec. Office Eq. (DS Portfolio)	-0.000072***	0.0000101	-0.000221***	5.53E-05	-4.28E-04***	9.45E-05
Electricity (DS Portfolio)	-0.00000917	0.00000996	-6.34E-05	4.16E-05	-8.48E-05	8.03E-05
Entertainment (DS Portfolio)	0.0000027	0.0000129	4.07E-05	5.09E-05	-2.25E-05	7.57E-05
Food Producers DS)	0.0000157***	0.00000343	4.91E-05***	1.66E-05	9.34E-05***	2.90E-05
Food Retail, Ws (DS Portfolio)	0.0000302***	0.00000886	7.26E-05	4.37E-05	0.000183**	7.74E-05
Gen. Industrials (DS Portfolio)	-0.0000162***	0.00000418	-6.64E-05***	1.58E-05	-0.000144***	3.27E-05
General Mining (DS Portfolio)	-0.0000275***	0.00000516	-8.51E-05***	2.67E-05	-0.000151***	4.68E-05
Health Care (DS Portfolio)	0.00000381	0.00000366	2.97E-05*	1.53E-05	5.46E-05*	3.24E-05
Health Care Fac. (DS Portfolio)	-0.0000212***	0.00000486	-7.44E-05***	1.75E-05	-0.000142***	3.00E-05
Health Care Prvd (DS Portfolio)	-0.0000213***	0.00000474	-7.43E-05	1.72E-05	-0.000142***	2.95E-05
Home Const. (DS Portfolio)	-0.000000487	0.00000411	-7.57E-06***	1.52E-05	-3.15E-05	3.05E-05
Hotels & Motels (DS Portfolio)	0.0000188***	0.00000537	5.66E-05**	2.45E-05	0.000149***	3.60E-05
Ind. Engineering (DS Portfolio)	0.0000191*	0.00000963	6.90E-05**	2.91E-05	0.000114**	5.17E-05
Ind. Goods & Svs (DS Portfolio)	-0.00000937*	0.0000047	-4.00E-05**	1.77E-05	-8.71E-05**	3.26E-05
Ind. Metal, Mine (DS Portfolio)	-0.0000185***	0.00000442	-4.55E-05*	2.58E-05	-8.84E-05*	4.62E-05
Ind. Support Svs (DS Portfolio)	-0.0000191***	0.00000369	-6.36E-05***	1.62E-05	-0.000129***	2.72E-05
Ind. Transport (DS Portfolio)	-0.0000203***	0.0000037	-7.02E-05***	1.66E-05	-0.000148***	2.91E-05
Int. Oil & Gas (DS Portfolio)	-0.0000237***	0.00000869	-6.60E-05*	3.59E-05	-0.000202***	4.21E-05
Iron & Steel (DS Portfolio)	-0.0000398***	0.00000646	-0.000105***	3.29E-05	-0.000227***	5.70E-05
Leisure Goods (DS Portfolio)	-0.000011**	0.00000437	-5.24E-05***	1.80E-05	-0.000119***	3.08E-05
Life Insurance (DS Portfolio)	-0.0000163***	0.00000575	-8.49E-05***	2.59E-05	-0.000209***	4.34E-05
Machinery: Const (DS Portfolio)	0.0000129	0.0000125	4.77E-05	3.66E-05	5.93E-05	6.19E-05
Media (DS Portfolio)	0.00000582**	0.0000027	-1.70E-07	1.42E-05	-1.29E-06	2.82E-05
Medical Services (DS Portfolio)	0.0000716***	0.00000889	0.000234***	4.00E-05	0.000464***	7.11E-05
Medical Supplies (DS Portfolio)	-0.00000249	0.00000387	9.68E-06	2.07E-05	3.94E-05	3.45E-05
Nonferrous Metal (DS Portfolio)	0.000031***	0.0000113	0.000138**	5.33E-05	0.00025***	9.29E-05
Oil Eq & Svs (DS Portfolio)	-0.0000717***	0.0000149	-0.00017**	7.37E-05	-0.000433***	0.000106
Oil: Crude Prod. (DS Portfolio)	-0.00000488	0.0000074	1.56E-05	2.74E-05	-2.38E-05	4.36E-05
Personal Goods (DS Portfolio)	0.00000587*	0.0000033	4.45E-05**	2.13E-05	9.85E-05**	4.24E-05
Pharmaceuticals (DS Portfolio)	0.00000245	0.00000707	3.01E-05	2.78E-05	3.62E-05	5.31E-05

Publishing (DS Portfolio)	-0.0000293***	0.00000782	-0.000102***	3.30E-05	-0.000246***	5.70E-05
Radio TV Bcast (DS Portfolio)	0.0000173***	0.00000379	3.66E-05*	2.16E-05	7.52E-05*	4.21E-05
Railroads (DS Portfolio)	0.00000632	0.0000064	-2.25E-05	3.92E-05	-2.10E-05	7.46E-05
Real Estate (DS Portfolio)	-0.000018***	0.0000047	-7.72E-05***	2.41E-05	-0.000156***	4.20E-05
Recreation Prod (DS Portfolio)	-0.0000303***	0.00000961	-0.000102**	4.07E-05	-0.00023***	7.47E-05
Recreation Vcles (DS Portfolio)	-0.0000447***	0.0000116	-0.000138***	4.71E-05	-0.000299***	8.57E-05
Recreational Svs (DS Portfolio)	0.0000116	0.000011	2.54E-05	4.25E-05	5.22E-05	8.14E-05
Rest. & Bars (DS Portfolio)	-0.0000148***	0.0000092	-0.000102***	3.07E-05	-0.000164**	6.14E-05
Retailers (DS Portfolio)	0.0000194**	0.00000911	6.92E-05*	3.95E-05	0.000175**	6.53E-05
Semiconductors (DS Portfolio)	-0.000000725	0.00000931	-3.24E-05	2.82E-05	-8.54E-05	5.23E-05
Software (DS Portfolio)	-0.000000961	0.00000659	-8.79E-06	2.34E-05	-1.49E-05	3.90E-05
Tech. Hardware (DS Portfolio)	-0.0000069	0.00000655	-3.96E-05**	1.92E-05	-9.59E-05**	3.73E-05
Telecom. Eq (DS Portfolio)	-0.0000133	0.0000177	-7.96E-05	8.44E-05	-0.000113	0.00013
Telecom. Svs (DS Portfolio)	-0.0000135***	0.00000414	-5.76E-05***	1.75E-05	-0.000102***	3.66E-05
Telecom.Svs Prvd (DS Portfolio)	-0.0000137***	0.00000415	-5.83E-05***	1.75E-05	-0.000103***	3.67E-05
Tires (DS Portfolio)	0.000018**	0.00000687	4.65E-05	3.41E-05	0.000102*	5.57E-05
Transport Svs (DS Portfolio)	-0.0000283***	0.0000049	-8.83E-05***	2.59E-05	-0.000189***	4.60E-05
Travel & Leisure (DS Portfolio)	0.00000261	0.00000588	-2.00E-05	2.41E-05	8.21E-07	4.01E-05
Water (DS Portfolio)	-0.0000356***	0.00000485	-0.000142***	2.12E-05	-0.000262***	4.73E-05
ACCOR	0.0000198***	0.00000557	5.92E-05**	2.53E-05	0.000155***	3.75E-05
ADP	-0.0000558***	0.00000594	-0.000177***	3.54E-05	-0.000354***	5.74E-05
AIR FRANCE-KLM	0.0000317**	0.0000144	8.96E-05	7.27E-05	0.000285***	0.000103
AIRBUS	-0.00000366	0.0000118	-2.34E-05	4.40E-05	-4.06E-05	7.42E-05
ALBIOMA	0.0000023	0.0000191	1.51E-05	7.70E-05	-4.69E-07	0.000112
ALSTOM	-0.00000514	0.00000825	-2.55E-05	2.95E-05	-5.40E-05	5.41E-05
ALTEN	-0.0000489***	0.00000393	-0.000169***	2.01E-05	-0.000366***	2.85E-05
ARKEMA	0.0000172**	0.00000755	2.23E-05	2.65E-05	3.80E-05	5.83E-05
ATOS	-0.0000223***	0.00000591	-7.92E-05***	2.29E-05	-0.000206***	2.83E-05
BENETEAU	-0.0000447***	0.0000116	-0.000138***	4.71E-05	-0.000299***	8.57E-05
BIC	0.0000218**	0.00000944	6.00E-05	4.15E-05	9.42E-05	7.09E-05
BIOMERIEUX	0.0000429***	0.0000102	0.000143***	4.33E-05	0.000307***	8.08E-05
BNP PARIBAS	0.00000166	0.0000146	3.62E-06	5.70E-05	-5.14E-05	7.84E-05
BOLLORE	-0.0000145	0.00001	-3.73E-05	3.89E-05	-0.000141**	6.56E-05
BOUYGUES	0.0000277***	0.00000534	6.93E-05**	2.90E-05	0.000167***	4.54E-05
BUREAU VERITAS	-0.0000112*	0.00000583	-3.26E-05	2.05E-05	-8.64E-05**	3.42E-05
CAPGEMINI	-0.0000329***	0.00000543	-0.000126***	2.59E-05	-0.000257***	4.53E-05
CARREFOUR	0.0000352***	0.00000996	8.65E-05*	4.91E-05	0.000213**	8.65E-05
CASINO GUICHARD-P	0.0000137*	0.00000728	2.48E-05	3.50E-05	8.12E-05	6.42E-05
CELLECTIS	-0.0000234**	0.00000921	-4.77E-05	3.29E-05	-7.26E-05	6.82E-05
CGG	-0.000137***	0.0000134	-0.000336***	7.93E-05	-0.000779***	0.000111
CHRISTIAN DIOR	0.00000557	0.00000519	3.08E-05	2.30E-05	7.81E-05*	4.22E-05
COLAS	0.00000585*	0.00000296	1.98E-05	1.36E-05	1.67E-05	2.00E-05
COVIVIO	-0.000037***	0.00000675	-0.000154***	3.31E-05	-0.000293***	5.97E-05
CREDIT AGRICOLE	0.00000734	0.0000128	6.85E-06	6.11E-05	-1.18E-05	9.29E-05
DANONE	0.0000171***	0.00000428	5.13E-05**	2.09E-05	9.82E-05***	3.62E-05
DASSAULT SYSTEMES	7.71E-08	0.00000699	-5.90E-06	2.51E-05	-7.95E-06	4.16E-05
DERICHEBOURG	-0.000000476	0.0000101	1.81E-05	4.48E-05	-1.91E-08	6.91E-05
DEVOTEAM	-0.0000241*	0.0000121	-8.85E-05*	4.70E-05	-0.000263***	6.50E-05
EDENRED	-0.000000409	0.00000599	-4.76E-05	3.66E-05	-6.85E-05	7.44E-05
EDF	-0.0000122	0.0000111	-7.73E-05	4.69E-05	-0.000111	9.08E-05
EIFFAGE	-0.0000187***	0.00000485	-8.77E-05***	2.01E-05	-0.000156***	4.18E-05
ERAMET	0.000031***	0.0000113	0.000138**	5.34E-05	0.00025***	9.29E-05
ESSILORLUXOTTICA	0.0000013	0.00000368	2.19E-05	1.96E-05	6.37E-05*	3.64E-05
EUROFINS SCIEN.	0.0000716***	0.00000889	0.000234***	4.00E-05	0.000464***	7.11E-05
EUTELSAT COMMUNICATIONS	-0.0000133	0.0000177	-7.96E-05	8.44E-05	-0.000113	0.00013
FAURECIA	-0.0000239***	0.00000741	-9.73E-05***	3.30E-05	-0.000188***	6.17E-05
GECINA	-0.0000168***	0.00000604	-7.98E-05**	3.33E-05	-0.000138*	6.23E-05
GETLINK	0.0000062	0.0000064	-2.25E-05	3.91E-05	-2.10E-05	7.44E-05
HERMES INTL.	0.00000999**	0.00000427	5.50E-05**	2.29E-05	0.00012**	4.59E-05
ICADE REIT	-0.00000543	0.00000618	-2.39E-05	3.03E-05	-4.75E-05	5.33E-05
ILIAD	-0.0000354***	0.0000111	-9.87E-05**	4.39E-05	-0.000256***	6.46E-05
IMERYS	-0.0000275***	0.00000516	-8.51E-05***	2.67E-05	-0.000151***	4.67E-05
INNATE PHARMA	-0.000105***	0.0000149	-0.000329***	6.71E-05	-0.000715***	9.58E-05
IPSEN	-0.0000285	0.0000247	-9.21E-05	8.72E-05	-0.00022	0.000154
IPSOS	-0.0000193**	0.00000906	-6.54E-05*	3.85E-05	-0.00013*	6.96E-05

JACQUET METALS	0.0000277**	0.0000116	-1.15E-05	6.92E-05	5.27E-05	0.000124
JCDECAUX	-0.0000237**	0.0000104	-7.34E-05*	4.11E-05	-0.000198***	7.18E-05
KERING	0.0000207**	0.00000943	7.46E-05*	4.08E-05	0.000186***	6.75E-05
KLEPIERRE REIT	-0.000033***	0.00000812	-0.000151***	4.16E-05	-0.000315***	8.05E-05
KORIAN	-0.0000113	0.00000967	-6.18E-05	3.92E-05	-9.45E-05	6.61E-05
L AIR LQE.SC.ANYME. POUR L ETUDE ET L EPXTN.	0.0000261***	0.00000277	9.15E-05***	1.21E-05	0.000188***	1.91E-05
LAGARDERE GROUPE	-0.000025***	0.00000864	-8.77E-05**	3.45E-05	-0.000215***	6.09E-05
LEGRAND	-0.0000192***	0.00000561	-0.000101***	1.92E-05	-0.000203***	3.82E-05
LISI	-0.000029	0.0000177	-0.00012*	6.62E-05	-0.0002**	0.000111
LNA SANTE	-0.0000259***	0.0000047	-7.25E-05***	2.07E-05	-0.000129***	4.25E-05
L'OREAL	-0.00000276	0.00000466	2.09E-05	2.97E-05	3.39E-05	5.25E-05
LVMH	0.0000115**	0.00000511	6.39E-05**	2.77E-05	0.000148***	5.09E-05
M6-METROPOLE TV	0.00000559	0.00000452	1.40E-05	1.98E-05	2.69E-05	3.73E-05
MANITOU	0.0000129	0.0000125	4.77E-05	3.66E-05	5.93E-05	6.19E-05
MAUREL ET PROM	-0.0000198**	0.00000852	-3.13E-05	3.48E-05	-8.80E-05	5.91E-05
MERCIALYS REIT	-0.0000095	0.0000072	-5.91E-05*	3.14E-05	-0.000137***	5.29E-05
MERSEN (EX LCL)	-0.000083**	0.0000142	-0.000271***	6.31E-05	-0.000556***	0.000106
MICHELIN	0.000018**	0.00000687	4.65E-05	3.41E-05	0.000102*	5.57E-05
NATIXIS	-0.0000558***	0.0000101	-0.000238***	5.16E-05	-0.000466***	0.000107
NEXANS	-0.0000265***	0.00000708	-9.54E-05***	2.99E-05	-0.000212***	4.68E-05
NEXITY	-0.0000331***	0.00000394	-0.000133***	1.69E-05	-0.000244***	3.71E-05
NRJ GROUP	0.0000194**	0.00000911	5.82E-05*	3.37E-05	7.42E-05	4.89E-05
ORANGE	-0.00000821	0.00000578	-4.74E-05*	2.51E-05	-6.25E-05	5.22E-05
ORPEA	-0.0000306***	0.00000532	-0.0001***	2.32E-05	-0.000214***	3.94E-05
PERNOD-RICARD	-0.00000685	0.00000624	-1.43E-05	2.75E-05	-1.48E-05	4.93E-05
PLASTIC OMNIUM	-0.00000849	0.00000686	-3.04E-05	3.76E-05	-5.39E-05	6.96E-05
PUBLICIS GROUPE	-0.00000663	0.00000976	-6.58E-05	4.79E-05	-9.63E-05	8.44E-05
QUADIENT	-0.0000721***	0.0000101	-0.000221***	5.53E-05	-0.000429***	9.46E-05
RALLYE	0.0000212	0.0000293	3.88E-05	0.00012	0.000237	0.000228
REMY COINTREAU	0.0000128	0.0000116	7.08E-05	5.44E-05	0.000162	9.73E-05
RENAULT	0.0000158	0.0000209	2.88E-05	9.27E-05	-8.33E-06	0.000133
REXEL	-0.0000251**	0.0000112	-0.000101**	4.86E-05	-0.000246***	7.01E-05
RUBIS	0.0000259**	0.0000119	6.48E-05	4.79E-05	0.000192**	7.24E-05
SAFRAN	-0.0000178***	0.00000612	-9.39E-05***	1.69E-05	-0.000198***	4.56E-05
SANOFI	0.00000401	0.00000673	3.66E-05	2.81E-05	4.95E-05	5.43E-05
SCHNEIDER ELECTRIC	0.0000106*	0.0000063	3.75E-05	2.79E-05	4.63E-05	4.70E-05
SOCIETE GENERALE	0.0000369**	0.0000147	9.74E-05	7.55E-05	0.000161	0.000116
SODEXO	-0.0000148	0.0000092	-0.000102***	3.07E-05	-0.000164**	6.14E-05
SOITEC	0.0000248	0.0000209	5.75E-05	6.68E-05	0.0001	0.000123
SOLOCAL GROUP	-0.000066**	0.0000251	3.88E-05	0.00012	-0.000524***	0.000143
SOPRA STERIA GROUP	-0.0000317***	0.00000638	-0.00011***	2.79E-05	-0.000254***	5.57E-05
STMICROELECTRONICS	-0.00000263	0.00000948	-3.96E-05	3.08E-05	-0.0001*	5.69E-05
SWORD GROUP	-0.0000228**	0.00000953	-9.84E-05**	3.89E-05	-0.000256***	6.34E-05
TECHNICOLOR	0.0000343	0.0000278	0.000201*	0.000114	0.000208	0.000191
TELEPERFORMANCE	-0.000024***	0.00000536	-7.86E-05***	2.91E-05	-0.000177***	4.96E-05
TF1 (TV.FSE.1)	0.00000746	0.00000907	-3.91E-05	6.11E-05	-5.05E-05	0.000102
THALES	-0.000017***	0.00000538	-4.57E-05	2.80E-05	-9.08E-05*	4.55E-05
TOTAL	-0.0000237***	0.00000869	-6.60E-05*	3.59E-05	-0.000202***	4.21E-05
TRIGANO	-0.0000303***	0.00000961	-0.000102**	4.07E-05	-0.00023***	7.47E-05
UBISOFT ENTERTAINMENT CAT A	-0.000000874	0.0000068	-2.56E-05	3.13E-05	-5.17E-05	5.61E-05
VALEO	-0.0000199**	0.00000878	-0.000122**	4.71E-05	-0.000199**	8.97E-05
VALLOUREC	-0.0000736***	0.00000878	-0.00016**	6.51E-05	-0.000379***	0.000105
VICAT	-0.00000556	0.00000655	-2.71E-05	2.93E-05	-5.55E-05	5.54E-05
VINCI	0.0000393***	0.00000673	9.73E-05**	4.08E-05	0.000242***	6.62E-05
VIVENDI	0.0000185***	0.00000418	4.15E-05*	2.32E-05	8.48E-05*	4.50E-05

Note: The table presents results from regressions of the returns on the firms listed in column (1) on either the contemporaneous number of new cases (column (2)), the number of new cases lagged three days (column (4)), or the number of new cases lagged five days (column (6)). The regressors also include the change in the euro/dollar nominal exchange rate, the return on the aggregate French stock market, the return on the world stock market, the change in the log of the spot price for Brent crude oil, and Altavilla et al's (2019) measures of the changes in 2-year French sovereign yields driven by European Central Bank press conferences, The sample period extends from 1 January 2020 to 13 March 2020. There are 53 observations. S.E. in columns (3), (5), and (7) are heteroscedasticity and autocorrelation consistent standard errors

Source: Datastream database and calculations by the author. *** (**)[*]denotes significance at the 1% (5%) [10%] level

Table 2. The Relationship between the Exposure of 174 French Assets to Covid-19 Cases and to Macroeconomic Variables.

	Left-Hand Side Variable					
	Coefficient on Contemporaneous Number of Covid-19 Cases		Coefficient on Number of Covid-19 Cases Lagged 3 Days		Coefficient on Number of Covid-19 Cases Lagged 5 Days	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Right-Hand Side Variables		S.E.		S.E.		S.E.
Coefficient on Return on French Stock Market	0.0000043	0.00000076	0.000014	0.000024	0.000010	0.000053
Coefficient on Return on World Stock Market	-0.00000052	0.000013	-0.000010	0.000046	-0.000028	0.000095
Coefficient on Change in Log of Brent Oil Spot Price	-0.00025***	0.000057	-0.00063***	0.00018	-0.0014***	0.00038
Coefficient on Change in Log of Euro	0.000052***	0.000020	0.00015**	0.00006	0.00033**	0.00013
Coefficient on Change in 2-year French Interest Rate Driven by ECB Press Conferences	-0.0134*	0.0070	-0.031	0.022	-0.075	0.048
Coefficient on Dummy Variable for Draghi's Announcement to Do Whatever It Takes	0.00012	0.00014	0.000067	0.00051	0.0012	0.0010
Coefficient on Change in Return between 1 January 2020 and 20 January 2021	0.000015	0.000009	0.000020	0.000043	0.000089	0.000064
Number of Observations	174		174		174	
Adjusted R-squared	0.193		0.092		0.154	

Note: The table presents the results from using the 174 exposures to the number of cases reported in Table 1 as independent variables. Column (2) presents the results using the coefficients from the contemporaneous number of cases as the regressand, column (4) presents the results using the number of cases lagged three days as the regressand, and column (6) presents the results using the number of cases lagged five days as the regressand. The first six regressors listed in column (1) are the regression coefficients from regressions of the returns on the 174 assets listed in Table 1 on the return on the aggregate French stock market, the return on the world stock market, the change in the log of the spot price for Brent crude oil, the change in the log of the euro/dollar exchange rate, Altavilla et al's (2019) measures of the changes in 2-year French sovereign yields driven by European Central Bank press conferences, and a dummy variable that equals one on 26 July 2012 when ECB President Draghi said that he would do whatever it takes to save the euro and zero otherwise. The sample period used to obtain the coefficients on the right-

hand side variables that are used as regressors extends from 22 January 2001 to 19 January 2021. There are 5,216 observations. One additional regressor in column 1 is the actual change in the return on the asset between 1 January 2020 and 19 January 2021. This last regressor could be informative if investors could foreseet how the pandemic would affect different firms and sectors. S.E. in columns (3), (5), and (7) are heteroscedasticity and autocorrelation consistent standard errors
Source: Datastream database and calculations by the author.
*** (**)[*]denotes significance at the 1% (5%) [10%] level

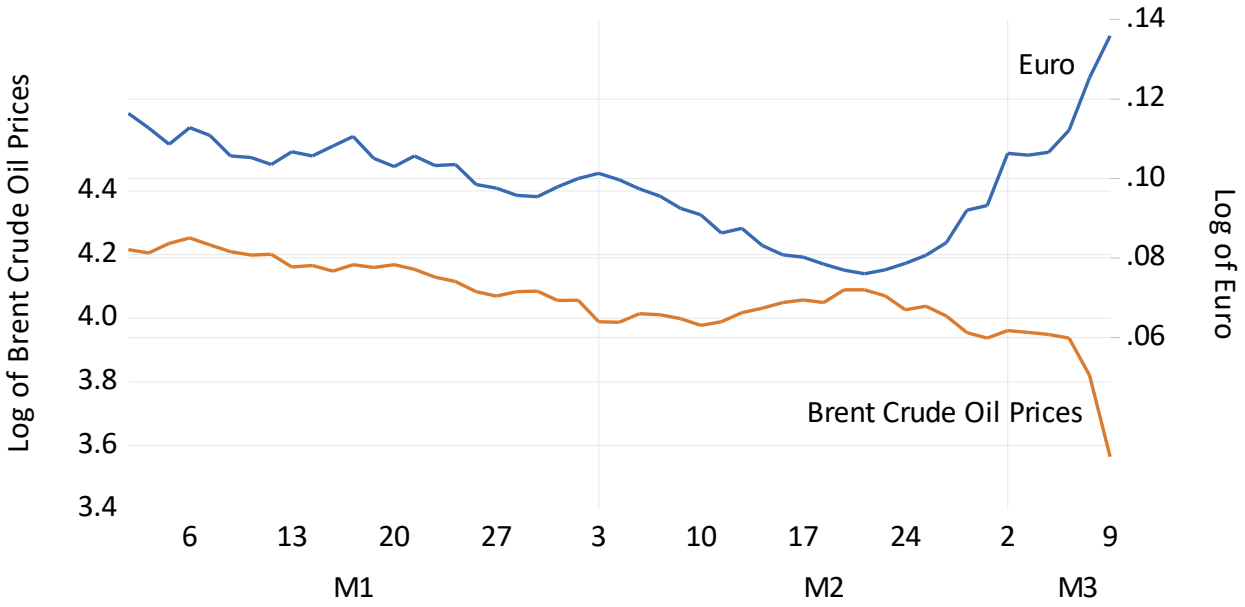

Figure 1. The Value of the Euro and Brent crude Oil Prices, January – March 2020.
Source: Datastream database.

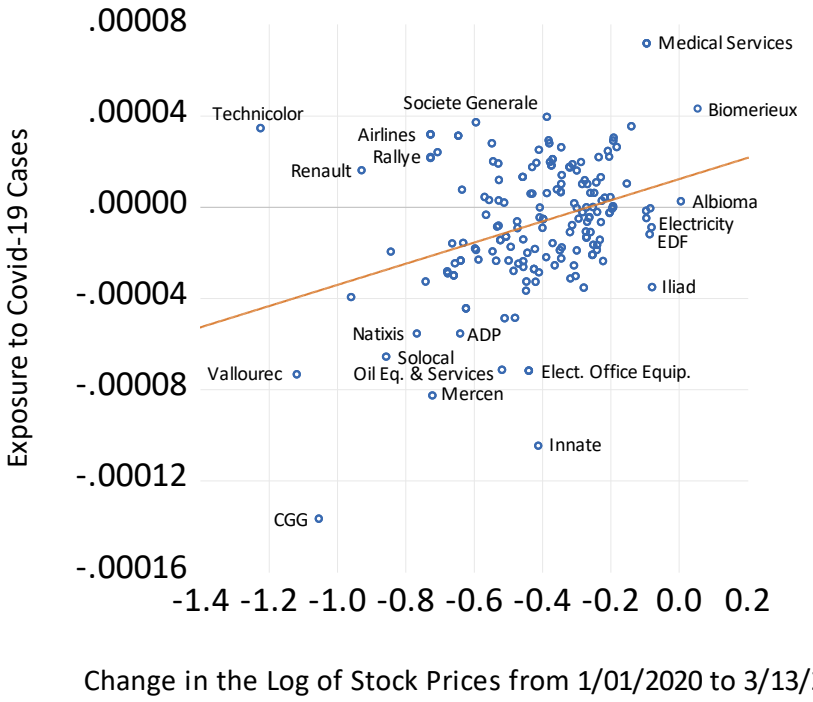

Figure 2. The Relationship between Asset's Exposure to Covid Cases and their Performance between 1 January 2020 and 1/20/2021.

Note: The figure presents the scatter plot and the regression line from a regression of 174 firms and portfolios' exposure to news of contemporaneous Covid-19 cases on their actual returns over the 1 January 2020 to 1 January 2021 period. Assets' exposures to news of contemporaneous cases on the vertical axis come from a regression of daily returns on the 174 firms on the contemporaneous number of new cases, the change in the euro/dollar nominal exchange rate, the return on the aggregate French stock market, the return on the world stock market, the change in the log of the spot price for Brent crude oil, and Altavilla et al's (2019) measures of the changes in 2-year French sovereign yields driven by European Central Bank press conferences, The sample period for the regression using asset returns as the regressand extends from 1 January 2020 to 13 March 2020. There are 5,216 observations.

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