FAKE NEWS AND TALKING UP THE MARKET: THE CASE OF THE COMPAGNIE UNIVERSELLE DU CANAL INTEROCÉANIQUE DE PANAMA IN 1888

Miguel Ortiz-Serrano, Germán Forero-Laverde

ESKA | « Entreprises et histoire »

2020/4 n° 101 | pages 27 à 43

ISSN 1161-2770
ISBN 9782747231220

FAKE NEWS AND TALKING UP THE MARKET: THE CASE OF THE COMPAGNIE UNIVERSELLE DU CANAL INTEROCÉANIQUE DE PANAMA IN 1888

by Miguel ORTIZ-SERRANO
Postdoctoral researcher in economics, University of Sussex

and Germán FORERO-LAVERDE
Professor of finance, Universidad Externado de Colombia

Les fausses nouvelles ne sont pas une invention de la politique contemporaine. Bien au contraire, elles sont depuis longtemps un outil d'influence de certains dirigeants d'entreprise ou hommes politiques. C'est ainsi que l'entrepreneur Ferdinand de Lesseps a multiplié les chèques aux journalistes et aux directeurs de journaux de 1880 à 1888 pour attirer de nouveaux investisseurs vers la compagnie chargée de construire le Canal de Panama qui était déjà en pleine crise. Cette initiative a-t-elle réussi ? La direction est-elle parvenue à faire remonter le cours des titres, au moins de manière à garantir la survie de l'entreprise ?

INTRODUCTION

The media have played an essential role in shaping public opinion and affecting market performance during many economic and political events throughout the years. This was evident during the 2016 presidential elections in the US where diverse news outlets, such as Fox News and Breitbart News, played an essential role in Donald Trump's ascent to the presidency. A feature of media behaviour at the time of the election, and that has survived until today, is that some of the information they disseminate can be labelled as "fake news": misinformation with no foundation on reality.

The media's effect on the population's perception of events generates incentives for governments and private agents to try to control their editorial line. Regarding the impact of public institutions on the media, Simeon Djankov *et alii* (2003)[1] analysed the economic interests around state-media ownership, generally associated with less freedom and worse social outcomes. Similarly,

[1] S. Djankov, C. McLiesh, T. Nenova, and A. Shleifer, "Who owns the media?", *The Journal of Law and Economics*, vol. 46, n° 2, 2003, p. 341-382.

Scott Gehlbach and Konstantin Sonin (2014)[2], when evaluating media bias in post-communist Russia, found two factors affecting media freedom: the nature of government − its mobilisation to shape public opinion in society − and the size of the advertising market − which may respond to government needs-.

Private ownership may also harm press freedom if control is used to distort the media's editorial line. In this case, newspapers and TV stations might end up providing biased information in response to the interests of private agents. Italy's Silvio Berlusconi used his private TV channel to influence voters' preferences before seizing power in 2001[3]. David P. Baron (2006)[4] demonstrates that bias remains, even in competitive markets with low ownership concentration, if journalists prioritise their interests, or if newspapers receive pressure from lobbyists.

Managers, investors, and consumers adapt their expectations based on information appearing in the media. Thus, controlling different information channels − their tone and scope − can affect firm value. Scholars have paid growing attention to this relationship since Alexander Dyck and Luigi Zingales (2002)[5] studied how the editorial line of media impinged on managers decisions.

The news may also play an important role in revealing insider trading activities. Lili Dai *et alii* (2015)[6] show that the growth of media coverage of companies reduces the profitability of their equity and improves corporate governance. Devora Peña-Martel *et alii* (2018)[7] confirm the view that larger volumes of news and coverage enhance firm management in Spain. The media also play a role in disseminating the firm's financial information, mitigating the conflict of interest between large and small shareholders.

Some authors have studied the relationship between media coverage and stock markets behaviour. For example, research by Diego Garcia (2013)[8] found that coverage is a good predictor of daily stock returns only during economic recessions. In contrast, in periods of economic growth, this effect turns out to be much lower. Thus, agents may react irrationally to media coverage during periods of financial distress (Robert Shiller, 2000 & 2015)[9] since outlets may be more interested in capturing public attention than in offering reliable and concise information. In line with this, Paul C. Tetlock (2007)[10] investigates news content and its effect on investors' behaviour, finding that persistent pessimistic tone of the media predicts a negative trend of returns in the short term, while the effect weakens in the long run.

The effect of the news on stock prices, however, may be time-varying. This might be the case for the media under the British railway mania when news promoting massive

[2] S. Gehlbach, K. Sonin, "Government control of the media", *Journal of Public Economics*, vol. 118, 2014, p. 163-171.

[3] R. Durante, B. Knight, "Partisan Control, Media Bias, and Viewer Responses: Evidence from Berlusconi's Italy", *Journal of the European Economic Association*, vol. 10, n° 3, 2012, p. 451-481.

[4] D. P. Baron, "Persistent Media Bias", *Journal of Public Economics*, vol. 90, n° 1-2, 2006, p. 1-36.

[5] A. Dyck, L. Zingales, "The Corporate Governance Role of the Media", in *The Right to Tell: The Role of Mass Media in Economic Development*, Washington, DC, The World Bank, 2002, p. 107-137.

[6] L. Dai, J. T. Parwada, B. Zhang, "The Governance Effect of the Media's News Dissemination Role: Evidence from Insider Trading", *Journal of Accounting Research*, vol. 53, n° 2, 2015, p. 331-366.

[7] D. Peña-Martel, J. Pérez-Alemán, D. J. Santana-Martín, "The Role of the Media in Creating Earnings Informativeness: Evidence from Spain", *BRQ Business Research Quarterly*, vol. 21, n° 3, 2018, p. 168-179.

[8] D. Garcia, "Sentiment during Recessions", *The Journal of Finance*, vol. 68, n° 3, 2013, p. 1267-1300.

[9] R. J. Shiller, "Irrational exuberance", *Philosophy and Public Policy Quarterly*, vol. 20, n° 1, 2000, p. 18-23; R. J. Shiller, *Irrational Exuberance. Revised and expanded third edition*, Princeton, Princeton University Press, 2015.

[10] P. C. Tetlock, "Giving Content to Investor Sentiment: The Role of Media in the Stock Market", *The Journal of Finance*, vol. 62, n° 3, 2007, p. 1139-1168.

investments in railway companies seem to have little effect on stock prices, neither before nor after the crash (Gareth Campbell *et al*., 2012)[11]. In that vein, John D. Turner *et al*. (2018)[12] found that investors began to pay attention to the media after the 1840s, coinciding with a progressive decrease in the concentration of media ownership. Vincent Bignon and Antonio Miscio (2010)[13] found that newspapers' directors in early twentieth century France examined their audience and acted accordingly, by promoting investments in some firms specifically. This choice seems not to be arbitrary, due to the high correlation between media and financial variables, which indicates that investors valued the information about the Paris Stock Market provided by newspapers.

The goal of this paper is twofold. On the one hand, we engage with the literature that studies the effect that media coverage and the tone of the news on a company may have on its stock price. On the other hand, we contribute to the literature on the time-varying effect of media coverage in stock prices by exploring whether news coverage was relevant to the stock market behaviour in the late nineteenth century. To do so, we cover a historical episode during 1888, in which the managers of the Compagnie Universelle du Canal Interocéanique de Panama paid journalists and newspaper editors to produce positive fake news about the Panama Company in an attempt to attract investors to a forthcoming securities issue. Managers were compelled to pay for coverage because the Panama Company was in a dire financial situation and required a successful issue of securities to permit its ongoing operation. Consequently, the research question driving this research is whether the additional news coverage on the Company and the improved tone in the news between 23 April and 26 June 1888 aided in driving stock prices upward to make the stock more attractive to potential investors.

From a methodological perspective, we contribute by expanding on the database developed by Miguel Ortiz-Serrano (2019)[14] to include variables on newspaper coverage and tone of the news on the Panama Company. We survey four different newspapers that, according to the evidence, received payments to increase and improve coverage by publishing fake news. It is noteworthy that we do not aim to survey the overall attitude of the whole French press towards the Compagnie but rather to explore the role biased newspapers played in the evolution of the stock´s price during a short period. Still, our reviewed papers reflect the venal press' position of unjustified optimism regarding the Company.

Furthermore, we use a narrative approach to describe the motivation behind the payments. We include an analysis of the return and volatility in the price of the Compagnie's stock to support our choice of dates for the study. Subsequently, we show that the returns for the Company´s shares and bonds were highly correlated and that their correlations increased during the fake-news period. Then we perform a differences-in-means analysis to show that both coverage and tone improved in the period where payments increased. We use OLS and logit regression models to identify correlations between coverage, tone, and the growth rate of the Compagnie's stock price. We find there is a change in the volume and tone of coverage between the date the issue was approved (23 April 1888) and the date of

[11] G. Campbell, J. D. Turner, C. B. Walker, "The Role of the Media in a Bubble", *Explorations in Economic History*, vol. 49, n° 4, 2012, p. 461-481.

[12] J. D. Turner, Y. Qing, C. B. Walker, "Media Coverage and Stock Returns on the London Stock Exchange, 1825-1870", *Review of Finance*, vol. 22, n° 4, 2018, p. 1605-1629.

[13] V. Bignon, A. Miscio, "Media Bias in Financial Newspapers: Evidence From Early Twentieth-century France", *European Review of Economic History*, vol. 14, n° 3, 2010, p. 383-432.

[14] M. A. Ortiz-Serrano, "Political connections and stock returns: evidence from the Boulangist campaign, 1888–1889", *Financial History Review*, vol. 25, n° 3, 2018, p. 323-356.

issue of the *obligations* à *lots* (26 June 1888). Additionally, we identify that increased coverage and tone have a negative and statistically significant effect on the return of the stock and reduce the probability of observing contemporaneous positive returns. These results are consistent with those obtained by Lili Dai *et al*. (2013)[15]. Still, we posit that, in our case, the mechanism may run either through operations by insiders who were privy to the Compagnie's weak financial position or through a lack of investor confidence on the news being published.

1. HISTORICAL FRAMEWORK

1.1. The early years of the Panama Company

When the Compagnie Universelle Interocéanique de Panama was constituted in 1880 by issuing its first trench of securities[16], its shareholders were assured that a canal merging the Atlantic and the Pacific Ocean would be operational in 1888, reporting much larger benefits than the Canal of Suez[17]. The project was conceived to be a technological revolution dropping global transport costs and enhancing international trade. The firm materialised definitively in 1881 under the command of Ferdinand de Lesseps, with an initial capital of 300 million francs divided into 600 000 shares of 500 francs. Table 1 shows that a variety of investors shared the property of the company with different levels of exposure.

Table 1: Number of investors in the Panama Company by number of shares in the portfolio in 1881

Number of investors	Number of shares acquired
80 839	1 to 5
19 143	6 to 20
3 208	21 to 50
554	51 to 100
347	101 to 200
142	201 to 300
29	301 to 400
37	401 to 500
7	501 to 600
12	601 to 700
2	701 to 800
3	801 to 900
8	901 to 1000
14	1000 or more

Source: *Bulletin du Canal Interocéanique*, 1881, Archives BNP Paribas 73AH/397

[15] L. Dai *et alii*, "The Governance Effect of the Media's News Dissemination Role", *art. cit.*

[16] The plan to develop such ambitious project materialised one year before, during the congress of the Société de Géographie de Paris.

[17] M. A. Ortiz-Serrano, *An Analysis of the Non-economic Forces Affecting the Paris Stock Market During the Late 19th century,* doctoral dissertation in economic history, Universidad Carlos III de Madrid, 2019, p. 82-83. The firm's expectations were extremely optimistic. Apparently, the Panama enterprise would soon be much profitable than that of Suez and would provide much higher dividends in a shorter period of time.

We observe a prevalence of small shareholders, which goes in line with Jean Bouvier[18]. The board members were close friends and relatives of Ferdinand de Lesseps. In contrast, bankers and influential personalities were, since the early times of the enterprise, reluctant to invest in the Panama Company or be part of the board as they doubted the viability and success of the works. This should have warned small shareholders about the potential risks of investing in the Compagnie. However, de Lesseps managed to convince some members of the French *Haute Banque*, to guarantee the first and subsequent issues of the Panama Company's securities. Albeit they formed a "syndicat" to cover the expenses derived from the issue, investors soon recovered their investments plus interests[19]. Moreover, the banking syndicat would underwrite the issue of these financial assets, obtaining significant fees from each operation[20]. The Compagnie's management, given de Lesseps' reputation as a businessman, expected the support of the leading private financial institutions to increase the confidence of investors in the project.

After a failed securities issue in 1879, de Lesseps began paying newspaper editors and journalists to obtain favourable treatment, better and broader coverage, and to avoid future failures in the market. By 1880, the advertising expenses of the Compagnie were of 1 575 371 francs, an abnormal amount for an ordinary bonds issue[21]. Over the years, this practice became commonplace, and newspapers became an instrument to publish false positive information about the accomplishments and financial health of the Company.

Regarding technical issues, a first discussion was whether the Company should build a sea-level or a sluice-gate canal, where the former was more expensive than the latter. De Lesseps chose a sea-level channel as the one made in Egypt[22]. Management expected the technical staff to deal with all the particularities and difficulties associated with geographical and weather conditions in Panama: a rugged terrain with varying altitudes (depicted in Figure 1), an impregnable mountain range called the Culebra Massif, and pervasive unsanitary conditions that brought upon workers diseases such as cholera, malaria, and yellow fever. According to Claude Chastel (1992)[23], between 5 600 and 22 000 men died at the works in the period 1881-1889. These elements compounded with a lack of planning and inappropriate budgeting reflected in the skyrocketing costs. In 1881 the company had to purchase the Panama Railroad Company, which left the project strapped for cash once again[24]. This led the engineering firm Couvreux & Hersent to abandon the project in 1882. It was only by 1887 that De Lesseps chose to change the design for the canal from a sea-level to a sluice-gate project which was more appropriate to the geographical conditions. However, the course change was too-little-too-late for the firm.

[18] J. Bouvier, *Les deux scandales de Panama*, Paris, Julliard, 1964, p. 48-49.

[19] *Ibid*., p. 47-57.

[20] J.-Y. Mollier, *Le scandale de Panama*, Paris, Fayard, 2014.

[21] M. Vallé, *Rapport Général, Enquête de Panama*, 1893, p. 356-358. Bibliothèque nationale de France (site Richelieu) (BnF).

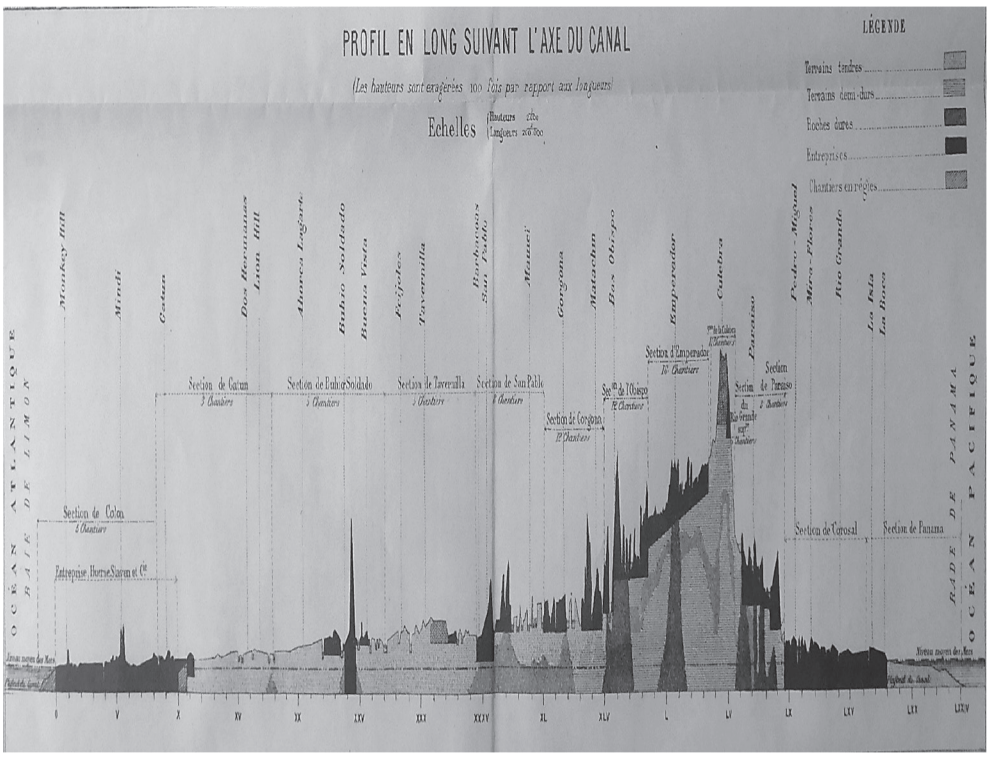
[22] The reasons for de Lesseps to reject a sluice-gate canal remain unknown. He might have wanted to demonstrate that the enterprise of Suez (a sea-level canal) was perfectly feasible in Panama, so his reputation would increase substantially with a last ambitious project. Otherwise, he may have realised the impossibility of a sea-level canal before 1887, though he could consider the public recognition of failure to be too costly to his image, and thus refused any modification.

[23] C. Chastel, *Histoire des virus : de la variole au sida*, Paris, Boubée, 1992.

[24] G. Cavelier, *Centenario de Panamá. Una historia de la separación de Colombia en 1903*, Bogota, Universidad Externado de Colombia, Facultad de Finanzas, Gobierno y Relaciones Internacionales, 2003.

Figure 1: Working sections at the isthmus of Panama, divided geographically

The Culebra massif was the main obstacle for the workers. The unexpected volume of hard rocks difficulted digging, building dykes, and transporting the excavated material. De Lesseps and the technical commission underestimated the complications that could arise in the project.



Source: Archives BNP Paribas, 73AH/397

1.2. The economic collapse and the role of the press: 1887-1889

After the departure of Couvreux and Hersent from the isthmus in 1882, the Compagnie divided the project between different firms, which worked in separated small sub-sections (trenches). The project had suffered substantial delays, and there was no significant progress in the excavations. These delays increased the financial difficulties and contributed to a generalised liquidity shortage. From 7 September 1882 to 14 March 1888, the firm issued six sets of securities – bonds and stocks –, worth of 780 966 000 francs which, with the 300 million francs of the first issue of 1880, clearly surpassed the initial prospects[25].

In 1886, two years before the definitive crash, the Compagnie attempted to issue a new set of bonds, known as the *obligations à lots*, or lottery-bonds. De Lesseps thought that this type of product, commonly used to attract new investors because of their potential additional profits, was to provide the necessary funding to finalise the enterprise. To issue

[25] J. Bouvier, *Les deux scandales du Panama, op. cit.*, p. 81.

these titles, the firm required governmental approval, so the French government sent the officer Rousseau (*l'expert Rousseau*) to the isthmus. According to the officer, between 1881 and 1886, the Company only extracted 6,15 % of the expected 1 990 000 m³ of land at the Culebra trench. The exceptionally little progress made at the isthmus led the expert Rousseau to conclude that the project would never be finalised without governmental intervention, so he recommended French government to support the enterprise economically, "on the interest of the nation"[26]. The parliamentary commission rejected the proposal despite de Lesseps' pressure on some politicians[27], so the Compagnie issued a set of ordinary bonds, which only alleviated the situation partially.

The financial problems, however, did not stop growing, making the Compagnie's position desperate. Numerous economic experts, such as Paul Leroy-Beaulieu, warned about the viability of the firm three years before the crash, which led to the payments so that journals would publish false information to avoid a massive run of investors[28]. Whereas de Lesseps continuously assured that the financial situation was good, and the drop in the price of its shares was attributed to "the enemies of the enterprise"[29], shareholders were not as convinced. The syndicate of shareholders and bondholders was reluctant to accept de Lesseps' argument and its members were, generally, worried about the crucial financial health of the firm[30]. While they shared the belief that the Compagnie had been the object of numerous speculative attacks, they wanted to find an explanation to the continuous depreciation of the firm's assets. During their bimonthly assembly in November 1887, they estimated the liabilities of the Compagnie to be about one billion francs by July 1887. The use given to these liabilities (which came from the successive issues between 1881 and 1887) is decomposed in Table 2.

Table 2: Use of the funds of the Panama Company in francs. July 1887

Expenses from the first issue; research costs, etc.	145 000 000
Material costs	154 000 000
Shares of the Panama Railway Company	93 878 000
Taxes, fees, etc.	50 267 000
Interests on the capital and loans	188 000 000
Administration expenses	10 000 000
Working costs at the isthmus	250 000 000
Available funds	138 479 327
Total Expenses	**1 029 624 327**

Source: Syndicat d'actionnaires et obligataires…, 15 November 1887, BnF, 4-PK-201

The data show the high costs in which the firm had incurred by late 1887, three times more than the amount alleged by the Compagnie on its *Bulletin*. Moreover, the rapport Rousseau[31] revealed that the project would need more than twelve years to be

[26] R. Courau, *Ferdinand de Lesseps : de l'apothéose de Suez au scandale de Panama,* Paris, Grasset, 1932, p. 171.

[27] J. Bouvier, *Les deux scandales de Panama*, *op. cit*., p. 74-75.

[28] J.-Y. Mollier, *Le scandale de Panama*, *op. cit.*

[29] *Bulletin du Canal Interocéanique*, 1885. Archives BNP Paribas, 73AH/398.

[30] Syndicat d'actionnaires et obligataires de la Compagnie du Canal Interocéanique de Panama, 15 November 1887, BnF, 4-PK-201.

[31] A. Rousseau, *Rapport présenté au ministre des Travaux publics par Armand Rousseau sur sa mission à Panama*, *Canal de Panama*, Paris, May et Motteroz, 1886.

finished, two additional billion in funding, and still, profitability was not guaranteed. Besides, if we take the information from the *Bulletin of the Compagnie Interocéanique* of 1885 as correct, the total income accumulated by the firm was worth 36 million francs. We do not have access to the *Bulletin* of the years 1886 and 1888, though it is difficult to believe that revenues grew enough to cover such significant expenses. Nevertheless, the syndicate of shareholders and bondholders (Syndicat d'actionnaires et obligataires de la Compagnie du Canal Interocéanique de Panama) published a bulletin in which they expressed their concerns about the financial problems of the Compagnie and the viability of the project[32]. The information and ideas expressed by the Syndicat reflected the growing divergence of opinions and interests between small and big investors. While they attributed the weak economic performance of the Compagnie to the multiple attacks received by journalists, politicians, and speculators, they complained about the lack of transparency of the board of directors. In their own words, the progressive depreciation of the company's stocks and bonds was a symptom that something was not working properly. Meanwhile, de Lesseps accused members of this organisation of having sold assets of the Compagnie, which explained its poor performance at the Paris Stock Exchange. The Syndicat responded by accusing the board and its relatives of financial speculation with the company's assets, by arguing that the syndicate members had not sold their assets yet, and their only interest was to finalise the project to obtain profits from the opening of the canal. These tensions continued during the year 1888 and increased after the failed issue of 26 June. The days around the bankruptcy of December 1888, they published a new *Bulletin*, analysing the situation. Their tone was even more pessimistic; though they still hoped that the project could be successfully finalised, they remarked the necessity to create a new organisation able to find capital and supervised by the French government on the interest of the nation. To them, there was little alternative for the Compagnie except for a total reorganisation in both management and financial terms, to regain investor confidence. In their own words: "Is the canal feasible, yes, or no? How much will it finally cost? […] Regarding the Compagnie, its role is finished; they cannot end the works. It is not time to judge their management, though it is difficult to believe that the Compagnie can attract more investors. We expect the firm to be controlled by a new board composed of experts who know how to end the project. This is the only way of attracting more capital […]".

Given the growing pressures from its bond and stockholders, de Lesseps recognised the impossibility of a sea-level canal and, in 1888, appointed the famous engineer Gustave Eiffel to design a canal of locks over the same route. He proposed once again the issue of the famous *bons à lots*, as the last financial instrument that the Compagnie would use to finance its enterprise. This time around, the firm pressured French political power to obtain the final approval to the new plan. Finally, the commission in charge of studying the new request green-lighted the new issue on 23 April 1888, and the final approval was given by the French Senate on 8 June the same year. The issue was to take place on 26 June, and the Compagnie used its whole influence on French newspapers to publicise this financial product and attract investors massively.

Previous research on the Panama Scandal shows that, under the pay-for-coverage scheme, papers received abnormally high payments during the first months of 1888 (Pierre-Alexandre Bourson, 2000[33]; Jean Bouvier,

[32] The documents concerning the syndicate can be consulted at the Bibliothèque nationale de France, particularly under the call number 4-PK-201.

[33] P.-A. Bourson, *L'affaire Panama*, Paris, De Vecchi, 2000.

1964[34]; Jean-Yves Mollier, 2014[35]), as bribery to publicise false positive information on the firm's financial health and the upcoming issue of 26 June 1888. This statement is based on the findings of contemporary experts after the crash of the company, who estimated that advertising expenses were always high, and grew exponentially for the June issue[36]. The tone of the articles about the firm's performance at the isthmus and its future became progressively more enthusiastic; however, investors never seemed to be extremely attracted by the project. The advertising expenses are shown in Table 3.

Table 3: Advertising expenses of the Panama Company, 1883-1888 (in francs)

Bonds' advertising	
September 1883	7 290 272, 61
October 1883	9 959 723, 59
25 September 1884	8 312 005, 06
3 August 1886	11 340 132, 48
26 July 1887	7 626 594, 73
14 March 1888	4 998 156, 51
24 June 1888	31 245 435, 55
Various expenses	2 311 832, 54
Stocks' advertising (in total)	54 845 371, 20
Total Expenses	**104 929 524, 27**

Source: *Rapport Vallé, op. cit.*, p. 363

These numbers include all the expenses related to the promotion, advertising and launching of every security issued by the Compagnie. For a firm that always faced liquidity shortages, these expenses were a burden to its financial accounts. The company attempted to offset the delays at the isthmus and its financial problems by promoting aggressive press campaigns and publishing false information in the annual *Bulletin du Canal Interocéanique*. Jean-Yves Mollier (2014) reproduced the amount intended to finance an advertising campaign in French newspapers, decomposed from the previous table[37], for the period 1880-1888. We show this information in Table 4, which displays some of these payments. We observe an unequal distribution of money, with divergences in levels. Thus, *Le Figaro* and *Le Petit Journal* seem to have received most of the payments, whereas *Le Petit Parisien* received the lowest amount.

Table 4: Payments to French newspapers, 1880-1888 (accumulated amount in francs)

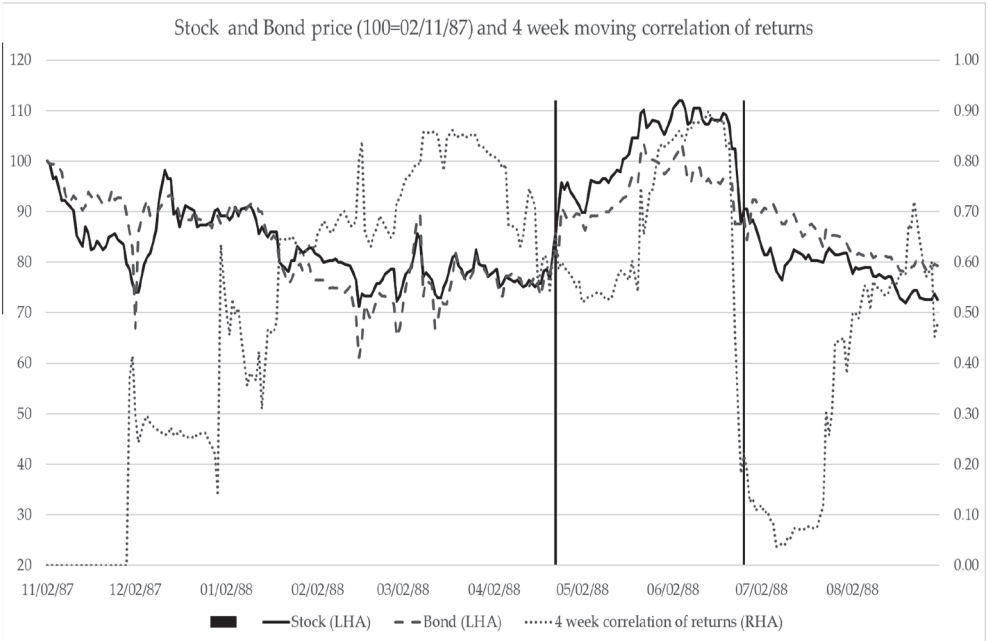
Newspaper's name	*Total amount received*
Le Gaulois	189 000
La France	255 000
Le Figaro	408 100
Le Télégraphe	194 049
Le Temps	119 000
Le Petit Journal	560 105
Le Petit Parisien	88 000

Source: J.-Y. Mollier, *Le scandale de Panama, op. cit.*, p. 7696, Kindle edition

The tone of French newspapers exhibited an excessive optimism about the upcoming

[34] J. Bouvier, *Les deux scandales de Panama, op. cit.*
[35] J.-Y. Mollier, *Le scandale de Panama*, *op. cit.*
[36] M. Vallé, *Rapport Général, Enquête de Panama*, *op. cit.*
[37] This information appeared in the *Rapport Flory*, an annex document to the *Rapport Vallé, op. cit.*

Figure 2: Prices for the bond and stock issued by the Compagnie: $ week rolling correlation coefficient for returns. 1 November 1887-31 August 1888



Source: Own elaboration from the data of the *Bulletin de la Cote (Compagnie des agents de change de Paris)*, Digitalisation on Gallica.

issue of 26 June 1888. Miguel Ortiz-Serrano (2019)[38] provides a series of paragraphs promoting massive participation in the issue.

Le Gaulois, 20 June 1888: […] "The news regarding the subscription of the lottery bonds is excellent. It is true that the bearers of titles from the company of Suez will use their right of preference during the emission […]".

Le Temps, 16 June 1888: "[…] We have excellent news from the lottery bonds. We remind bearers of titles of Suez and Panama that they have preference for the emission of the next 26 June."

Le Figaro, 23 June 1888: "[…] We know that the subscriptions for the upcoming lottery bonds of the Panama Company reach already an impressive amount. Why? The title is completely guaranteed, which is complemented with the expectation of earning extra profit after the lottery […]".

The issue was, however, an absolute failure. One day before *Le Figaro* published the article previously mentioned, the main stock of the Panama Company fell dramatically. Sales continued during the following days, and the issue of lottery bonds was barely subscribed. De Lesseps attributed these drops to the multiple attacks from the enemies of the Compagnie, interested in speculating with its assets and making the enterprise fail.

Figure 2 shows the price for the stock and the 5 % bond[39] issued by the Compagnie normalised to 100 on 2 November 1887.

[38] M. A. Ortiz-Serrano, *An Analysis of the Non-economic Forces*, *op. cit.*

[39] Data on bonds were extracted from the *Bulletin de la Cote*, as in the case of stocks.`

Additionally, we show the 4-week rolling correlation coefficient of returns for both securities. We identify with vertical bars the start and end date of our research period. A first relevant finding is that the prices of both assets increase significantly with the approval of the new issue on 23 April 1888. While we identify that co-movement between the two assets had been consistently rising since the beginning of the series, it peaked on early July 1888, just before the issue of *bons à lots*. Another interesting point is that, while the normalised prices of stocks and bonds were very close at the beginning of our period of study (85,61 and 82,17 respectively), the series deviate strongly throughout the period. Just before the date of the new issue, on 23 June 1888, the difference between the price for stocks (102,45) and bonds (87,58) peaks. As the issue failed spectacularly, the price of the stock drops far more than that of the bond, driving the correlation to the minimum values in the whole series by early July.

2. DATA COLLECTION AND STYLISED FACTS

We expanded the time length of the database built by Miguel Ortiz-Serrano (2018), which includes 73 liquid firms listed at the Paris Stock Exchange. By adding daily data for four additional months, we incorporated data from 1 November 1887 to 16 February 1888, to enable a sufficiently long-time span before 23 April, when the technical parliamentary commission gave its final approval to the issue of the *bons à lots*. Table 5 provides a list of the variables included in the database, which contains economic indicators such as market capitalisation or dividend yields, among others.

Table 5: Description of the main variables used.

Price	Closing prices for each firm in the database. We fill missing trading days with the last available price.
Return	The daily percentage of stock price
Market Capitalisation	The price of the stock multiplied by the number of shares outstanding.
Market Return	Market return indices weighted and unweighted by market capitalisation.
Book-to-Market Ratio	The ratio between the book value (common shareholders' equity) and market value (market capitalisation).

Own construction from primary sources: Archives du Crédit Agricole, Gallica, and CAEF.

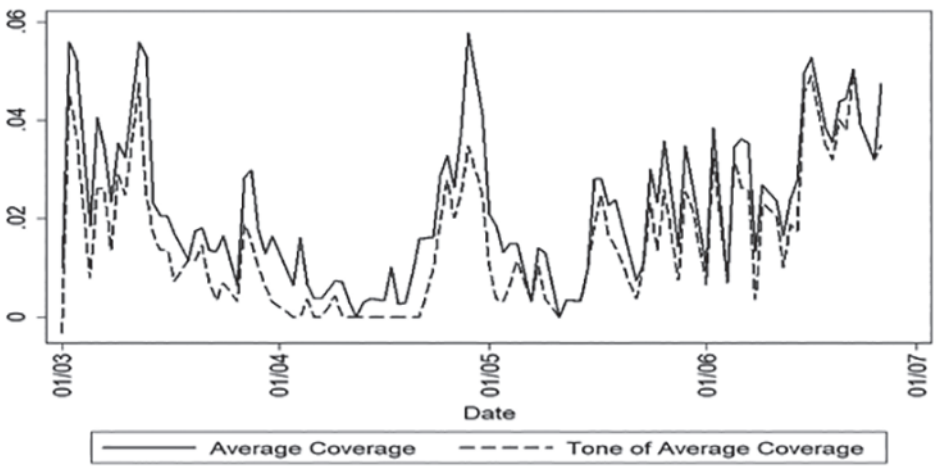
The internal data of the firms listed at the Paris Stock Market come from the Archives du Crédit Agricole and the Archives of the French Ministry of Finance (CAEF). Data on daily prices were extracted from Gallica, the online repository of the National Library of France (BnF)[40]. We collected data from four prominent French newspapers to test whether the press campaign of April-June 1888 affected the value of the Panama Company. We compile daily information from *Le Petit Journal*, *Le Temps*, *Le Figaro* and *Le Gaulois*, based on the sums of money they received the weeks before the emission (Jean Bouvier, 1964; Pierre-Alexandre Bourson, 2000[41]). One could be concerned about the study of the effect that the financial press had on investors. Vincent Bignon and Antonio Miscio[42] explored this issue and focused their research on financial newspapers. They argue that readers of the

[40] Cf. https://gallica.bnf.fr/ark:/12148/cb32715573v/date.

[41] J. Bouvier, *Les deux scandales de Panama, op. cit.*, p. 101-104; P.-A. Bourson, *L'Affaire de Panama*, *op. cit.*, p. 62.

[42] V. Bignon, A. Miscio, "Media Bias in Financial Newspapers", *art. cit.*

Figure 3: Evolution of the average coverage and average tone in the news



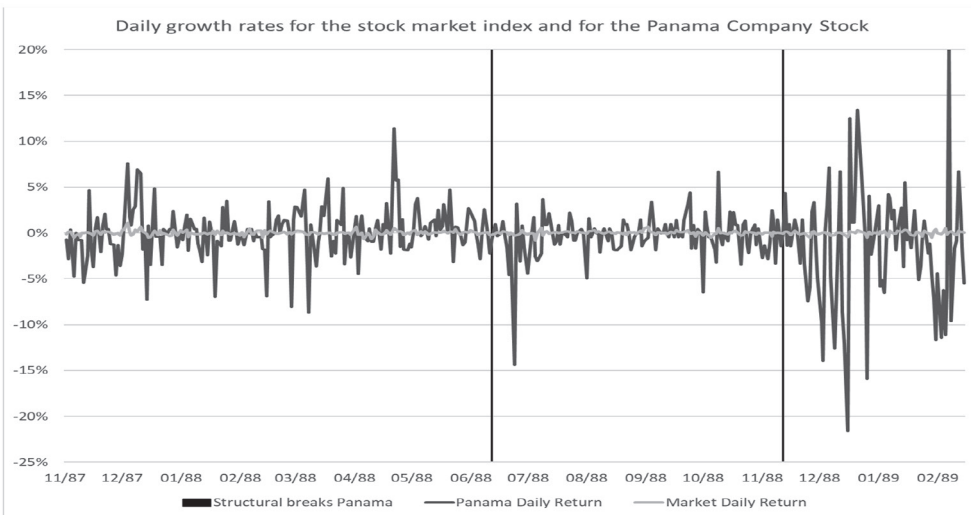
Source: Own elaboration from *Retronews* newspapers' information. Coverage is measured as the percentage of the total newspaper coverage devoted to news on the Panama Company. Tone measures whether there were more positive or negative news on the company and then expresses the net number of paragraphs as a percentage of the total newspaper.

financial press identified its information as accurate, likely to affect the performance of firms. While the historical sources pointed out above provide an in-depth explanation of the role of the venal press in the corruption network involving the Panama Company, we have no evidence on the attitude of financial newspapers. Moreover, the aim of the present study is not to provide an extensive analysis of the French press overall, but to examine the effect of false news on the value of the Panama Company. Newspapers published reports after receiving abnormal payments to promote the massive acquisition of the financial assets of the Compagnie, and that justifies the choice of these four journals. As pointed out in the previous section, the aim was to display a positive view about the Compagnie and exhibit an optimistic tone regarding the advances at the isthmus. Last, these newspapers promoted the participation of investors in the issue of lottery bonds. It is unlikely to know the total amount of these payments, though the information exposed previously allows us to infer that they were significant.

We collected information from 1 March to 1 September 1888, building two variables: coverage and tone. The first refers to the number of paragraphs speaking of the Panama Company over the total number of paragraphs, averaged between the four newspapers. We excluded all advertisements except those related to the Compagnie, as the number of ads encouraging people to partake in the upcoming issue was considerable. We calculated tone, as the difference between "positive" and "negative" paragraphs on the company over the total number of paragraphs in the newspaper. We then averaged this variable across the four journals in our sample[43]. Figure 3 presents the evolution of the average coverage and the average tone of news. The chart shows that

43 $\frac{Positive - Negative}{Total\ number\ of\ paragraphs}$

Figure 4: Daily returns for the Market Portfolio and the Panama Company Stock



Source: Own elaboration from the data of the *Bulletin de la Cote*; Gallica

the variable tone tracks coverage in almost all the cases as coverage on the company was mostly positive.

3. EMPIRICAL FRAMEWORK AND RESULTS

3.1. Returns and breaks in the series

As seen in Figure 4, the Panama Company stock is much more volatile than the market return.

The full sample standard deviation for the daily return in the Panama Company's stock (3,71 %) is 17 times larger than the same measure for the market return (0,22 %). However, this does not need to be stable in time, as a well-known result in the finance literature is that stock returns present volatility clustering (John Y. Campbell, Andrew W. Lo, A. Craig Mackinlay, 1997[44]; Germán Forero-Laverde, 2019[45]). Thus, following Jushan Bai and Pierre Perron (1998, 2003)[46], we tested for structural breaks of unknown dates both in the returns and volatility series. Regarding returns, we found evidence for two breaks on 13 June 1888 and on 13 November 1888. Regarding volatility, we fitted a GARCH (1,1) model as in Robert F. Engle and Tim Bollerslev (1986)[47]

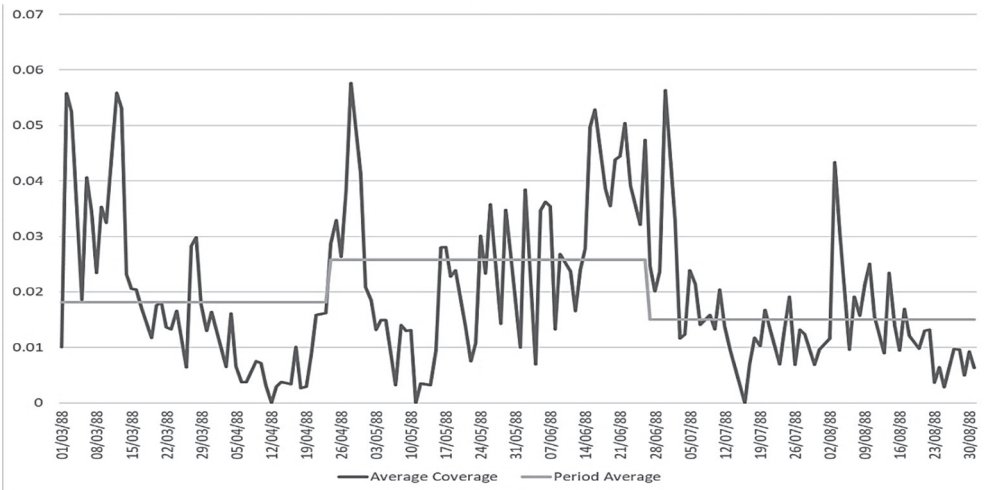
[44] J. Y. Campbell, A. W. Lo and A. C. MacKinlay, *The Econometrics of Financial Markets*, Princeton, Princeton University Press, 1997.

[45] G. Forero-Laverde, "Stock Market Co-movement, Domestic Economic Policy, and the Macroeconomic Trilemma: The Case of the UK (1922-2016)", *Financial History Review*, vol. 26, n° 3, 2019, p. 295-320.

[46] J. Bai, P. Perron, "Computation and Analysis of Multiple Structural Change Models", *Journal of Applied Econometrics*, vol. 18, n° 1, 2003, p. 1-22; J. Bai, P. Perron, "Estimating and Testing Linear Models with Multiple Structural Changes", *Econometrica*, vol. 66, n° 1, 1998, p. 47-78.

[47] R. F. Engle, T. Bollerslev, "Modelling the Persistence of Conditional Variances", *Econometric Reviews*, vol. 5, n° 1, 1986, p. 1-50.

Figure 5: Average coverage, before and after 23 April 1888



Source: Own elaboration from *Retronews* newspapers' information

and Robert F. Engle (2001)[48] and found two structural breaks in this series on 12 July 1888 and 13 November 1888. These findings warrant our choice for the period of study between 1 March and 26 June 1888 as the series does not contain structural breaks in the period. While both series present a break in mid-June, it is well established in the literature that the date for the break is subject to uncertainty. The date of the issue of *obligations* à *lots* (26 June) falls within the confidence intervals for the June structural break in both series. Furthermore, from a historical perspective, it is the most likely date for the break to have occurred.

3.2. Difference-in-mean tests for coverage and tone

To study whether coverage and tone changed with the technical approval of the issue taking place on 23 April, we break each series in three distinct samples. The first sample runs from 1 March 1888 until 23 April 1888, the second sample runs from 24 April 1888 and 26 June 1888, and the third sample from 27 June 1888 until the end of the series. We calculate the average for each subsample and show the results in the figure below. Figure 5 shows that, as expected, coverage and tone were at their highest before the issue. We calculated the averages by sample and observed that while news related to Panama covered 1,8 % of the total surface of the newspapers before 23 April 1888, coverage grew up to 2,5 % between 23 April and 26 June 1888. After performing a one-sided differences-in-means T-test, we confirmed that these two averages are statistically different, with 99 % confidence. We found similar results for the tone series. Both results are robust to excluding *Le Petit Journal*, *i.e.* the newspaper with the highest annual print run. Therefore, it seems that payments increased the coverage of papers regarding the Panama Company. We present the results in the following table:

[48] R. F. Engle, "GARCH 101: The Use of ARCH/GARCH Models in Applied Econometrics", *Journal of Economic Perspectives*, vol. 15, n° 4, 2001, p. 157-168.

Table 6: Coefficients of the differences in the mean coverage of the Compagnie

	Before 23 April	After 23 April	T-statistic	P-value
Average tone	0,010	0,020	-3,750	0,00
Average Coverage	0,018	0,026	-2,598	0,01
Small newspaper tone	0,010	0,019	-3,223	0,00
Small Newspaper Coverage	0,018	0,026	-2,428	0,01

3.3. The relationship between coverage and returns

To identify whether coverage or tone affects the evolution of the stock's return, we ran OLS regressions of the following form:

$$r_{pan} = \beta_0 + \beta_1 News + \beta_2 News D_{post23} + \beta\theta \quad (1)$$

Where r_{pan} represents the daily return for the Panama Company stock price, news represents any of the four available time-series for tone or coverage, D_{post23} is a dummy variable that takes the value of one every day after 23 April and θ is a matrix of controls. Among the controls, we included day-of-the-week dummies and dummies for the dates in which real news took place. On these dates, we cannot argue for the presence of fake news: 14 March 1888, when the last of the series of the 1886 security was issued; the 23 and 28 of April 1888, when the technical commission evaluated the request for the issue of new securities positively, and when the parliament approved the issue, respectively, 8 June 1888, when the Senate approves the issue definitively, and 26 June, when the issue fails. In the results, we present two different "News" coefficients in each regression.

The coefficient for the series before 23 April corresponds to β_1, while the coefficient for news after 23 April corresponds to $\beta_1 + \beta_2$. As we can see from the table, there is no statistical significance in the coefficient for news before 23 April in any of the models. However, coefficients are negative and statistically significant with 90 % confidence (*) for the news series that include the four newspapers. The fact that results bear no statistical significance for the news series that exclude *Le Petit Journal* suggests that this last newspaper concentrates most of the effect. As we will discuss in the conclusions, this opens up new avenues for further research in which including factors from asset pricing models such as the CAPM (William F. Sharpe, 1964; John Lintner, 1965; Fisher Black, 1972)[49] or Eugene F. Fama and Kenneth R. French (1992)[50] may correct for omitted variables. Additionally, this may aid us in testing whether circulation explains these changes in statistical significance.

[49] W. F. Sharpe, "Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk", *The Journal of Finance*, vol. 19, n° 3, 1964, p. 425-442; J. Lintner, "Security Prices, Risk, and Maximal Gains From Diversification", *The Journal of Finance*, vol. 20, n° 4, 1965, p. 587-615; F. Black, "Capital Market Equilibrium with Restricted Borrowing", *The Journal of Business*, vol 45, n° 3, 1972, p. 444-455.

[50] E. F. Fama, K. R. French, "The Cross Section of Expected Stock Returns", *The Journal of Finance*, vol. 47, n° 2, 1992, p. 427-465.

Table 7: The effects of coverage on returns. Dependent variable: returns of the Panama Company stock

	(1)	(2)	(3)	(4)
Average Coverage Pre 23 April	-0,267			
Average Coverage Post 23 April	-0,415*			
Tone of Average Coverage Pre 23 April		-0,094		
Tone of Average Coverage Post 23 April		-0,419*		
Coverage Small Newspapers Pre 23 April			-0,095	
Coverage Small Newspapers Post 23 April			-0,256	
Tone of Small Newspapers Coverage Pre 23 April				0,063
Tone of Small Newspapers Coverage Post 23 April				-0,249
Constant	0,00	0,00	0,00	0, 00
Day of the week	*YES*	*YES*	*YES*	*YES*
Real news dates controls	*YES*	*YES*	*YES*	*YES*
N	97	97	97	97
Adjusted R^2	0,0165	0,0125	0,0046	0,0065

Coefficients with significance levels p>0,1 %*, p>0,05**, p>0,01*** All standard errors are robust.

The negative coefficient in the regression appears as counterintuitive because, given the efficient market hypothesis, positive news should increase investors' expectations about future cash flows, reduce the perception of risk and consequently push prices upward (Eugene F. Fama, 1965, 1970)[51]. Our results, however, are consistent with those by Lili Dai *et al.* (2013), as discussed in our introduction.

As a robustness test we performed a logit regression to confirm whether, before the issue of 26 June, additional news coverage or an improvement in the tone of coverage changed the probability of observing a positive return. Our findings, which are available upon request, confirm our previous results and show that an improvement of 1 % in coverage reduced the probability of observing a positive return in 5, 23 %. This result is statistically significant, with 95 % confidence. We also find that the relationship between additional coverage and returns disappeared after the issue when payments to the press halted.

We expect this effect to be driven by a case of insider trading, *i.e.* the fact that some investors had privileged information about

[51] E. F. Fama, "The Behaviour of Stock Market Prices", *Journal of Business*, vol. 38, n° 1, 1965, p. 34-105; E. F. Fama, "Efficient Capital Markets: A Review of Theory and Empirical Work", *Journal of Finance*, vol. 25, n° 2, 1970, p. 383-417.

the economic viability of the firm. Therefore, they may have manipulated the market to obtain profits, by massively buying shares of the Panama Company when the parliamentary commission approved the issue and selling them some days before the issue of the *bons à lots*. Finding evidence of insider trading activities is a challenging task for future research due to the lack of information on the agents who were participating in each trade and the number of shares traded in each operation. Nevertheless, this could be a possibility due to the evidence found in the *Bulletin du Syndicat d'actionnaires et obligataires de la Compagnie du Canal Interocéanique de Panama*. As shown in section 1, they had reliable information on the weak financial situation of the Panama Company months before the crash of 26 June 1888, which leads us to think that some investors may have taken this situation as an opportunity to obtain high profits if they acted in advance.

Another possibility is that the bout of positive news compounded with a history of previously failed issues caused a phenomenon of cognitive dissonance in investors. Possibly they preferred to sell their holdings or refrain from buying as the news published in the media did not reflect the company's history. This would make sense if, after 23 April, investors started seeing much more coverage and a much better tone in the news, as suggested by our empirical evidence, without seeing any correspondence with what happened in reality as portrayed in other outlets. A possible way of reading our results is that unanimously positive coverage on the company was ultimately counterproductive as investors mistrusted so many good news suddenly appearing in the media.

CONCLUSIONS

The results shown in the present article shed light on the potential effects that the media coverage and its tone had on the returns of the Panama Company. Management for the Company tried to talk-up-the-market by having additional positive coverage in the media, paying journals to publish fake positive news. To test for their effect, we collected a new dataset from primary sources, which includes information on the average coverage of four prominent French newspapers. We showed that, for the issue of 26 June 1888, the media affected investors' decisions by decreasing returns with the increase in coverage.

The fact that markets appear to have punished the additional news coverage and the improvement in tone with lower-than-expected returns may have two possible explanations for which further research is needed. On the one hand, historical sources such as the *Bulletin du Syndicat d'actionnaires et obligataires de la Compagnie du Canal Interocéanique de Panama* suggest that investors were well-aware of the financial problems of the firm. This implies investors acted rationally and did not trust the information appearing in the media. On the other hand, we think that this could be a case of insider-trading activities, that is, the existence of privileged information that makes big investors manipulate the market to obtain substantial gains from their anticipation to different events.

Therefore, future work should explore these two research lines in two ways. First, by using econometric tools that allow us to infer the existence of causality in our models, *i.e.* coverage and tone cause drops in the returns of the Panama Company. Second, models and new data should permit a better understanding of the underlying forces making investors discount negatively the positive news that appeared in the media. Additional further research is needed to explore why the effect of the news on returns disappears once we exclude *Le Petit Journal* from the database. One possibility is that the effect was driven only by newspapers with ample circulation as they reached a broader audience. Alternatively, we may be facing an omitted variable for which that particular newspaper is proxying and thus including more sophisticated econometric models is warranted.