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Media fabrication of corruption and the quality of the political class: The case of Italy

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ABSTRACT

Since the global financial crisis of 2008, the level of perceived corruption in Italy has risen markedly, diverging significantly from the perceived corruption of other high-income countries and from the corruption as experienced. We propose that newspapers, in order to maximize their profits, have given directed emphasis to episodes of political corruption, which has contributed to the increase in perceived corruption. The consequence has been loss of parliament's credibility and a deterioration in the quality of the Italian political class.

1. Introduction

International surveys have shown that perceived corruption in Italy is significantly higher than in other high-income countries. In the 2019 survey of Transparency International, Italy had a Corruption Perception Index (CPI) score of 5.3 in comparison to 6.9 for France, 8.0 for Germany and of the average score of the European Union of 6.6. Its rank was 51 on the 180 countries included in the survey, being one of the worst of the EU (Table 1) and similar to that of low income countries such as Rwanda, Cabo Verde, Grenada, Santa Lucia and Botswana. Similar indications are obtained from the Special Eurobarometer: Corruption survey of 2020 related to 2019. From this survey, the share of Italians declaring that "corruption is very widespread in their country" is 88 per cent, while it is respectively 70 and 53 for France and Germany.

When however one considers the actual incidence of corruption episodes detected by the same Special Eurobarometer Corruption survey, it is found that this incidence, for Italy, is substantially similar to that of the main European countries. In fact, according to this survey, in 2019, the share of the total respondents who knew of someone who "takes or has taken bribes" was 7 percent, while it was 8 percent for Germany and 16 percent for France (Table 1). Similar indications come from Transparency International's Global Corruption Barometer referring to the same year. ⁴ A panel data estimate in Section 2, where perceived corruption is explained by experienced corruption and other variables, allows us to show that this gap makes Italy an outlier with respect to the other main historical members of European Union.

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¹ The CPI of Transparency International increases with perceived corruption. A zero level means highly corrupt, while 10 means very clean.

² This appears to contrast starkly with Paldam (2021) according to which the degree of corruption is significantly reduced by economic development.

³ See Special Eurobarometer: Corruption, n. 502.

⁴ According to this survey, when asked whether it was necessary to give a bribe to obtain certain public services, 3 percent of the interviewees answered affirmatively in Italy and Germany and 5 percent in France.

Table 1
CPI and Experienced corruption according to International Surveys.

Country	2013	2017	2019
France	22 (16)	23 (16)	23 (16)
Germany	12 (9)	12 (10)	9 (8)
Italy	69 (9)	54 (7)	51 (7)
Spain	40 (11)	42 (10)	30 (11)
United Kingdom	14 (7)	8 (7)	12 (5)

Legend: the first number is the CPI ranking for Transparency International. The second number, the one in brackets, is experienced corruption according to the Eurobarometer survey. Source: Transparency International and, for the terms on brackets, Special Eurobarometer: Corruption.

Corrupt acts are by their nature secretive. Therefore, individuals usually obtain an idea of their consistency and diffusion not based on direct observation, but on information received from third parties, primarily from the media. Therefore, the first question that we address is whether and to what extent newspapers' reports on acts of political corruption have influenced the high level of perceived corruption in Italy and the discrepancy with experienced corruption.

An extensive literature has shown that the control exercised by the media over the political class tends to reduce their corruption. This view, supported by various empirical studies, 5 shows that, where there is no freedom of the press, the degree of political corruption tends to be higher. However, the relationship between the media and information on corruption of public officials, in addition to the freedom of the press, can be conditioned by other factors that can create conditions for media bias.

Media bias occurs when the media *report news in a partial or prejudiced manner*. A large literature has analyzed media bias, distinguishing between 'supply-driven' and 'demand-driven' bias. Several studies have shown that media bias can originate from the supply side. This happens when media owners or their employees find it expedient to influence their customers' beliefs by presenting biased news because of ideological views or external pressures. Other studies trace bias back to the demand side interpreting media organisations as profit maximisers. These studies are rooted in the fact that media consumers have some given preferences or a priori beliefs and are predisposed to accept as accurate any information that confirms their views. Media exploit this to maximize profits. 11

We take demand-driven bias models as a reference to show that Italian newspapers, in correspondence with the sub-prime mortgage crisis and the sovereign debt crisis, i.e. between 2008 and 2012, gave particular emphasis to cases of political corruption in order to curb the pronounced fall in sales and revenues due to the severe recessions that occurred after those crises. This first objective of the paper is supported by an empirical analysis relating to the period 2000–2019, which shows the existence of a link between the number of articles dedicated to cases of political corruption published by the main Italian newspapers and the level of perceived corruption.¹²

It has been shown that the level of perceived corruption affects individual behaviour, in particular voting. ¹³ However, there is evidence that corruption adversely affects not only the demand side, but also the supply side of political arena. In particular, Cavalcanti et al. (2018), referring to the municipal elections in Brazil, find that, when the level of corruption is high, the parties tend to present competent candidates. Conversely, when this level is low and political competition is low, the share of high-quality candidates decreases. Giommoni (2021), on the other hand, taking the Italian municipal elections as a reference, shows that the level of corruption changes the composition of candidates: when corruption is high the representation of tenured politicians rises and that of freshmen correspondingly decreases. ¹⁴

Considering the political supply side, as the aforementioned contributions do, the second objective of this paper is to show through an analytical model that a high level of perceived corruption, caused by media bias - as well as influencing voting choices, by reducing the social status of politicians and increasing the opportunity cost of making political activity, contributes to a deterioration of the quality of the political class. ¹⁵ From the empirical evidence, this describes what happened in Italy in the last fifteen years.

The rest of the paper is divided into four sections. Section 2 highlights the gap in Italy between perceived and experienced corruption. This section also shows that the level of perceived corruption was influenced by the number of articles dedicated by newspapers to cases of political corruption. Section 3 presents an analytical model from which it emerges that, if newspapers aim to maximize profits and readers have a priori beliefs, there may be a media bias and perceived corruption of the political class is higher

⁵ See among others Treisman (2000), Stapenhurst (2000), and Brunetti and Weder (2003).

⁶ See, among others, Alterman (2003).

⁷ See the surveys on this topic by Prat and Strömberg (2013), Sobbrio (2014) and Gentzkow et al. (2014).

⁸ See, among others, Baron (2006), Besley and Prat (2006), Sobbrio (2011), Anderson and McLaren (2012).

⁹ See Baron (2006) and Anderson and McLaren (2012).

¹⁰ See Besley and Prat (2006) and Sobbrio (2011).

¹¹ See Mullainathan and Shleifer (2005), Gentzkow and Shapiro (2006), Chan and Suen (2008) and Strömberg (2001).

¹² See Rizzica and Tonello (2020).

¹³ A large empirical literature has shown that voters punish parties and candidates involved in political scandals. See, among others, Ferraz and Finan (2011), Snyder and Hirano (2012) and Chong et al. (2015).

¹⁴ See Cavalcanti et al. (2018), Giommoni (2021).

¹⁵ Epstein (2000) has studied the quality of the political class from the perspective of who chooses to be a politician.

than actual corruption. Section 4 shows that the occurrence of a situation of this type in Italy has undermined citizens' trust in parliament with negative repercussions on the quality of democratic institutions, in particular on the quality of the political class. The conclusions provide a summary and some policy indications.

2. The discrepancy between perceived and experienced corruption in Italy: the role of the media

We have seen in the introduction that, on the basis of the surveys by Eurobaromer and Transparency International, it would seem that in the case of Italy there is a discrepancy between perceived and experienced corruption. Similar indications are obtained when the CPI rank for Italy is compared with the convictions for crimes of public officials against the public administration. ¹⁶ In order to verify empirically whether perceived corruption in Italy is excessive compared to experienced corruption, we carried out a panel data analysis including the main historical members of the European Union. ¹⁷ The independent variable of the study is the CPI ranking of these countries according to Transparency International. The explanatory variables are represented by the press freedom index published by Reporters without Borders (PRESSFREE), the Freedom House democracy index (DEMOCRACY), the index of human capital from Penn World Table 9.0 (HUMANK), and a variable picking up experienced corruption. This last variable (BRIBES) is given by the percentage of positive responses to the question: "Do you personally know anyone who takes or has taken bribes?" in Special Eurobarometers: Corruption. Because the latter is published at intervals of time, we have used the surveys relating to recent years, 2013, 2017 and 2019. ¹⁸

Before proceeding with the panel estimate, we verified whether the variables experienced corruption and CPI ranking are endogenous. To this end, for each of the years considered, we performed Pairwise Granger Causality Tests, ¹⁹ which show, in two out of three periods of the survey, a causal link from experience of corruption (BRIBES) to perception (CPI Ranking) and not vice versa. This result allows us to use BRIBES as a regressor in the panel estimates.

The panel estimates are reported in Table 2. The first column shows all the variables are statistically significant and with the expected sign. In particular, it emerges that the higher the degree of democracy, of freedom of the press and of human capital, the lower the level of perceived corruption. Conversely, high experienced corruption positively affects the level of perceived corruption. The analysis of residuals shows that two Mediterranean countries, Italy and Greece, are outliers. The inclusion of dummies for these two countries (respectively DUITA, DUGR) in columns (2) and (3) shows that they have an excess perception of corruption by 30–31 percentage points.

Italy is an outlier also in a contribution by Treisman (2000) on the degree of corruption in advanced and emerging countries for the years 1996, 1997 and 1998. In those estimates, arguably the CPI index of Transparency International was accepted as an index of experienced corruption and used as the dependent variable. The fact that Italy was an outlier, i.e. its CPI level was persistently higher than estimated, is traceable to the emphasis given by newspapers to the so-called "Mani Pulite" ("Clean Hands") investigation conducted by the Milan magistrature in 1992–1993 regarding a system of bribery and kickbacks that was linked to the political class and businesses. This investigation took place in the period 1992–1994 and involved all parties, except PDS (Partito Democratico della Sinistra: Democratic Party of the Left), the former Italian Communist Party. At the end of 1994, over a quarter of Italian parliamentarians, the vast majority belonging to government parties, were accused of corruption or crimes against the Public Administration.

As a robustness check of the estimates in columns (1)–(3) of Table 2, to take into account of the results of the pairwise Granger tests and of a possible endogeneity of experienced corruption, we proceeded to a two-stage estimate in which experienced corruption is used as an instrument, delaying it by one period. The results of this estimate are reported in column (4). They do not differ from those of column (3).

Finally, again as a robustness check, instead of BRIBES, the percentage of positive responses, given in Special Eurobarometer: Corruption, to the question "Bribery and the use of connections is often the easiest way to obtain certain public services in your country?" (BRIBES1) was used as the variable intended to indicate experienced corruption (column 5).²⁰

There have been several criticisms of the reliability of the perceived corruption indices. ²¹ Among these criticisms, the most pertinent to this paper appears to be that the perception of corruption is strongly influenced by the media, ²² which can choose to emphasise or minimise certain episodes of real or alleged corruption.

The existence of a relationship between the number of articles dedicated to corruption by the main Italian newspapers²³ and crimes committed by public officials against Public Administration, and the level of perceived corruption detected by Transparency

¹⁶ According to data from ISTAT (the Italian National Institute of Statistics), between 2000 and 2017 (the last data available) the number of final convictions for these crimes remained substantially stable, after having declined significantly between 1995 and 2000. These data can be found in the section "Giustizia" of ISTAT database.

¹⁷ Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Spain, Sweden, UK.

¹⁸ The descriptive statistics of the variables are reported in Table A.1 in the Appendix.

¹⁹ See Table A.2 in the Appendix.

²⁰ On this aspect see also the report of the Monti government on corruption of 2012 (see Presidency of the Council of Ministers, 2012; p. VIII).

²¹ See, among others, Charron (2016) and Gutmann et al. (2020).

²² Other criticisms of the reliability of perceived corruption concern the variability of the definition of corruption itself (Svensson, 2005) and the fact that a certain behaviour may or may not be considered corrupt depending on the cultural context of a country (Lee and Guven, 2013).

Whose share of sales in the total daily press in Italy is around 18 percent.

Table 2Panel estimates of CPI ranking according to Transparency International.

	(1)	(2)	(3)	(4)	(5)
	LS	LS	LS	TSLS	LS
Constant	231,3***	161,1***	161,6***	162,3***	75,8***
BRIBES	0,4***	0,2***	0,2***	0,2***	
BRIBES1					0,311***
HUMANK	-16,8***	-17,8***	-17,8***	-17,8***	-9,9***
PRESSFREE	-1,5***	-0,8***	-0,8***	-0,8***	-0,6***
DEMOCRACY	-4,4***	-2,9**	-2,9**	-2,8**	0,2
DUITA + DUGR			30,6***	30,4***	28,2***
DUITA		30,3***			
DUGR		31,6***			
DU113		15,9***	15,9***	16,0***	10,5***
R2	0,864	0939	0,941	0936	0,948
S.E.	8,83	5,2	5,09	5,16	4,29
Prob F	0,00	0,00	0,00	0,00	0,00
Mean Dep	25,4	25,8	25,8	25,3	25,7
n.Obs	42	42	42	42	42

Note: DU113 is a dummy for Austria in the year 2013.

International and by Special Eurobarometer: Corruption is evident from Fig. 1. This figure shows that, between 2008 and 2012, the number of articles dedicated to cases of political corruption by the main national newspapers increased significantly. This increase also affected local newspapers without distinction of political color.

In the years immediately following 2008, emphasis was given by the newspapers not only to the trials involving Berlusconi, but also to those involving left-wing politicians, such as the mayor of Bologna Del Bono and the president of the province of Milan Penati, both accused of corruption and embezzlement, and to other investigations on public bureaucrats accused of having taken bribes, as in the case of the reconstruction of the city of L'Aquila destroyed in the 2009 earthquake. In these circumstances, the Movimento 5 Stelle (5 Star Movement: M5S) was founded in 2009 with the aim of fighting corruption and the appropriation of taxpayers' money by the political establishment.

The number of articles dedicated to cases of political corruption reached its peak in 2012 when a large number of regional legislators were accused of using public subsidies intended for their parties for personal expenses. Almost all the Councils of the 20 regions of the country and of all the parties, both right and left, were involved in embezzlement investigations. In the same period of time in which there was a significant increase of articles dedicated to cases of political corruption, i.e. between 2008 and 2012, the revenues and profits of newspapers companies fell dramatically due to the recessions occurred after the sub-prime and sovereign debt crises (Table 3).

We advance the hypothesis that the emphasis given by almost all Italian newspapers to political scandals was a means of countering the decrease in sales and revenue just mentioned. From this perspective, the high level of perceived corruption is here considered the result of a demand-driven bias. In order to ascertain the validity of this hypothesis, we estimated a standard VAR consisting of four variables, ²⁴ number of articles published in the main Italian national newspapers regarding cases of public officials against the Public Administration (ARTICLES), ²⁵ the number of definitive convictions for crimes against state property by public officials (CONVICTIONS), ²⁶ that should catch experienced corruption, the copies sold of the main Italian newspapers (SALES), ²⁷ on the assumption that newspapers reacted to the particularly pronounced drop in sales after 2008 by emphasizing news related to political scandals, and the ranking of Italy with respect to the CPI measured by Transparancy International (CPI Ranking). The identification of the impulses of the single variables is done using the Cholesky decomposition method. Bearing in mind that the identification of impulses in the Cholesky decomposition depends on the order of the variables in the VAR, we carried out all the exercises alternating the order of the variables so as not to favor a particular causal link.

The first condition of validity of causality tests based on the estimation of a VAR requires that the variables to be tested are stationary. The unit root tests of the variables used in the VAR are given in Table A.4 in the Appendix. Since the variables are stationary not in levels but in their first differences, the variables used in the estimates are annual and are expressed as first difference of their logarithmic value. ²⁸

Table 4 reports the VAR Granger causality test for the period 2000–2019 and shows that the number of articles influenced both perceived corruption, without being influenced by it, and sales, by which it was influenced. The variable relating to convictions does not influence any other variable; it is, however, influenced by perceived corruption.

²⁴ The descriptive statistics of the variables are reported in Table A.3 of the Appendix.

²⁵ This variable was normalised to the maximum values of the number of articles in the newspapers considered.

²⁶ See note 14.

²⁷ That is Corriere della Sera, La Repubblica and La Stampa. Data on the last of these newspapers is only available from 2003 onwards. All newspapers' data are taken from the historical archive of each of them published on-line.

²⁸ The VAR lag order selection criteria suggests an estimate with three lags. No root lies outside the unit circle therefore the estimated VAR satisfies the stability conditions.

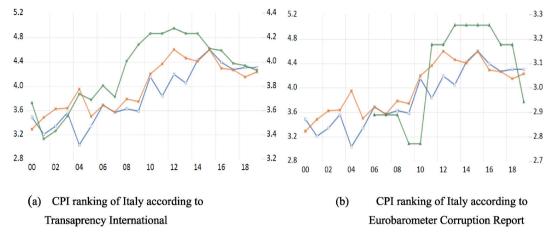


Fig. 1. CPI and number of articles of Corriere della Sera and La Repubblica reporting political corruption. Legend: square (blue line) Corriere, cross (orange line) Repubblica, circle or triangle (green line) ranking. The number of articles is normalised to the maximum values of the number of articles of the different newspapers considered; all the variables are expressed in logarithms. (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

Source: Transparency International, Special Eurobarometer: Corruption, and electronic archives of Corriere della Sera (archivio.corriere.it) and La Repubblica (https://ricerca.repubblica.it/ricerca/repubblica.

Table 3Gross operating margins of newspapers (in millions of euro).

Year	Revenues	Profits (+)/Losses (-)
2006	4088.4	149.0
2007	3963.8	124.9
2008	3665.4	-8.4
2009	3204.4	-240.9
2010	3095.7	-10.1
2011	2950.8	-22.3
2012	2580.0	-176.7

Source: FIEG (2014).

Table 4
Granger causality/Block exogeneity Wald test (2003–2019).

		Dependent variab	les		
Excluded variables		ARTICLES	CPI Ranking	SALES	CONVICTIONS
	ARTICLES	_	0.01***	0.03***	0.57
	CPI Ranking	0.90	_	0.39	0.04***
	SALES	0.41	0.05**	_	0.47
	CONVICTIONS	0.34	0.13	0.51	-

Note: *** rejected at 1%; ** rejected at 5%; * rejected at 10%.

The VAR Granger test provides some indications about the causal connection between the variables under consideration. It does not, however, give any indications as to the intensity of the causal link. In order to measure this intensity, we used the forecast error variance decomposition (FEVD). The results of the FEVD relative to the standard VAR Granger test estimated in Table 4 are given in Table 5.

This table reports the variance decomposition of four VARs in which each variable in the system is placed first.²⁹ The results show that the explanatory power of the number of articles on the perception of corruption is around 41%, which is significantly greater than zero, while that of the number of convictions is about 21% and is not statistically significant. At the same time, the number of articles explains about 47% of forecast error variance of sales and this value is significant. Finally, from the impulse responses obtained with the VAR estimate of the same table and reported in Fig. 2, it emerges that an increase in this type of articles, in the period of time considered in the estimates in Table 5, had a positive effect on sales.

²⁹ For each variable, we also show, for synthesis, the average of the contributions as a measure of the systemic importance of the variable. Of course, for this average the confidence interval is not available.

Table 5Composition of forecast error variance of variables in the VAR system.

	First variable in the VAR system				
	ARTICLES	CPI Ranking	SALES	CONVICTIONS	
ARTICLES	68.5*	15.0	39.5*	15.0	
CPI Ranking	40.7*	50.2*	6.5	20.5	
SALES	47.4*	10.0	61.3*	15.4	
CONVICTIONS	42.2*	17.9	29.6	54.6*	
Mean	49.7	23.3	34.2	26.4	

Note: * significant at 95%.

The evidence in this section makes it possible to propose that in Italy the high level of perceived corruption can, at least in part, be due to a demand-driven media bias. The implications of a high level of perceived corruption induced by a demand-driven bias can be analyzed through the model illustrated in the next section.

3. The model

The model is based on the demand-driven approach literature in which newspapers slant news to maximize profits. The main articles in this literature are McCluskey and Swinnen (2004) and Mullainathan and Shleifer (2005). In both these articles, readers obtain disutility from reading news inconsistent with their beliefs.

McCluskey and Swinnen (2004) show that, in a context wherein readers have a time constraint and newspapers have an ideological preference, it is personally optimal for people to remain imperfectly informed. Mullainathan and Shleifer (2005), instead, show that, if readers share common beliefs, competition among newspapers results in lower prices, but there is common slanting towards reader biases.³⁰ They conclude therefore that reader heterogeneity is more important for accuracy in media than competition per se.

We take from McCluskey and Swinnen (2004), beyond the readers' disutility from reading news inconsistent with their beliefs, the fact that newspapers have ideological preferences, i.e. a supply driven bias. Instead, using the conclusions of Mullainathan and Shleifer (2005) that, when readers share common beliefs, competition among newspapers does not result in any difference in slanting, we make the simplifying assumption of having only one newspaper. This hypothesis seems realistic in the Italian case since most readers believe politicians are corrupt.

Using this framework, we show how biased information can weaken a democratic regime. This can happen because the media, exploiting peoples' preferences, emphasizes the level of corruption of the political class. The high risk of loss of reputation discourages high-quality individuals from pursuing a career in politics. In other words, there is a problem of adverse selection, which entails a lessening of the quality of the political class.

In order to highlight these aspects, we add politicians' decisions to run for office in a demand-driven model based on McCluskey and Swinnen (2004) and Mullainathan and Shleifer (2005).

Using this framework, we propose a model with the following participants: newspapers, readers and politicians. The utility function of the reader depends on two components: expected income and the pleasure of reading about political scandals. Therefore, reader's utility is the following:

$$U^{R} = E(y) + \gamma \theta \tag{1}$$

where E(y) is expected income, θ is the news reported by newspapers, and γ is a positive coefficient. A high value of θ corresponds to a high level of political corruption. The higher the coefficient γ , the higher the utility from reading news about political corruption. The reader's income is a function of the quality of the incumbent politician. In fact, y can take on two values: a low value, equal to 0, if the incumbent politician is low-quality, g or a high value, equal to 1, if the incumbent politician is high-quality. g denotes the probability of having a high-quality politician in office. The reader's expected income, therefore, is equal to g.

Also, the utility function of the politician depends on two components. As in standard political-economy models, we assume that the politician has a benefit from being in office. The factor, α , the benefit from being in office, varies for each individual politician, and is distributed uniformly over the range (0, 1). This factor indicates that politicians are different and have greater/lesser job opportunities outside of politics and therefore would receive less/more utility from being elected.

The second component is due to the fact that a politician has a loss from the publication in newspapers of reports regarding political corruption, even if only alleged. This component is given by $\lambda\theta$, that is the news reported by newspapers, θ , multiplied by a coefficient, λ , which represents the importance given by the politician to the news reported in the newspaper. The higher λ , the higher the cost for politicians from news about political corruption. The utility for a politician, therefore, is equal to:

³⁰ It is only when readers' beliefs diverge, i.e. readers are heterogeneous, that newspapers segment the market and slant towards extreme positions. In this case, a reader with access to all news sources could get an unbiased perspective.

³¹ This assumption is confirmed in a now extensive literature according to which corruption has negative effects on growth, by reducing investment, both in physical and human capital (Mauro, 1995; Hillman, 2004; Reinikka and Svensson, 2005; Gründler and Potrafke, 2019).

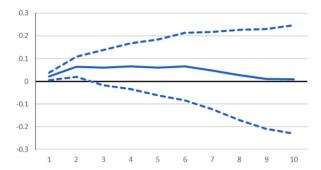


Fig. 2. Impulse response function of articles on sales.

$$U^p = \alpha - \lambda \theta.$$
 (2)

The last participant is the newspaper. The newspaper reports news about political corruption. The owners and reporters receive some data, d, about the level of corruption, and then report the data with a slant, s, so the news reported is $\theta = d + s$. As in McCluskey and Swinnen (2004), we consider also the possibility of supply-driven bias by assuming that the newspaper utility depends on its own preference on writing news about political corruption (which leads to the supply driven bias) and its profits:

$$U^{N} = \pi + \beta \theta. \tag{3}$$

Here π represents the newspaper's profit while the second term represents its preference on writing news about political corruption. The coefficient β represents the attitude of the newspaper about political corruption. If β is positive, it means that the newspaper has utility from publishing news about political corruption. In a general setting with more newspapers, each of them can have different values of β . In particular, the coefficient β can also be negative for some newspapers. Given the result of McCluskey and Swinnen that, with homogeneous readers, media competition does not reduce bias, for simplicity, we consider only one newspaper. Actions in the model are taken by politicians and the newspaper. Politicians decide whether to run for office while newspapers decide on the amount of slant. $\frac{32}{3}$

We now analyze the politician's decision to run for office. We assume that the political class is made up of a group of politicians whose number is normalised to 1. Half of these are low-quality and half high-quality. As already mentioned, each politician has a value associated to the benefit from holding office, $\alpha \sim U(0,1)$. Low-quality politicians are associated with the values $\alpha > 1/2$ because for them the utility obtained by being elected is greater than that obtained by high-quality politicians. For them, the income obtained from politics is greater than they could earn elsewhere. We also assume that high-quality politicians are more concerned by newspapers reports of corruption. Therefore, the value of λ is positive for high-quality politicians and zero for low-quality ones. The politician decides to run for office if the utility from running, eq. (2), is greater than the utility from not running. The latter, for simplicity, is set to zero. Therefore, the politician decides to run if $\alpha > \lambda \theta$. Given that all low-quality politicians choose to run for office, the probability that the incumbent politician is high-quality is equal to the probability that a high-quality politician will run, i.e. $1-2\lambda\theta$, multiplied by the number of high-quality politicians, divided by the total number of politicians who run, i.e. all the low-quality and part of the high-quality. Therefore, the probability that the incumbent is a high-quality politician equals:

$$p_H = \frac{\frac{1}{2} - \lambda \theta}{1 - \lambda \theta}.\tag{4}$$

From eq. (4) we see that the higher the value of θ , i.e. the higher the discreditable information in newspapers about politicians, the lower the probability of a good politician being in power, since good politicians prefer to leave politics. This leads to our first proposition.

Proposition 1. Biased news about political corruption leads good politician to leave politics. The quality of politicians therefore deteriorates.³⁴

We now consider the newspaper's choice of slant, s. In the simple case of a monopolist, newspaper's profits are equal to the reader's

³² As in McCluskey and Swinnen (2004), it is implicitly assumed that the reader always buys the newspaper. Mullainathan and Shleifer (2005), instead, assume that the reader's choice is to buy or not to buy the newspaper. In the end, however, the result is the same, since in equilibrium the reader always buys. In the latter model, in case of monopoly, the newspaper takes all the reader's surplus, in case of duopoly, the reader's takes it, but the choice of slant is the same.

³³ We have assumed, for simplicity, that all politicians have the same chance of winning office.

³⁴ Caselli and Morelli (2004) have shown that when the social status of the politician is low, the quality, in terms of competence, of the political class worsens.

surplus (eq. (1)), i.e. $\pi = U^R$. The newspaper, therefore, chooses s in such a way as to maximize eq. (3) taking into account eq. (4). Therefore, the newspaper slant is equal to:

$$s^* = \frac{1 - \lambda d}{\lambda} - \frac{1}{\sqrt{2\lambda(\gamma + \beta)}}.$$
 (5)

Eq. (5) leads to our second proposition.

Proposition 2. The bias in newspapers about politicians increases with the satisfaction gained by readers from reading news about corruption – the parameter γ – and decreases with the weight given by politicians to the news of corruption reported in the newspaper – the parameter λ . The bias is affected by the ideological positions of newspapers - the parameter β – which can be positive or negative.

Substituting the newspaper slant, eq. (5), into eq (4), we see that the probability that the incumbent is high-quality is a decreasing function of the parameters λ , γ and β .

4. Discussion

In the Italian historical experience of the last thirty years the values of β and γ have changed. The value of β has risen in correspondence with the "Clean hands" investigation. From ANSA (Associazione Nazionale Stampa Associata: Associated National Press Agency) daily news summaries, it appears that, between 1982 and 1991, the years before this investigation, episodes of political corruption occupied the front page of Italian newspapers on average ten days a year. In 1992 (when the investigation "Clean Hands" was launched), this type of news occupied the front page of Italian newspapers on average for 155 days and in 1993 for 190 days per year.

According to Chang et al. (2010) the growing emphasis given by newspapers to the "Clean Hands" investigation significantly increased the accountability of the Italian political class. However, Crepaz and Kenny (2013) correctly observed that the media cannot be considered as neutral subjects, detached from political competition, as done by Chang et al. (2010). In fact, "the political affiliations of media outlets correlates with very different patterns of coverage of Italy's corruption scandal." Following the emphasis given by newspapers, especially those of the Left, to the "Clean Hands" investigation in the 1994 political elections, the Italian Socialist Party almost completely lost its electorate. The Christian Democrat Party, which for almost fifty years had been the party of relative majority and had governed the country, were dissolved shortly before these elections.

For the reasons explained, the space dedicated by Italian newspapers to political scandals in the early 1990s is configured as an ideological supply-driven bias, which made news of political scandals a strategic tool of political competition and led to the dissolution of all historical parties but the PDS, the ex-communist party.

The newspapers' emphasis on the "Clean Hands" investigation persistently influenced the beliefs of the readers. It instilled in them a priori beliefs about the degree of corruption in the political class. In the model we have presented, in particular in Proposition 2, it can be likened to a remarkable increase in the parameter γ .

Since 2008 Italian newspapers exploited the high value of γ giving prominence to political scandals to counteract the dramatic fall in their sales and revenues. However, as shown in Proposition 1 of the model, the high level of perceived corruption induced by this behaviour of newspapers undermined the citizens' trust in parliament and in the parties thus favoring, in addition to the electoral affirmation of anti-establishment parties, a worsening of the country's political class.

5. The effects of excessively high perceived corruption on the trust in Italian parliament and the quality of political class

In Italy, after the global financial crisis, the increase in perceived corruption led to a growing distrust in parliament. The Standard Eurobarometer survey of the European Commission shows that, between 2009 and 2018, in correspondence with very high levels of perceived corruption, in Italy trust in parliament weakened significantly, ³⁹ especially when compared with that of other European countries. ⁴⁰

In order to verify if and how perceived corruption affected the trust of Italians in parliament, a panel data analysis was carried out based on data referring to the 14 main European countries⁴¹ covering the period 2007–2020. The independent variable is represented

³⁵ To simplify the model, we did not introduce the price of newspaper. We are implicitly assuming, as in the first part of Mullainathan and Shleifer (2005), that the monopolist sets a price for the newspaper so as to take all the reader's surplus.

³⁶ See Grundle and Parker (1996) and Newell (2000).

³⁷ See Aasve et al. (2018).

³⁸ This can be explained referring to "retrospective voting" models where citizens consider information on past politicians performance in order to make forward-looking decisions. See, among others, Persson and Tabellini (2000).

³⁹ The same survey shows that trust in local government bodies remained relatively high. This seems to confirm the findings of Abel and Meon

⁴⁰ According to the Eurobarometer survey, in 2009, 27 percent of Italians trusted the parliament. This percentage dropped to 11 per cent in 2011. By contrast, over this period, trust in parliament remained broadly stable in France (around 30 per cent) and in Germany (around 45 per cent).

⁴¹ Austria, Belgium, Denmark, Finland, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Spain, Sweden and United Kingdom.

by the degree of trust of citizens in parliament (TRUST in parliament).⁴² The explanatory variables used in the estimates are represented by GDP growth (GDP growth)⁴³ and the Ranking of the Transparency International CPI index (CPI ranking).⁴⁴ GDP growth reflects the economic trend. The expected sign of this variable is positive: we assume that, in expansionary (recessive) phases, voter satisfaction and therefore the confidence in parliament increases (decreases). The expected sign of CPI ranking is negative: if the value of this variable increases, the perceived quality of democratic institutions and, in particular, trust in parliament, deteriorates.⁴⁵

We initially proceeded to estimate a panel-VAR of CPI ranking, TRUST in parliament and GDP growth with 2 lags, necessary to evaluate the direction of the causal relationship between the three variables, in particular between TRUST in parliament and CPI ranking. ⁴⁶ The VAR Granger test (Table 6) indicates quite clearly the exogeneity of CPI ranking, which is not significantly influenced by the other two variables either individually or in pairs, while both GDP growth and TRUST in parliament are affected by the other variables with an order of endogeneity that seems greater for growth than for trust in parliament.

This result is also confirmed by the variance decomposition analysis (Table 7), which reports the variance decomposition of 3 VARs where each system variable is placed first.

The results of the estimates show the high exogeneity of perceived corruption with respect to the other two variables: in fact, the percentage of variance of CPI ranking explained by itself is 99 per cent.

Again, to investigate the order of endogeneity, but also to obtain first evidence of the dynamic aspects of the relationships between the three variables, the impulse response functions show that a shock on the perception of corruption has high and significant worsening effects both on trust in parliament and on growth (Fig. 3).

In a VAR in which CPI ranking is placed in first position, in the face of a 4-point shock in the perceived corruption index that persists over ten-year, trust in parliament decreases by a maximum of 2.3 points, just over 50 percent of the initial shock on perceived corruption. 47 The VAR results are also confirmed by a dynamic panel estimate á la Arellano-Bond in which trust in parliament depends on its own lags, perceived corruption and economic growth 48 (Table 8, col. 1) and in a cointegrating regression, estimated with a Fully Modified OLS (FMOLS) with the same two independent variables (col. 2). In both estimates, in the long run an increase of 1 point in the perceived corruption index results in an increase by almost 4 tenths of the trust in parliament index, an estimate not very different from what was obtained in the multivariate environment of the VAR. 49

The diminished trust of citizens in parliament has had repercussions on the quality of democratic institutions both of a cyclical and structural nature. At the cyclical level, corresponding to the rise in the level of perceived corruption, the political formations most dedicated to fighting corruption and adopting an anti-elite stance have achieved significant electoral success. ⁵⁰ In the general elections of 2013, the M5S had 25.6 per cent of votes. This success was even more pronounced in the 2018 general elections when this party obtained 32.7 per cent of votes. This shift in Italian political sentiment also benefited 'Lega' (a party in favor of an Italian exit from the euro and opposed to the austerity policies suggested by the European authorities), whose votes from 2013 to 2018 rose from 4.1 to 17.4 percent. The anti-establishment parties, that is M5S and Lega, won an absolute majority in parliament in 2018.

On a structural level, the diminished trust in parliament by Italians has had negative repercussions on the social status of politicians, especially MPs. In this context, as shown by Caselli and Morelli (2004), high-quality individuals are discouraged from a political career by the low social status enjoyed by politicians.. Proposition 1 adds another reason why high-quality individuals might give up a political career: the high risk of being subject to legal proceedings and losing their reputation because of the news given by newspapers, even in case of eventually being absolved or the case being archived.

In effect, the emphasis by the newspapers and media on episodes of corruption has led the judiciary to increase their inquiries into politicians' activity, at times through strained interpretations of the law. Evidence of this activism is the significant increase in official investigations into crimes of embezzlement and corruption in the years following 2008. The number of this type of investigation increased from 1026 in 2008 to 1167 of 2012 and to a peak of 1286 in 2015 as well as the number of cases that were archived. ⁵¹

 $^{^{42}}$ This data is taken from the Standard Eurobarometer survey.

 $^{^{43}}$ This data is taken from the OECD dataset.

 $^{^{\}rm 44}$ This data comes from Transparency International.

⁴⁵ The descriptive statistics of the variables are reported in Table A.5 in the Appendix.

⁴⁶ As can be seen from the stationarity tests of the variables reported in Table A.6 in the Appendix, the variables are stationary in their levels, therefore the VAR is estimated using the levels of the variables. The VAR lag order selection criteria suggests an estimate with 2–3 lags and we have adopted the more parsimonious version with two lags. No root lies outside the unit circle for which the estimated VAR satisfies the stability conditions.

⁴⁷ With regard to the relationship between growth and trust in parliament, a positive shock on growth creates, after two years, a significant positive effect on trust in parliament which, however, is canceled out over the following years; the profile of the inverse interaction is not very different: a positive shock on trust in parliament creates a significant positive effect on economic growth for the first 3 years, which subsequently tends to cancel itself out.

⁴⁸ Up to two lags of the variables used in the estimates are considered as instruments. The Sargan-Hansen test of overidentifying restrictions, equal to 13.49 with a probability of 0.26, indicates that the model is correctly identified. The Arellano Bond serial correlation test – AR(1) m-Stat = -2.60 with prob. 0.009 and AR(2) m-Stat = 1.67 with prob. 0.11 – indicates that the errors are serially uncorrelated.

⁴⁹ Similar results are obtained if a time dummy for the period 2008–2013 is included. The dummy is significant and the Arellano Bond test for serial correlation confirms that residuals are not correlated. Both the Arellano Bond and FMOLS estimates (reported in Table A.7 in the Appendix) confirm the results of Table 8.

⁵⁰ See on this aspect also Rizzica and Tonello (2020).

⁵¹ The number of cases archived increased from 935 in 2008 to 1313 in 2012 and to 1468 in 2015 (the last data published by ISTAT).

Table 6 VAR granger causality test.

		Dependent variables		
		CPI ranking	TRUST in parliament	GDP growth
Excluded variables	CPI ranking	-	6.17**	16.60***
	TRUST in parliament	3.32	_	12.81***
	GDP growth	1.06	5.59*	-

Note: Annual data. ***rejected at 1%, **rejected at 5%, *rejected at 10%.

Table 7Composition of forecast error variance of variables in the VAR system (forecast at 10 years).

	First variable in the VAR system	First variable in the VAR system		
	TRUST in parliament	GDP growth	CPI ranking	
TRUST in parliament	81.59	5.28	0.46	
GDP growth	3.86	87.97	0.09	
CPI ranking	14.55	6.75	99.44	

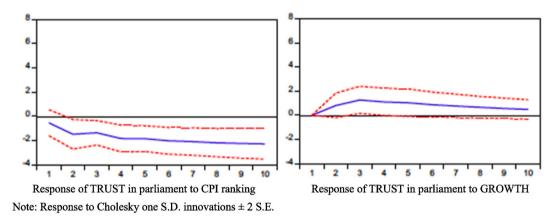


Fig. 3. Impulse response functions. Note: Response to Cholesky one S.D. innovations ± 2 S.E.

Table 8Trust in parliament estimates (Dependent variable TRUST in Parliament).

Variable	(1)	(2)	
TRUST in parliament (-1)	0.372***		
•	(0.084)		
CPI ranking	-0.262***	-0.365***	
-	(0.046)	(0.078)	
GDP growth	0.245	0.542***	
_	(0.096)***	(0.095)	
Estimation method	Panel GMM	FMOLS	
Obs.	154	168	
No. Of Countries	14	14	

In a context of higher risk of political activity, low-quality individuals could obtain higher net rewards from this activity than high-quality individuals. For the latter, the opportunity cost of news about a possible judicial investigation about them is higher than for the former. The two factors illustrated, i.e. the low social status of political activity and the risk of loss of reputation that this activity entails, contribute to predict a decline in recent years in the quality of parliamentarians in terms of professional competence in Italy. Fig. 4 shows that, starting from the 2013 elections, i.e. approximately when the CPI reached its peak in Italy, the percentage of "high-quality" senators - those who previously exercised highly skilled jobs (lawyers, business executives, university professors) and for whom a political career has a higher opportunity cost - has literally collapsed, going from over 40 percent to just over 25 percent. Conversely the share of low-quality senators, i.e. those who previously carried out clerical or other activities with low professional content, increased significantly. A similar process can be seen with reference to the House of Representatives ('Chamber of Deputies').



Fig. 4. Share of high-quality and low-quality MPs in Italian Senate.

Source: Senate of the Italian Republic. Legend: the blue line is high-quality MPs the - - - orange line is low-quality MPs.

6. Conclusions

We have studied the incentives of the media to publish biased information about corruption. In order to maximize profits, they may bias news about corruption of the political class. In this way, they provide the electorate with the impression of a higher level of corruption than is actually the case. This has negative effects on the quality of democracy.

After the global financial crisis of 2008, the level of perceived corruption measured by Transparency International, the Special Eurobarometer: Corruption reports, and other international surveys, reached particularly high levels compared to other high-income countries, indeed more similar to those of low-income countries. Empirical evidence shows that the increase in corruption perceived by Italian citizens was largely induced by the emphasis given by newspapers to cases of political corruption. Through this behaviour, the newspapers attempted to curb the fall in their revenues and profits in the years following the sub-prime and sovereign debt crises. Perceived high levels of corruption have led citizens to a widespread distrust of parliament and political parties. This had two important effects on Italian democracy. First, the diminished trust in these institutions favoured the success in the 2013 and 2018 elections of the anti-establishment parties, namely the League and the M5S. Secondly, the spread of distrust in parliament among citizens resulted in a fall in the quality of the political class. Because the low social status of political activity and the increased risk associated with this profession due to newspapers' emphasis on investigations on politicians, the quality of the Italian political class deteriorated: in particular, low-quality politicians have taken over from high-quality politicians given the higher opportunity cost for the latter of losing reputation.

Declaration of competing interest

The authors, Elena Seghezza, Giovanni B. Pittaluga and Pierluigi Morelli, certify that they have no affiliations with or involvement in any organization or entity with any financial or non financial interest in the subject matter or materials discussed in this manuscript.

Data availability

Data will be made available on request.

Appendix

Table A1
- Descriptive statistics of the variables used in the estimates of Table 2 (years 2013, 2017, 2019)

	CPI Ranking	BRIBES	BRIBES1	HUMANK	PRESSFREE	DEMOCRACY
Mean	22.0	9.6	61.1	3.2	84.4	8.4
Median	16.0	8.5	62.0	3.3	85.7	8.4
Maximum	80.0	31.0	93.0	3.8	93.6	9.7
Minimum	1.0	1.0	28.0	2.4	69.1	7.3
Std. Dev.	19.9	5.8	19.3	0.3	6.9	0.6
Observations	42.0	42.0	42.0	42.0	42.0	42.0

Table A.2

- Pairwise Granger Causality Tests relative to BRIBES and CPI ranking

	2013	2017	2019
BRIBES does not Granger Cause CPI Ranking	0.002	0.029	0.522
CPI Ranking does not Granger Cause BRIBES	0.202	0.958	0.616

Table A.3Descriptive Statistics of the variables used in the estimates of Tables 3 and 4 (period 2000–2019)

	Articles	Sales	Convictions	CPI Rank
Mean	111.8	860.7	914.3	52.4
Median	103.7	883.3	917.5	53.5
Maximum	199.6	1261.0	1168.0	72.0
Minimum	57.5	341.3	730.0	29.0
Std. Dev.	45.4	321.9	111.5	13.9
Observations	20	20	20	20

Table A.4Unit root tests

	Level		First difference	
	t-stat	prob	t-stat	prob
Articles	-0.711	82.6%	-6.222	0.0%
CPI Ranking	-1.418	55.4%	-5.280	0.0%
Sales	-0.388	98.2%	-3.632	4.9%
Convictions	-3.213	10.7%	-4.091	2.2%

Table A.5Descriptive Statistics (period 2000–2019)

	Trust in parliament	CPI Ranking	GDP Growth
Mean	40.1	22.7	1.0
Median	41.0	16.0	1.5
Maximum	74.0	94.0	24.4
Minimum	8.0	1.0	-10.1
Std. Dev.	18.9	21.2	3.4
Observations	154	154	154

Table A.6Panel Unit root tests

	CPI	Trust Parliament	Growth
Levin, Lin and Chu	-4.28***	-4.95***	-3.37***
Im, Pesaran and Shin	-3.61***	-4.40***	-3.74***
ADF – Fisher	58.81***	67.40***	57.76***
PP – Fisher	59.35***	79.12***	52.39**

Table A.7Trust in Parliament estimates with time dummy (Dependent variable TRUST in Parliament)

	(1)	(2)
TRUST in Parliament	0.3783***	
	(0.043)	
CPI Ranking	-0.2178***	-0.3227***
-	(0.035)	(0.080)
Gdp growth	0.3311**	0.4012***
	(0.164)	(0.105)
Period dummy 2008-2013	-0.8468***	-0.2952***
-	(0.245)	(0.073)
Estimation method	Panel GMM	FMOLS
Obs	154	168
No. Of Countries	14	14

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