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The local press as an external public governance power

Livia De Giovanni ^a, Pierpaolo D'Urso ^b, Nadia Fiorino ^c, Emma Galli ^b, Giampaolo Garzarelli ^d
and Antonio Pacifico ^e

^aDepartment of Political Science, CEFOP, LUISS – Guido Carli, Rome, Italy; ^bDepartment of Social and Economic Sciences (DiSSE), Sapienza-University of Rome, Rome, Italy; ^cDepartment of Industrial and Information Engineering and Economics, University of L'Aquila, L'Aquila, Italy; ^dDepartment of Social and Economic Sciences (DiSSE), Sapienza-University of Rome, Rome, Italy & IPEG, SEF, University of the Witwatersrand, Johannesburg, South Africa; ^eDepartment of Economics and Law, University of Macerata, Macerata, Italy & CEFOP, LUISS - Guido Carli, Rome, Italy

ABSTRACT

Do national and local newspapers both impact voter turnout? This paper tackles this question by employing data from a unique dataset that collects detailed national and local newspapers, politico-institutional and socio-economic information for Italy during 1980–2007. We use a Dynamic Panel Data with Instrumental Variables methodology that allows for the consideration of potential sources of endogeneity that may affect the relation between the press and voting behavior. We strengthen this methodology by considering the industry's entry and exit of newspapers – i.e. turbulence – as an external shock. Our analysis provides robust evidence that local newspaper readership affects both national and local turnout and improves political accountability.

KEYWORDS

Division of powers; External versus internal public governance institutions; Knowledge dispersion; Local press; Political accountability; Voter turnout

JEL CLASSIFICATION

D72; H00; L82

I. Introduction

Economists agree that the separation among the legislative, executive and judicial powers matters for public governance. This is believed to be the case not just for well-known reasons about balance of powers, but also because well-functioning checks-and-balances generate political information that can be useful for the consumer-voter to render politicians more accountable (e.g. Persson, Roland, and Tabellini 1997).

The fourth power of the free press and the fifth power of radio, newsreel,¹ television, and more recently the Internet (with its grassroots blogging and other social media platforms, such as Facebook, LinkedIn, Twitter, etc.) for digital content creation and sharing, can be considered information-conveying institutions (e.g. Orr 1987) that aid political accountability *externally* to formal governance. The most striking contemporary cases testifying the reach and extent of these external powers, most notably of the fifth, are arguably

the Arab Spring, the Manning and Snowden materials, and WikiLeaks.² The legislative, executive and judicial differ from the fourth and fifth powers because they are institutions that establish rules for checks and balances *internally*, namely through the governance of the public sector itself (Brunetti and Weder 2003).

The pages that follow concentrate on a relatively neglected external institution-as-power: the *local* press. The local press can, in its own right, help to create order and induce institutional change through consumer-voter learning, making the 'knowledge of the particular circumstances of time and place' (Hayek 1945, p. 521) relevant not just for markets, but for public governance too. Tocqueville (2012 [1835–1840]) was arguably the first to intuit the importance of the local knowledge channel when emphasizing that the quality of public governance depends on many things besides internal institutions (Leeson 2008): local newspapers externally assist in controlling political

CONTACT Giampaolo Garzarelli  giampaolo.garzarelli@gmail.com; giampaolo.garzarelli@uniroma1.it  Department of Social and Economic Sciences (DiSSE), Sapienza-University of Rome, Piazzale Aldo Moro, 5, 00185 - Rome, Italy & IPEG, SEF, University of the Witwatersrand, Johannesburg, South Africa

¹On the neglected importance of the international newsreel industry, which can be thought of as a rudimentary version of satellite channels before the television era, see Althaus et al. (2018).

²On the relation between the Internet and political participation see, among others, Czernich (2012).

behavior (Bunting 2017) by simultaneously supplying, in a decentralized fashion, the same information to many individuals (Alexander 2006).³

When assessing the added governance value of a free press for democracy, local newspapers are often not separated from national ones. For instance, a recent extensive survey on media (DellaVigna and La Ferrara 2015) finds few contributions paying attention to such separation, and often in analyses about the governance role of other mass media as well (Cagé 2020). Yet the local press can be seen as having its own distinct political accountability role, which is simply that information provided at local level may improve political awareness and involvement (Ferraz and Finan 2008; Snyder and Strömberg 2010; Larreguy, Marshall, and Snyder 2020; Moskowitz 2021). In fact, when the local supply of newspapers decreases, so can civic engagement, electoral competition, and voter participation: local newspapers that close leave an important knowledge gap that only with significant time, and only in some cases, can effectively be filled back (e.g. Schulhofer-Wohl and Garrido 2013; Shaker 2014; Hayes and Lawless 2015; Pengjie, Lee, and Murphy 2020). As an institution that can help to check and balance the public sector externally, the local press therefore lies at the interstices between the national press and the more technologically based fifth power.

These considerations that political information provided at local level may also motivate the voter to participate more actively to national elections lead to our research question. Does the circulation of both national and local newspapers have an impact on voter turnout in national and local elections? Our answer exploits a unique dataset, which we assembled, that collects annual data on detailed national and local newspapers, politico-institutional and socio-economic information for Italy over 1980–2007.

Italy is congenial for a number of reasons. First, Italian public governance houses local preferences at the national level in the form of a regional representative component in the Senate (the higher House of Parliament). Secondly, public governance underwent a process of decentralization that increased the extent of local expenditure responsibility and tax autonomy of Italy's regions (1995). Third, there were a series of reforms of the national (1993) and regional electoral system (1995) – the latter popularly referred to as *Tatarellum* (fully completed with Constitutional Law n. 1/1999) – that ultimately granted more representative weight to local preferences. The fourth event is the massive judicial investigation against corruption, known as Clean Hands (*Mani Pulite*), which involved many politicians for alleged bribery, and was constantly highlighted by the press. Moreover, during our time frame most of the news in Italy still spread by means of traditional, printed newspapers.⁴ Finally, on more than one occasion, local newspapers played a crucial role in exposing local banking and political scandals that changed Italian electoral behavior (Chang, Golden, and Hill 2010).

Our empirical analysis employs Dynamic Panel Data with Instrumental Variables, a methodology that allows for the consideration of potential sources of endogeneity that may affect the relation between the press and voting behavior. This off-the-shelf methodology is strengthened by considering the industry's entry and exit of newspapers – i.e. turbulence (Beesley and Hamilton 1984) – as an external shock. We find that the local press positively influences turnout and improves political accountability – namely, there is suggestive evidence about the external governance role of the local press.

³Indeed, Tocqueville ultimately perceived the role of the local press to be so important to elevate it to the primary power – after the consumer-voters themselves – for political control: 'each newspaper individually has little power; but the periodical press, after the people, is still the first of powers' (de Tocqueville 2012[1835–1840], p. 298).

⁴World Bank data indicate that Internet use in Italy started to pick up momentum around 1998, reaching almost 41% of the population in 2007. See <https://data.worldbank.org/indicator/IT.NET.USER.ZS?locations=IT> (last accessed November 9, 2022). More generally, local television coverage seems to have little to no effect on political knowledge (Snyder and Strömberg 2010); scant evidence on radio so far suggests that there is reinforcement of already held local political beliefs (Adena et al. 2015). Clearly, one must be mindful of external validity as context matters. Media specialists moreover point out that digital media does not pose a genuine challenge to local newspapers because (i) it creates more information awareness but less genuine civic participation (Howard 2005); (ii) it does not cover local government as much (Fico et al. 2013); and (iii) it is increasingly centralized (Zittrain 2008). See Bunting (2017) for a recent elaboration.

II. The local press as an external public governance power

Public governance and local press in Italy

Italy's public governance is multilevel. Below national government, we find 20 regions (*Regioni*), which are followed by 84 provinces (*Province*), and, finally, 7954 municipalities (*Comuni*).

In terms of political representation at the national level, governance is characterized by a Parliament with two legislative Houses – the Chamber of Deputies and the Senate of the Republic. Though there is perfect bicameralism between the two Houses (i.e., they have the same powers), the nature of representation differs. The Chamber represents national interests, while the Senate, as specified at the outset, regional ones.⁵

In terms of political representation at the local level, governance rests with 20 Regional Councils (*Consigli regionali*) that, as established by the Constitution, are the sub-national legislative organs of each region. The Councils are composed of local representatives who, beginning with the 1995 *Tatarellum*, are regionally elected on mixed proportional and majority basis. (There is some variance among regions in terms of how and when each chose to implement the *Tatarellum*, but the shared novelty is the majoritarian component.) Besides legislating, the Councils have other functions, such as administrative and policymaking, in areas of regional competence and interest.

As was said earlier, several reforms began in the 1990s and lasted into the early 2000s granting more autonomy to the Italian regions. The 1993 reform of the national electoral system rendered the Senate even more representative of regional interests and the 1995 *Tatarellum* favored bipolar political competition and stability of governments' coalitions once elected.

These attempts to decrease the gap between national and local electoral participation through electoral reforms and to regionally devolve fiscal collection and management had as one of the main objectives the improvement of political accountability. The result is that regions now are mainly

in charge of the most politically sensitive and strategic sectors, such as culture and tourism, environment, health care, housing, local transportation, and social services. It is especially for all these governance changes that increase autonomy, responsibility, and tasks of regions that our investigation is sub-nationally (Regional Councils) as well as nationally (Senate) regional.

Constitutionally, however, not all regions are on an equal devolution footing. Mainly for cultural, geographic, historical, and linguistic reasons five regions enjoy more autonomy (*Regioni a statuto speciale*). These 'Regions with Special Statute' are Friuli-Venezia-Giulia and Trentino Alto Adige (comprising the two Autonomous Provinces of Trento and Bolzano) in the northeast, Valle d'Aosta in the northwest, and the two islands of Sardegna and Sicilia. The remaining 15 regions with 'Ordinary Statute' (*Regioni a statuto ordinario*) are our sample mainly for reasons of greater governance homogeneity. The 15 sample regions are listed as well as depicted (Figure A1) in the APPENDIX.

We underscored at the outset the overall rationale for our interval of analysis (1980–2007).⁶ Regarding the cut-off year, it is useful to point out that the political influence of the Internet for turnout in Italy seems to have kicked in around 2008 when populist forces began to transform into political parties proper. The anti-establishment Five Star Movement (M5S) is the most successful epitome of this transformation. It started meeting and cultivating followers through pre-existing social media (the personal blog of comedian Beppe Grillo, M5S's co-founder, and Meetup); then extended the same principle to include political preferences and decision-making (e.g., selection of candidates and political positions) through a dedicated application for direct democracy (the so-called Operating System of M5S: Rousseau⁷); and has been from 2018 to 2021 part of the establishment – two consecutive government coalitions (Conte I Cabinet, 1 June 2018– 5 September 2019; Conte II Cabinet, 5 September 2019– 13 February 2021).

In addition to this technological shock blanket-ing Italian politics, there are institutional reforms that after 2007 begin to render the governance

⁵Citizens who are 18 and older are the voting base of the Chamber of Deputies; while citizens who are 25 and older are the voting base of the Senate.

⁶Note that during our sample period there is never coincidence between national and regional election day.

⁷Visit <https://rousseau.movimento5stelle.it/main.php> (last accessed February 8, 2020).

landscape more heterogeneous among all 20 regions. For instance, 14 Metropolitan Cities (*Città metropolitane*) are a recent level of administration – sitting somewhere between municipalities and provinces – that are present in ten ordinary and two Special Statute regions.

Regarding the press, starting from the mid-1980s, the Italian newspaper industry benefited from a wave of technological innovations, which greatly facilitated the expansion of the supply of local news thanks to a substantial reduction in fixed production costs and to an increase in production synergies (Drago, Nannicini, and Sobbrío 2014). Hence, even smaller newspapers have been able to be successful, and the industry found a significant source of profit in the local news market (Grandinetti 2008). What is more, on the institutional side, several laws (promulgated in 1981, 1985, 1987 and 1990) have also favored an increase in competitiveness and profitability. These laws establish some constraints to ownership and financial concentration, introduce discounted loans for investment in new technology, and enlarge the channel of public subsidies to reduce raw material and labour costs (Valentini 2012).

Data and variables

The governance and press background is suitable for our purposes. Before proceeding with the estimations, however, we need to lay complementary empirical groundwork.

Our dependent variable is voter turnout, which can be measured in a variety of ways (Geys 2006). Most studies focus either on the ratio between the number of voters and voting age population or on the number of voters over the number registered to vote. Others use the absolute number of votes cast and the number of voters over the number of eligible voters. Ultimately, it is difficult to assert with certainty which measure of turnout is relatively better. We measure turnout as the share of

the age-eligible population that votes during election. Our choice is pragmatic – driven by the availability of data.

Recall that both legislative bodies – Regional Council and Senate – represent regional interests, if at different governance levels. Accordingly, *turnout_regional* shall refer to the Regional Council estimations while *turnout_senate* to the Senate ones. Take note in this connection that during our period of analysis (1980–2007), the elections of Regional Councils were held at five year intervals, starting from 1980,⁸ while the national parliamentary elections, which include the Senate, were held in 1979, 1983, 1987, 1992, 1994, 1996, 2001, 2006.⁹ Furthermore, since the observations on voter turnout refer to the election years, we generate the data for turnout in non-election years through multiple imputation, a methodology that allows to impute m values for each missing item and create m datasets (Gary et al. 2001; Sandip, Stern Hal, and Daniel 2001; Royston 2004). Therefore, multiple imputation versions of the same dataset are simulated through iterations for each missing datum and then combined to create the best values (where ‘best’ stands for the model solution – or combination of predictors affecting the outcomes – that better fit the data).

Figure 1 illustrates the distribution of voter turnout, which appears uneven across and within regions. Within regions, the average and median values do not coincide, and the distribution is negatively skewed (average smaller than median). A cluster of southern regions is characterized by lower electoral participation.

Consider now the explanatory variables. Determining the relevance of newspapers and of control variables in affecting turnout variations over time introduces an added complication: habit-consistent voting (Denny and Doyle 2009). Treating each election as an independent event when this is not the case may bias estimates. To deal with the potential path dependency of the vote, we include as covariate in all Regional Council regressions a 5 year-lagged dependent

⁸An exception is the region of Molise. Following a decision of the Council of State (Italy’s highest administrative judging organ), Molise’s 2000 elections were cancelled due to several irregularities, and held in 2001 and in 2006.

⁹It is useful to point out here that the Italian electoral system cannot genuinely be considered compulsory. Although during 1945–1993 possible social sanctions were provided, they were never effective (so-called *sanzioni innocue*). Therefore, we do not consider the sanctions to have an impact on our dependent variable.

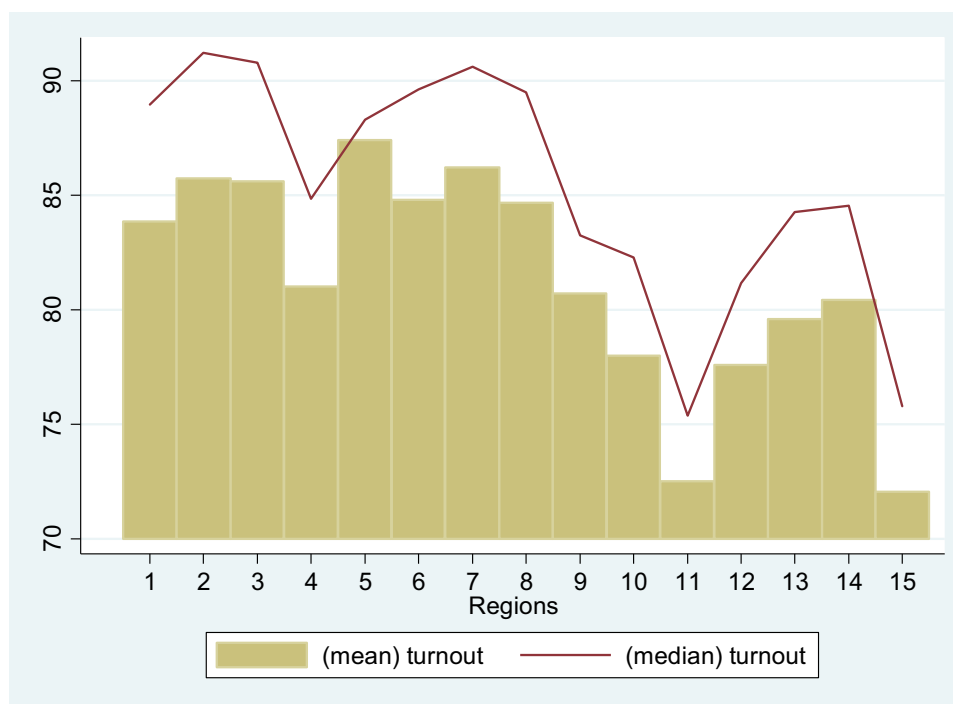


Figure 1. Distribution of voter turnout in regional elections across and within the 15 regions, North to South (1980–2007). Note: 1 = Piemonte, 2 = Lombardia, 3 = Veneto, 4 = Liguria, 5 = Emilia Romagna, 6 = Toscana, 7 = Umbria, 8 = Marche, 9 = Lazio, 10 = Abruzzo, 11 = Molise, 12 = Campania, 13 = Puglia, 14 = Basilicata, 15 = Calabria. Vertical scale is in percentage.

variable: *L5.turnout*. The 5-year duration of the covariate matches the statutory length of both regional and national legislatures. However, we drop *L5.turnout* for Senate because, factually, not all national legislatures during the years of our analysis lasted their natural course – for example, legislatures XI (1992) and XII (1994) lasted 2 years.

The vector **news** includes national and local readership of newspapers (*Nationalnewspapers* and *Localnewspapers*). We build our measure of readership from newspaper circulation, then, as is customary, we consider that each newspaper copy is read by two individuals (e.g. Gentzkow, Shapiro and Sinkinson 2011, p. 2983). Therefore, *Localnewspapers* measures the per capita number of local newspaper readership in each region, and *Nationalnewspapers* measures the per capita number of national newspaper readership in each region. National newspapers typically have a local edition (usually by means of a dedicated insert) in regions where local newspapers are already circulating. Besides offering national news, a national newspaper accordingly increases the total supply of

local news available to regional readers. Local newspapers in turn also cover national news, such that their coverage is in part overlapping with national newspapers.

Newspapers are classified following the Italian Association of Press Editors (Federazione Italiana Editori Giornali, FIEG)¹⁰ and the Italian press agency Adnkronos¹¹. Table A1 in the APPENDIX lists the 47 local and the 18 national newspapers included in our analysis. The list includes daily national and local newspapers, but excludes sports only newspapers, financial newspapers, and free newspapers (such as those distributed in Metro stations and in neighborhoods of larger cities, which are collations of news appearing elsewhere).

Figure 2 depicts the distribution of national newspapers across and within regions. Notwithstanding several outliers, we observe that the medians of the distributions over time are decreasing from North to South, while within regions they are almost symmetrical (median close to average). Two regions (Lazio, Piemonte) have the median of *Nationalnewspapers* above 16%;

¹⁰<http://www.fieg.it/> (last accessed November 3, 2022).

¹¹<https://www.adnkronos.com/> (last accessed November 3, 2022).

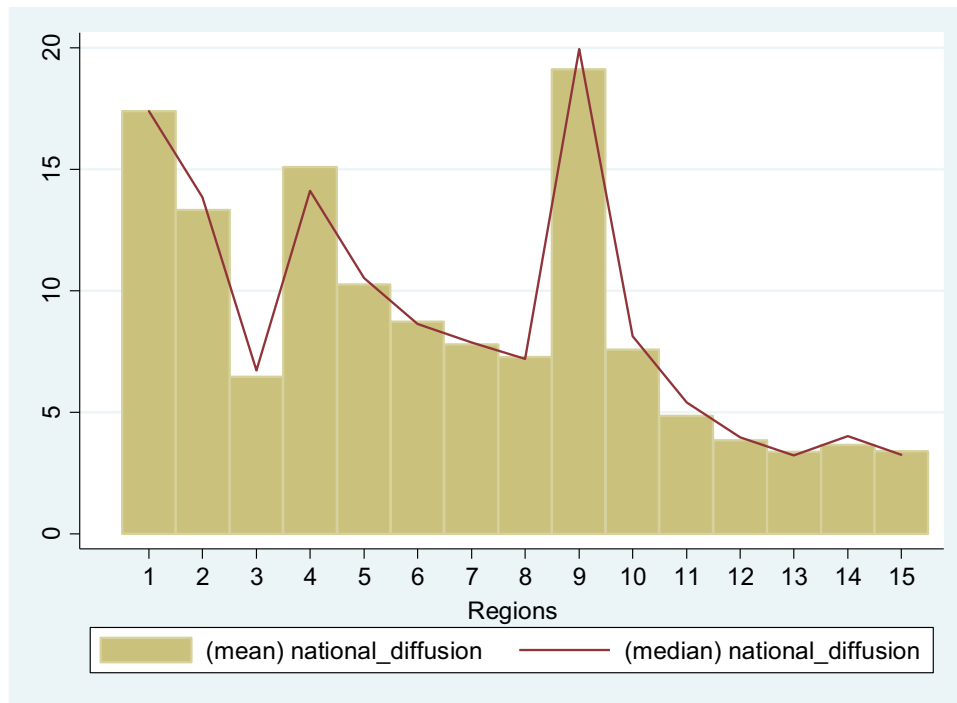


Figure 2. Distribution of national newspaper diffusion across and within the 15 regions, North to South (1980–2007). *Notes:* 1 = Piemonte, 2 = Lombardia, 3 = Veneto, 4 = Liguria, 5 = Emilia Romagna, 6 = Toscana, 7 = Umbria, 8 = Marche, 9 = Lazio, 10 = Abruzzo, 11 = Molise, 12 = Campania, 13 = Puglia, 14 = Basilicata, 15 = Calabria. The scale of the plotted data reflects that each newspaper is read by two individuals. Vertical scale is in percentage.

three Regions (Emilia Romagna, Liguria, Lombardia) between about 10% and 14%; six Regions (Abruzzo, Marche, Molise, Toscana, Umbria, Veneto) between 8% and 4%; four Regions (Basilicata, Calabria, Campania, Puglia) below 4%.

Figure 3 presents the distribution of local newspapers across and within regions. Notwithstanding several outliers, we notice that the medians of the distributions over time of *Localnewspapers* across regions are decreasing from North to South and are negatively skewed within regions. One region (Liguria) has the median of *Localnewspapers* above 15%; three Regions (Emilia Romagna, Toscana, Veneto) between 10% and 15%; three Regions (Lombardia, Marche, Umbria) between 5% and 10%; and eight Regions (Abruzzo, Basilicata, Calabria, Campania, Lazio, Molise, Piemonte, Puglia) below 5%.

Figure 4 depicts the variability of both local and national newspapers over the total number of newspapers. Between the late eighties and early nineties local newspapers account for more than 70% of the total and remain substantially stable

until the end of the considered period. National newspapers instead start to decrease from the mid-eighties, the period from which local newspapers gradually become more prominent.

The control vectors are two. The first regards the broader political and institutional context (**polinst**) while the second the socio-economic environment (**socec**), in that both can influence voter turnout.

polinst contains two variables about electoral rules, and one on prosecutions for corruption. *Herfindahl* accounts for the change in the electoral rule for Regional Councils by calculating the seats of the majority supporting the regional government vis-à-vis overall Regional Council composition. It ranges from 0, indicating a legislature where each legislator belongs to a different party, to 1, indicating a legislature where each legislator belongs to the same party. *ElectoralDummy* considers changes in electoral rules at the national level (0 from 1980–1993, and 1 afterwards). With *Corruption*, **polinst** measures the number of regional government officials prosecuted for corruption relative to the population.

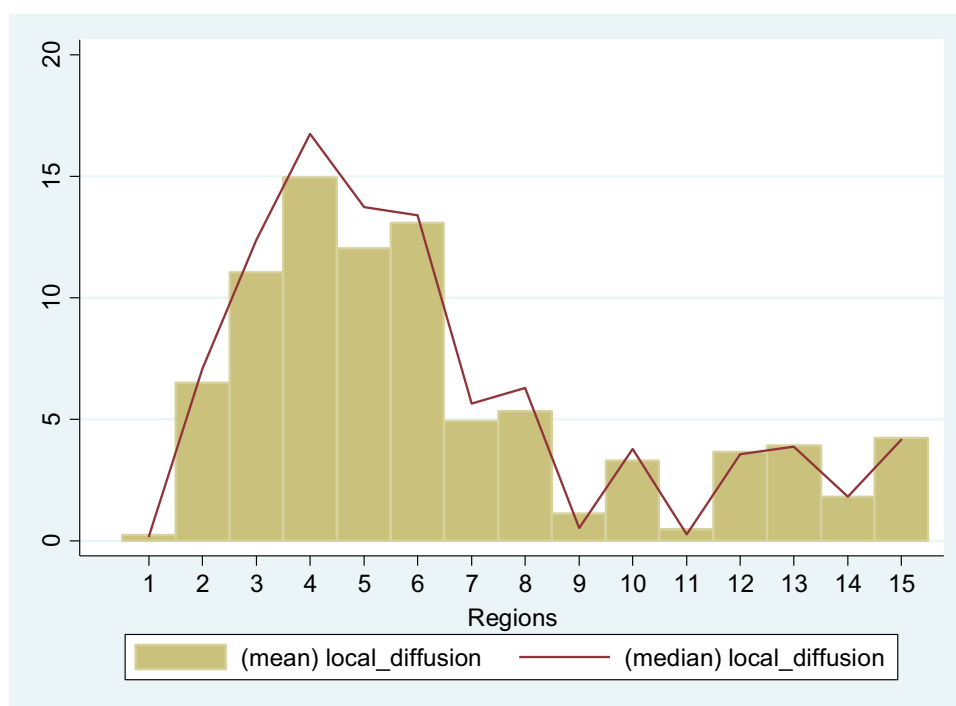


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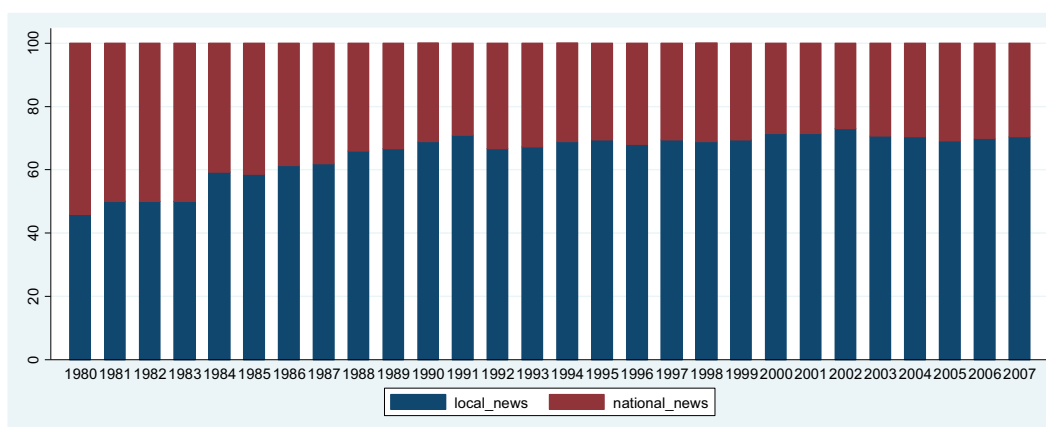


Figure 4. Share of local and national newspapers (1980–2007). Vertical scale is in percentage.

To capture the dynamics of social and economic mobility of constituency, *socec* includes a variable on school attainment (*School*), measured as the share of population enrolled in high school, and another on real GDP per capita (*GDP/N*). Additionally, *socec* captures the impact of the economic outlook on turnout by measuring the ratio between units of labor and population (*Economicoutlook*); and a Gini coefficient calculates income inequality (*Inequality*).

Table 1 summarizes the descriptive statistics. For convenience, it tabulates the data sources as well.

Empirical strategy

One problem with linking the external governance channel of the press to the internal one of voting is that this relation can suffer from potential endogeneity. For example, the local press may have an impact on voting behavior, and, at the same time, it can also

Table 1. Descriptive statistics and data sources.

	turnout_regional (%)	turnout_senate (%)	turnout_chamber_of_deputies (%)	Local newspapers	National newspapers	Turbulence (%)	Herfindahl	Corruption (%)	GDP/N, (Euro 1000)	School (%)	Inequality	Economic outlook (%)
Mean	81.34	84.61	80.24	5.77	8.81	8.22	0.70	0.62	15.24	4.70	0.33	39.94
Median	83.10	86.00	78.4	3.93	7.63	6.06	0.72	0.50	14.81	4.67	0.33	41.40
Standard deviation (within)	6.90	6.88	5.26	3.07	1.91	2.94	0.12	0.36	2.94	0.47	0.03	1.63
Standard deviation (between)	4.61	4.55	3.73	4.74	5.19	6.12	0.06	0.20	3.73	0.57	0.01	6.02
Minimum	64.40	66.00	64.50	0.02	1.42	0.00	0.13	0.10	6.76	1.98	0.24	27.95
Maximum	94.50	96.00	95.00	32.36	26.04	37.50	0.88	3.50	25.86	6.16	0.48	51.45
Data source	Historical Archive of the Italian Ministry of Interior, various years	Historical Archive of the Italian Ministry of Interior, various years	Historical Archive of the Italian Ministry of Interior, various years	Accertamenti Diffusione Stampa, various years	Accertamenti Diffusione Stampa, various years	Accertamenti Diffusione Stampa, various years	Historical Archive of the Italian Ministry of Interior, various years	ISTAT, various years	ISTAT, various years	ISTAT, various years	Survey of Household Income and Wealth, Bank of Italy, various years	ISTAT, various years

be the case that citizens who are politically involved are more informed. Another concern is that the press might be related to omitted factors that can also explain variation in voter turnout. This means that OLS will be marred by bias and inconsistency. Moreover, GMM – a methodology that allows to address potential endogeneity – is not applicable in our case: first, we have a long panel (28 years); and, second, given Italy's public governance, we end up with a sample size smaller than the time interval (15 regions).

What is more, with a dynamic panel data regression, estimation bias over time may occur. The lagged dependent variable Y_{t-p} or the lagged explanatory variables X_{t-p} could be endogenous (where t and p denote time and lag periods). Consequently, there could be correlation with the error term u_t (e.g. Xun, Liangjun, and White 2017). Thus, when accounting for dynamic and endogenous variables, the use of Instrumental Variables (IV) or Fixed Effects (FE) estimators would lead to inconsistent results (e.g. Baltagi 2013).

To address all these problems, we use univariate processes in dynamic panel models with finite time-series and large cross-section sample sizes ($T > N$) in order to: (i) obtain consistent and unbiased estimates; (ii) take into account all orthogonality conditions; and (iii) allow rigorous control over the instrument matrix. Hence, we employ the Dynamic Panel Data with Two-step System Instrumental Variables methodology (DPD-TSIV) (Blundell and Bond 1998). DPD-TSIV is an augmented version of the Difference GMM estimator (Douglas, Newey, and Rosen 1988; Arellano and Bond 1991) where the instruments are fitted values from autoregressive parameters based on all available lags of time-varying variables and their causal interactions. DPD-TSIV assures robustness and stability over time while also correcting for endogeneity; DPD reduces possible problems related to omitted variables (i.e., distorted estimators) by simultaneously considering lagged endogenous explanatory variables as instruments (IV). The calculation of the estimators is performed after controlling the coefficients for endogeneity (TS).

The baseline DPD-TSIV relation can be expressed as

$$\mathbf{y}_{i,t} = \alpha \mathbf{y}_{i,t-5} + \sum_{k=1}^9 \beta_k \mathbf{X}_{ik,t} + \sum_{k=1}^9 \sum_{m=1}^2 \gamma_{k,m} \mathbf{X}_{ik,t-m} + \eta_i + v_{i,t}, \quad (1)$$

where $i = 1, \dots, 15$ indexes the regions, $t = 1980, \dots, 2007$ denotes the time frame, with T fixed and N small ($T > N$). $\mathbf{y}_{i,t}$ is a $[(N \times T) \times 1]$ vector of the dependent variable turnout (either *turnout_regional* or *turnout_senate*) for each i ; α and $\gamma_{k,m}$ are the autoregressive coefficients, with $|\alpha| < 1$; $\mathbf{y}_{i,t-5}$ denotes the 5 year lagged dependent variable – *L5.turnout* – for each i ; $\mathbf{X}_{ik,t}$ is a $[(N \times T) \times K]$ matrix containing all endogenous explanatory variables (**news**, **polinst**, and **socec**) for each i , and β_k its coefficients; and $\mathbf{X}_{ik,t-m}$ is a $[(N \times T) \times K]$ matrix containing all (potential) external instruments affecting the relationship between the observable predictors ($\mathbf{X}_{ik,t}$) and the variable of interest ($\mathbf{y}_{i,t}$), with m denoting the number of lag periods and k the number of the covariates. $u_{i,t} = \eta_i + v_{i,t}$ is the usual fixed-effects decomposition of the error term, with $u_{i,t} \sim iid(0, \sigma^2 \mathbf{I}_T)$, where \mathbf{I}_T is an identity matrix with dimension $T \geq 1$.¹²

A TSIV estimation requires restrictions on initial conditions. We accordingly consider that η_i and v_{it} are independently distributed across i , and have the familiar structure of error components: $E(v_{it} * v_{is}) = 0$ i and $t \neq s$; $E(\eta_i) = 0$, $E(v_{it}) = 0$, $E(v_{it} * \eta_i) = 0$ i and $t = 1981, \dots, 2007$. Such conditions imply moment restrictions that are sufficient to identify and estimate α and $\gamma_{k,m}$ for $T \geq 2$. In addition, we follow the standard assumption about initial conditions $\mathbf{y}_{i,t}$, namely that $E(\mathbf{y}_{i,t} * v_{it}) = 0$ i and $t = 1981, \dots, 2007$ (e.g. Ahn and Schmidt 1995; Blundell and Bond 1998). The latter, jointly with moment restrictions, is sufficient to identify and estimate α and $\gamma_{k,m}$ for $T \geq 3$.

As mentioned before, we follow three steps to obtain asymptotically consistent and robust estimates ($T > N$), to account for all orthogonality conditions, and to allow for rigorous control over the

¹²With the exceptions of *ElectoralDummy*, *Localnewspapers*, *Nationalnewspapers*, *School*, *Senate*, and *Turbulence*, all other variables are expressed as logarithms for reasons of scale.

Table 2. Auxiliary Regressions – IV Relevance.

Turnout Regional	Turnout Senate	Turnout Chamber of deputies	Local newspapers	National newspapers	Herfindahl	Corruption	GDP/N	School	Inequality	Economic outlook
Panel A: <i>turnout_regional</i> as first regressor. Adjusted $R^2 = 0.65$										
0.217*** (0.036)			0.368*** (0.033)	0.671*** (0.058)	0.379*** (0.083)	-0.948* (0.524)	19.915*** (2.174)	2.180*** (0.354)	-0.749* (0.287)	16.814*** (4.072)
Panel B: <i>turnout_senate</i> as first regressor. Adjusted $R^2 = 0.64$										
	0.331*** (0.052)		0.376*** (0.033)	0.628*** (0.056)	0.378*** (0.083)	-0.761* (0.502)	18.520*** (2.102)	1.864*** (0.351)	-1.153* (0.178)	20.214*** (4.219)
Panel C: <i>turnout_chamber_of_deputies</i> as first regressor. Adjusted $R^2 = 0.67$										
		0.254*** (0.035)	0.385*** (0.032)	0.664*** (0.056)	0.364*** (0.082)	-1.246** (0.515)	22.138*** (2.200)	2.600*** (0.356)	-1.569* (0.157)	21.879*** (4.175)

p-values in parentheses. *** Significant at 1%, ** significant at 5%, and * significant at 10%.

instrument matrix. The first step tests for the relevance of (potential) instruments to be used as external shocks dealing with endogeneity issues. The variables included in the analysis correspond to the observable endogenous factors: *Corruption*, *EconomicOutlook*, *GDP/N*, *Inequality*, *School*, and *Turbulence*. The most significance and robustness in the auxiliary regressions is achieved with the one accounting for the variable *Turbulence*. Thus, *Turbulence* is instrumented, and its lags are treated as external shocks (see Table 2 which includes, like Table 3 and 4 after it, also the variable for the lower House of Parliament, *turnout_chamber_of_deputies*, for we will use this variable later on for a robustness test). The results find confirmation with the correlation matrix (refer to Table A2 in the APPENDIX),

where *Turbulence* tends to show stronger relationships with the economic factors that – in turn – show higher magnitude when investigating for causality relationships (Table 3).

The second step uses TSIV to test for the existence of Granger causality in heterogeneous dynamic panels between the explanatory variables and turnout, and vice versa (Dumitrescu and Hurlin 2012). Under the null hypothesis, there is no causal relationship for any of the regions of the panel, whereas there is a causal relationship from *x* to *y* for at least a subgroup of regions under the alternative. As known, in a time series context there can be biased estimates of the autoregressive parameters when the latter are tested under the wrong hypothesis (e.g. Pesaran and Smith 1995); if

Table 3. TSIV, Granger causality, *x* to *y* and *y* to *x* for all dependent variables.

Local newspapers	National newspapers	Turbulence	Herfindahl	Corruption	GDP/N	School	Inequality	Economic outlook
Panel A: Z-test, <i>x</i> to <i>y</i> , <i>turnout_regional</i> as dependent variable								
2.674*** (0.008)	-2.065** (0.039)	3.087*** (0.002)	-2.538** (0.011)	-3.241*** (0.001)	-1.784* (0.074)	13.523*** (0.000)	1.978** (0.048)	9.463*** (0.000)
Panel B: Z-test, <i>y</i> to <i>x</i> , <i>turnout_regional</i> as dependent variable								
2.672*** (0.008)	-2.052** (0.005)	3.145*** (0.002)	-2.536** (0.011)	-3.012*** (0.001)	-1.778* (0.063)	13.213*** (0.000)	1.963** (0.045)	9.432*** (0.000)
Panel C: Z-test, <i>x</i> to <i>y</i> , <i>turnout_senate</i> as dependent variable								
2.848*** (0.004)	-2.269** (0.023)	3.535*** (0.002)	-2.347*** (0.010)	6.489*** (0.000)	26.611*** (0.000)	11.295*** (0.000)	5.816* (0.000)	-1.809*** (0.070)
Panel D: Z-test, <i>y</i> to <i>x</i> , <i>turnout_senate</i> as dependent variable								
-2.902*** (0.004)	2.592** (0.010)	5.145*** (0.000)	-2.158** (0.031)	2.158* (0.031)	-1.911*** (0.056)	-2.610*** (0.009)	-3.194** (0.001)	-2.142*** (0.032)
Panel E: Z-test, <i>x</i> to <i>y</i> , <i>turnout_chamber_of_deputies</i> as dependent variable								
2.718*** (0.003)	-2.115** (0.013)	3.143*** (0.001)	-2.339** (0.009)	6.311*** (0.000)	25.112*** (0.000)	11.104*** (0.000)	5.783** (0.000)	-1.904*** (0.068)
Panel F: Z-test, <i>y</i> to <i>x</i> , <i>turnout_chamber_of_deputies</i> as dependent variable								
-2.907*** (0.005)	2.575** (0.007)	4.083*** (0.000)	-2.155** (0.030)	2.235* (0.033)	-2.610*** (0.009)	-3.194*** (0.001)	-2.142** (0.032)	-2.902*** (0.004)

p-values in parentheses. *** Significant at 1%, ** significant at 5%, and * significant at 10%. We reject H_0 of non-causality for all variables.

coefficient homogeneity is imposed, then the causality test statistic can lead to fallacious inference (viz., risk of failing to reject the wrong hypothesis). The results of the Dumitrescu-Hurlin test, displayed in Table 3, confirm that with our dataset it is necessary to employ dynamic panel analysis.

The correlation among some variables is medium to relatively high (Table A2 in the APPENDIX). Consequently, the estimations are approached incrementally: we start with a relatively parsimonious specification that is then gradually augmented until we include all the variables. The implication is that we regress a total of eight models from relation (1) – four for each dependent variable.

To assure that our TSIV estimators will be consistent and robust when accounting for omitted variables in the dynamic panels, we must perform our third and last step. Considering the presence of multiple effects in autoregressive coefficients, we regress a Seemingly Unrelated Regression (SUR). The SUR consists of a system of linear equations with errors that are correlated across equations for a given region but uncorrelated across regions (e.g. Canova and Ciccarelli 2004). It considers for each region all the tested causality effects from x to y as well as from y to x , which enables the elimination of serial correlation in residuals (validity for the external instrument used in the analysis). More precisely, *Turbulence* is treated as an external instrument to identify potential causal effects of the local press on political turnout (e.g. Arellano and Bond 1991). In this way, endogeneity issues are dealt with by applying the lagged interested variables. Thus, according to the first-step procedure, *Turbulence* is considered as an external shock affecting all the predictors within the system, including lagged outcomes. Finally, Arellano test results reject serial correlation for all variables for the first two lags (Arellano 2003). See Table 4. We can consequently proceed with the estimations.

Results

Table 5 reports results for the Regional Councils. Model 1 considers only *Localnewspapers* as predictor and *Turbulence* as external. The former is significant and positively correlated with *turnout_regional*, pointing to a possible positive

Table 4. SUR, serial correlation for all dependent variables – IV Validity.

Lags	Model 1	Model 2	Model 3
Panel A: <i>turnout_regional</i> as dependent variable			
1	8.54***	3.14*	2.84*
2	51.48***	22.82***	25.81***
Panel B: <i>turnout_senate</i> as dependent variable			
1	13.38***	6.94**	2.83*
2	78.49***	36.15***	26.43***
Panel C: <i>turnout_chamber_of_deputies</i> as dependent variable			
1	17.59***	6.57***	4.16**
2	67.25***	34.57**	18.58***

*** Significant at 1%, ** significant at 5%, and * significant at 10%. We reject H_0 of serial correlation for all variables.

Table 5. DPD-TSIV, *turnout_regional* dependent variable.

Variable	Model 1	Model 2	Model 3	Model 4
<i>LS.turnout</i>	0.404*** (0.091)	0.464*** (0.081)	0.412*** (0.069)	0.127* (0.078)
News				
<i>Local newspapers</i>	0.589*** (0.001)	0.656*** (0.001)	0.426*** (0.001)	0.298** (0.001)
<i>National newspapers</i>		0.537*** (0.001)	0.683*** (0.001)	0.515** (0.015)
Polinst				
<i>Herfindahl</i>			-0.014** (0.013)	-0.043** (0.001)
<i>Corruption</i>			-0.075*** (0.008)	-0.062*** (0.008)
Soccec				
<i>GDP/N</i>				0.208*** (0.061)
<i>School</i>				1.383** (0.005)
<i>Inequality</i>				-0.018 (0.026)
<i>Economic outlook</i>				0.118* (0.073)
Observations	415	416	418	422
Adjusted R^2	0.39	0.47	0.54	0.59
χ^2 (p-value)	(***)	(***)	(***)	(***)

The Standard Errors (in parentheses) are adjusted for heteroskedasticity. The instrument for the DPD-TSIV in Models 1-4 is *Turbulence* _{$t-1, t-2$} , treated as external shock. *** Significant at 1%, ** significant at 5%, and * significant at 10%.

cognitive role of local newspapers as more, finer grained information about public governance can strengthen citizens' incentives to vote. In other words, local newspapers generate knowledge that aids the democratic functioning of public governance from outside the three formal powers (Coyne and Leeson 2009); the marginal effect of the diffusion of local newspapers on voter turnout is about 33%, which is a relevant result.

Model 2 adds *Nationalnewspapers*, which correlates significantly and positively with *turnout_regional*. This result is not completely unexpected. The most relevant national newspapers, despite mainly covering national and international events, have also a section dedicated to local news. Therefore, they can be seen as complementing the market of local newspapers.

Model 3 includes the two political variables of **polinst**. The results show that participation to regional elections is strongly sensitive to corruption. The literature is not unanimous about the direction of the relationship between corruption and turnout. (Compare, among others, Chang, Golden, and Hill 2010 to Escaleras, Calcagno and Shughart 2012.) Our findings align with the hypothesis that exposure to corruption contracts electoral participation (Kostadinova 2009). The coefficient of government concentration (*Herfindhal*), which, recall, is the outcome of the majoritarian-type electoral reform, is significant and negative. That is to say, the shift from a proportional to a majoritarian representation undermines voters' belief in a fair representation of their political preferences (Cox 1997).

Model 4, which adds the socio-economic variables (**socec**), is the full model. *Nationalnewspapers* and *Localnewspapers* keep their significance. The same occurs for *Corruption* and *Herfindhal*.

Among the socio-economic determinants, *GDP/N* and *School* are significant and positive. These results provide supporting evidence to a wide literature that emphasizes that a higher degree of economic development and of education may influence active political participation through easier access to information (e.g. Delli Carpini and Keeter 1996; Wattenberg 2007). It appears that significant disparities in income (*Inequality*) do not impact voter turnout, while the economic climate (*Economicoutlook*) positively influences the dependent variable. This latter result suggests that in times of economic adversity individuals can withdraw from political participation in the attempt to solve socio-economic problems autonomously (Rosenstone 1982).

The results for turnout of Regional Councils are stable across the different specifications, where voting also seems to be habit consistent. The

overall fit of the different models is good, with a relatively high adjusted R^2 . The incrementally added variables are relevant and the identified patterns are robust; the marginal effect of local newspapers' readership on voter turnout is confirmed (about 33%). Finally, the strong significance achieved in the predictors and lagged outcomes confirm that most uncertainty from endogeneity is dealt with.

We repeat the exercise for Senate, which can be conceived also as a form of robustness. See Table 6. *Localnewspapers* and *National newspapers* are significant in all models. Exposure to more variegated information can heighten political sensitivity, opening the door for the influence of local news on regional representation at the national level as well. As pointed out above, national newspapers also contain local news and vice versa, implying that there is no crowding out of news offered by each type of newspaper vis-à-vis electoral participation. The marginal effect of local newspapers readership on voter turnout increases slightly (to 44%), which indicates that the role played by the turbulence of local press is relatively more relevant, in terms of voter participation, for national elections at the Senate.

Compared to Table 5, *GDP/N* and *School* lose significance; while *Economicoutlook* correlates significantly and positively with *turnout_senate*. The coefficients of other variables, including the electoral dummy, are not at odds with those obtained from their Regional Council counterparts.

Since the Senate's representation is regional, one could observe that there may be correlation with the Regional Councils. Moreover, there could be an issue with the homogeneity of the voting base, since the vote for the Senate is granted only from age 25. We therefore perform a robustness check by replacing Senate with the lower House of Parliament – the Chamber of Deputies. This final check is summed up in Table 7. The results on the main variables are not invalidated.

III. Summary and concluding remarks

Electoral participation is the sift of democracy. The tighter are the meshes for political

Table 6. DPD-TSIV, *turnout_senate* dependent variable.

Variable	Model 1	Model 2	Model 3	Model 4
News				
<i>Local newspapers</i>	0.659*** (0.000)	0.648*** (0.001)	0.542*** (0.000)	0.367*** (0.001)
<i>National newspapers</i>		0.718*** (0.001)	0.772*** (0.000)	0.321** (0.001)
Polinst				
<i>Electoral dummy</i>			-1.573** (0.110)	-1.236** (0.854)
<i>Corruption</i>			-0.089*** (0.006)	-0.052*** (0.007)
Socec				
<i>GDP/N</i>				0.090** (0.034)
<i>School</i>				0.001 (0.004)
<i>Inequality</i>				-0.047** (0.022)
<i>Economic outlook</i>				0.123** (0.052)
Observations	414	415	417	421
Adjusted R^2	0.35	0.42	0.62	0.72
χ^2 (p-value)	(***)	(***)	(***)	(***)

The Standard Errors (in parentheses) are adjusted for heteroskedasticity. The instrument for the DPD-TSIV in Models 1-4 is $Turbulence_{t-1,t-2}$, treated as external shock. *** Significant at 1%, ** significant at 5%, and * significant at 10%.

Table 7. DPD-TSIV, *turnout_chamber_of_deputies* dependent variable.

Variable	Model 1	Model 2	Model 3	Model 4
News				
<i>Local newspapers</i>	0.470*** (0.001)	0.474*** (0.000)	0.383*** (0.000)	0.417*** (0.000)
<i>National newspapers</i>		0.413*** (0.000)	0.454*** (0.000)	0.496*** (0.001)
Polinst				
<i>Electoral dummy</i>			0.012** (0.001)	0.014** (0.001)
<i>Corruption</i>			-0.065*** (0.005)	-0.037*** (0.005)
Socec				
<i>GDP/N</i>				0.140*** (0.028)
<i>School</i>				0.015*** (0.003)
<i>Inequality</i>				-0.040** (0.019)
<i>Economic outlook</i>				0.054* (0.043)
Observations	414	415	417	421
Adjusted R^2	0.38	0.43	0.48	0.64
χ^2 (p-value)	(***)	(***)	(***)	(***)

The Standard Errors (in parentheses) are adjusted for heteroskedasticity. The instrument for the DPD-TSIV in Models 1-4 is $Turbulence_{t-1,t-2}$, treated as external shock. *** Significant at 1%, ** significant at 5%, and * significant at 10%.

selection available to the electorate, the more feasible democracy approximates its ideal type where voter preferences are formed with few cognitive gaps. Improving information about incumbent and potential political representatives (and the political arena more generally) in the attempt to increase quantity and quality of electoral participation is one way to tighten the meshes of the sift. The press has long been interpreted as an institution-as-power serving this function externally to formal public governance. However, the focus has been to a large extent on national newspapers; the checks-and-balances role that the institution of the local press plays in democracy has been relatively underexplored.

Our contribution differs from these works by treating explicitly the internal-external institution-as-power relationship between extent of turnout and voter political knowledge through the cognitive gap-filling role played by the local press. We ground the proposition that the local press can be conceived as an external governance power on an empirical analysis that links the external checks and balances of the local press to the internal checks and balances of the ballot by using a newly assembled dataset on Italy. The bottom line is that public outcomes can be affected by local knowledge. Local newspapers can be considered an external governance institution – a Madisonian linchpin (Ostrom 1987) – that helps to ‘throw the rascals out’ come election time (Riker 1982).

The policy implication is unambiguous. The continuous promotion of pluralism of information through the presence of local and national newspapers appears critical to inform voters and spur them to vote, and, as a result, also to decrease the awesome gap between political decision-making and political liability (Besley 2007).

In 2008, the influence of the Internet on political participation in Italy starts to transform the political scenario through anti-establishment movements that employ social networking platforms for political mobilization and political decision-making. This is the main reason why our analysis stops in 2007. With data from additional time periods, one could

revisit the analysis in comparative terms, namely explore whether there are substitution or complementary effects between the Internet and newspapers on voting behavior.

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ORCID

Livia De Giovanni  <http://orcid.org/0000-0001-7806-2170>
 Pierpaolo D'Urso  <http://orcid.org/0000-0002-7406-6411>
 Nadia Fiorino  <http://orcid.org/0000-0003-3214-2807>
 Emma Galli  <http://orcid.org/0000-0001-7951-2313>
 Giampaolo Garzarelli  <http://orcid.org/0000-0002-2155-901X>
 Antonio Pacifico  <http://orcid.org/0000-0003-0163-4956>

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APPENDIX

Table A1. List of local and national newspapers.

47 Local Newspapers		18 National Newspapers
<i>Adige</i>	<i>Il Quotidiano</i>	<i>Corriere della Sera</i>
<i>Alto Adige</i>	<i>Il Tempo</i>	<i>Il Giornale</i>
<i>Arena</i>	<i>Il Tirreno</i>	<i>Il Giorno</i>
<i>Centro</i>	<i>Libertà</i>	<i>Il Manifesto</i>
<i>Corriere Adriatico</i>	<i>L'Indipendente</i>	<i>Il Mattino</i>
<i>Corriere dell'Umbria</i>	<i>Mattino di Padova</i>	<i>Il Messaggero</i>
<i>Corriere di Rieti</i>	<i>Messaggero Veneto</i>	<i>Il Resto del Carlino</i>
<i>Corriere di Viterbo</i>	<i>Notte</i>	<i>Il Secolo XiX</i>
<i>Corriere Mercantile</i>	<i>Nuova Basilicata</i>	<i>Il Sole 24Ore</i>
<i>Dolomiten</i>	<i>Nuova Ferrara</i>	<i>Italia Oggi</i>
<i>Eco di Bergamo</i>	<i>Nuova Gazzetta di Modena</i>	<i>La Nazione</i>
<i>Epolis</i>	<i>Nuova Venezia</i>	<i>La Repubblica</i>
<i>Gazzetta del Mezzogiorno</i>	<i>Nuovo Quotidiano di Puglia</i>	<i>La Stampa</i>
<i>Gazzetta del Sud</i>	<i>Occhio</i>	<i>L'Avvenire</i>
<i>Gazzetta di Mantona</i>	<i>Padania</i>	<i>Leggo</i>
<i>Gazzetta di Parma</i>	<i>Provincia di Como-Lecco</i>	<i>Liberò</i>
<i>Gazzetta di Reggio</i>	<i>Provincia di Cremona</i>	<i>L'Unità</i>
<i>Giornale dell'Umbria</i>	<i>Provincia Pavese</i>	<i>Paese Sera</i>
<i>Giornale di Brescia</i>	<i>Quotidiano della Calabria</i>	
<i>Giornale di Vicenza</i>	<i>Sannio</i>	
<i>Giornale Italia</i>	<i>Secolo d'Italia</i>	
<i>Il Gazzettino</i>	<i>Taranto News Sera</i>	
<i>Il Lavoro</i>	<i>Tribuna di Treviso</i>	
<i>Il Piccolo</i>		

Source: Compiled by the authors from the press agency Adnkronos and the *Federazione Italiana Editori Giornali* (FIEG), which is the Italian Association of Press Editors. Information on all local newspapers is also gathered from Lenzi (2001), and from the annual reports "Il Grande Libro della stampa italiana" (1993 to 2010) edited by Prima Comunicazione, the leading specialized journal of the Italian media industry (visit: <https://www.primaonline.it/>, last accessed 3 November 2022). We cross-checked these data with the detailed information provided by Grandinetti (2008).

Table A2. Correlation matrix.

	National newspapers	Local newspapers	Turbulence	Herfindahl	Corruption	GDP/N	School	Inequality	Economic outlook
<i>National newspapers</i>	1.0000								
<i>Local newspapers</i>	-0.0027	1.0000							
<i>Turbulence</i>	0.1325	0.5414	1.0000						
<i>Herfindahl</i>	0.3224	0.1027	0.0522	1.0000					
<i>Corruption</i>	0.1316	-0.1283	-0.2143	0.3546	1.0000				
<i>GDP/N</i>	0.6706	0.4224	0.5410	0.4181	-0.0161	1.0000			
<i>School</i>	-0.3618	-0.3396	-0.3428	-0.2331	0.2558	-0.5133	1.0000		
<i>Inequality</i>	-0.1149	0.0412	0.0459	0.0982	0.1237	-0.0057	0.1326	1.0000	
<i>Economic outlook</i>	0.5344	0.4049	0.5477	0.2353	-0.2691	0.8883	-0.5783	-0.1555	1.0000

List of the 15 sample Ordinary Statute regions

The 15 ordinary statute regions of our sample, depicted in Figure A1, are: Abruzzo, Basilicata, Calabria, Campania, Emilia-Romagna, Lazio, Liguria, Lombardia, Marche, Molise, Piemonte, Puglia, Toscana, Umbria, and Veneto.



Figure A1. Italy's 20 regions, with the 15 sample Ordinary Statute regions shaded in.