

ASYMMETRIC INFORMATION AND POLITICAL BUDGET CYCLES:
THE EFFECT OF THE LOCAL DIFFUSION OF NEWSPAPERS

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**Asymmetric information and political budget cycles:
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Abstract

This paper estimates the effect of the local diffusion of newspapers on Italian Regional public expenditure from 1984 to 2008. We exploit an original dataset that distinguishes economic from general-interest journals. We find 1) electoral increases of total and capital spending and decreases of current expenditure only after the introduction of electoral and fiscal reforms in the mid-90s; 2) press constrains, as expected, only the expenditure subject to electoral manipulation, *i.e.* total and capital spending, while after 1995 it also increases current expenditure; 3) general-interest press shows the largest coefficients, indicating stronger popularity concerns towards the newly informed voters.

Keywords: Political budget cycle, local diffusion of newspapers, dynamic panel estimation.

JEL codes: D72, H72, D83.

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1. Introduction

Is there an electoral expenditure cycle in Italian Regions? Is it a cycle in the size or in the composition of expenditure? Does the diffusion of information through newspapers affect this cyclical pattern? Which items of public spending are more influenced by the diffusion of newspapers? Has economic press a different effect than the general-interest one? These are the questions that this work addresses.

The role of information in the generation of electoral cycles provides the theoretical underpinnings for the joint analyses of the influence of both elections and media on spending decisions. In the baseline model of political budget cycles (PBC from now on) the incumbent government has an informational advantage over voters regarding his competence level and the true cost of public provision (Rogoff, 1990). Voters infer the incumbents' (unobservable) competence level by observing his fiscal decisions, and based on this information they choose whether to re-elect him or not. The fiscal manipulation before an election is a signaling device; Rogoff (1990) and Aidt et al. (2011) proved the existence of a separating equilibrium in which only the more competent incumbent succeeds in generating a cycle that increases his probability of being re-elected.

Information is a crucial element of these models, since it is the prerequisite to generate a cycle; furthermore, it determines the effectiveness of the signal by increasing the visibility of the decisional process and/or its outcome. In the literature more information is generally associated to more aware voters; political economists verified a positive relationship between awareness and the degree of democracy (Gonzales, 2002), the transparency of fiscal rules (Alt and Lassen, 2006), and, finally, the diffusion of mass media (Snyder and Stromberg, 2008). In particular, jurisdictions with a larger share of informed voters are associated with smaller cycles (Shi and Svensson, 2006). According to the theoretical model of Shi and Svensson (2006), the amount of information that voters detain about the fiscal decision taken by the government determines their degree of awareness, and therefore the size of the cycle generated by the incumbent. In the real world information is channeled by the mass media, but the level of public expenditures represents only a small share of the total amount of news that the audience receives, enriched with political debates, personal scandals and other news related to the government activity and the politicians' life. Such a large set of topics produces a multidimensional signal, that potentially counterbalances the influence of the fiscal information on the voting decision.

This work introduces separately in the analyses economic newspapers, that provide specialized comments and insights on economic issues only, and general-interest newspapers. Press has always been a relevant news provider in Italy, and its content is usually considered more reliable than the television one. Italian newspapers are free but not unbiased. A reliable ideological classifications of the journals has not been drafted yet, moreover their political capture has never been investigated so far. The growing literature related to this topic, however, shows that the consumption of media in Italy is demand-driven. Consumers tend to select the like-minded media, be it tv (Larcinese, 2005) or press (Durante and Knight, 2012), and when the news content gets distant from their ideological position, they switch to a more sympathetic provider.

The estimations are conducted on a panel dataset of Italian Regions during the period 1984-2008. We verify the presence of expenditure cycles in the dataset, and a shift from a cycle of the size of expenditure to a cycle of its composition corresponding to the implementation of fiscal and electoral reforms in 1995. Interestingly, the object of the manipulation is always capital expenditure.

The diffusion of newspapers significantly affects expenditure only according to the electoral timing: an increase during the pre-electoral year negatively affects the items of expenditure subject to manipulation, i.e. total and capital expenditure. Before 1995 the diffusion of newspapers significantly decreases electoral capital expenditure, while after 1995 it increases both the capital and the current one. Finally, the analyses reveals that, although economic and general-interest newspapers are both associated with expected the negative sign in all the estimations, general-interest newspapers systematically show the largest coefficient. This result suggests that a) the amount of information determines the degree of voters' awareness, not its specificity (consistently with the results of Prat and

Stromberg, 2006) and b) probably voters express their preference for a candidate rather than for a policy.

The rest of the paper is organized as follows: Section 2 reviews the literature on PBC and the role of voters' awareness. Section 3 introduces the empirical analyses by describing the institutional and political characteristics of the dataset and the econometric specification applied. Section 4 presents the results of the analyses. Finally, Section 5 concludes.

2. Related literature

There is a general agreement that the electoral concerns of the incumbent government generate manipulations of fiscal policy in presence of asymmetric information (Besley, 2003). The nature of the distortion - in the size or in the composition of the budget - is a more debated issue.

On one hand, fluctuations may affect the size of the budget. High expenditure and low taxation increases the utility of the voters, and favors the re-election of the incumbent (Rogoff, 1990). This hypothesis has been empirically verified, finding larger increases of electoral public spending in less developed countries (Shi and Svensson, 2003; Brander and Drazen, 2005). In these countries voters are characterized by a lower level of sophistication, while in developed countries large budget deficit are better monitored by the electorate, and voters understand the link between the current deficit and future tax increases and/or expenditure reductions. Budget cycles in more developed countries are therefore more likely to decrease the re-election probability of the incumbent instead of increasing it, weakening the incentive to generate a cycle. Similar results have been obtained in within-country analyses, e.g. in Turkey, (Krueger and Turan, 2003), Western Germany (Rossi and Galli, 2002), Mexico (Gonzalez, 2002), Sweden (Pettersson-Lidbom, 2003) and Portugal (Veiga and Veiga, 2007; Aidt et al., 2011).

On the other hand, a strategic incumbent government can maintain the budget balanced but redistribute the resources within it to favor the spending item preferred by the groups of voters that grant him re-election (Drazen and Eslava, 2005). This pattern has been detected in Israel (Rosenberg, 2002) and Colombia (Drazen and Eslava, 2010). Since the sophistication of the voters is an evolutionary process, it is reasonable to expect a switch in time of the nature of the PBC from one type to another. The scholars have not tackled this issue yet and the present study is the first attempt at testing this hypotheses. Nonetheless, the role of the institutions affecting the degree of sophistication of the voters has been largely treated.

First, the accountability mechanism between voters and politicians is a prerequisite for PBC, because the political responsibility of the fiscal decision must be clearly defined and citizens must express their opinion through the vote. Gonzales (2002) analyze the impact of a change in the level of democracy in Mexico during the period 1957-1997, finding the emerging of electoral cycles in more democratic periods.

Second, the type of spending that is most favorable before elections depends on the electoral rule. A proportional system is usually associated to a larger broad redistribution and a larger share of 'universal' spending (e.g. welfare expenditure); in a majoritarian system, on the other hand, the candidates compete in smaller electoral districts by targeting spending redistribution programs on the local interests of a smaller group (Persson and Tabellini, 2002). Santolini (2012) finds that a marginal increase of the dis-proportionality of the electoral rule is associated to a larger heterogeneity of expenditure in the Italian Regions, being expenditure skewed towards capital spending. Her results indicate an average composition cycle, but she does not investigate the simultaneous presence of cycles in the size of the expenditure. The PBC test of the present work complements her work and describes the characteristics of the expenditure cycle before and after the electoral reform implemented in 1995. Finally, PBC depend on the degree of transparency of the institutions. If cycles are generated to signal the government's competence to the voters, they should be more prominent when incumbents are better able to hide the fiscal decisional process. The empirical test of Alt and

Lassen (2006) on a dataset of 19 OECD countries in the 1990s confirms this hypothesis, detecting smaller electoral cycles in those countries that are characterized by more transparent fiscal rules and larger party polarization.

Recently, the scholars have turned their attention to the link between mass media and transparency. The media have a twofold effect: 1) they reduce the voters' cost of gathering information and 2) increase the visibility of both policy decisions and outcomes. When the media provide news about a politician, his public behavior is more easily observed. The causal link of popularity suggests that the covering of politics news affects public spending. Snyder and Stromberg (2008) test this hypothesis on a dataset of US districts, finding lower federal spending in areas where there is a smaller press coverage of the local members of the Congress. Besley and Burgess (2002) verify a larger responsiveness in India for public food production and calamity relief expenditure associated to a larger diffusion of local newspapers. Drago et al. (2012) consider all Italian municipalities with more than 15,000 inhabitants (664 over more than 8100 total Municipalities) in the period 1993-2010, looking for the effect of the entry of a marginal title on electoral outcomes, selection of politicians and government's performance. The authors focus on the geographical coverage of each title, finding that electoral participation and the probability of the incumbent being re-elected are positively affected by the diffusion of regional/multi-regional newspapers. The selection of the politicians, measured as mayor's education and type of employment, is not influenced, but his accountability is improved. In particular, the entry of an additional newspaper during the electoral term decreases the average deficit per capita in the municipality of 0.48% with respect to the average annual budget.

The informational content of the mass media is not always free and unbiased. When freedom of press is granted, the government does not have any influence on press release, i.e. censorship rights or propaganda campaigning. In such a situation, the media act as a sounding-board for any kind of news, and they affect the decisions of both voters and incumbents. Akhmedov and Zhuravskaya (2004) analyze the relationship between the development of freedom of press and PBC in Russia, finding results consistent with the theory. Following this line of research, Shi and Svensson (2006) introduced the concept of media access, measured by an index of radio ownership multiplied by freedom of broadcasting. They conclude that a greater share of informed voters leads to smaller PBC in a large cross-country dataset during the period 1975–1995.

When the mass media is not neutral and news are filtered through some partisan point of view, the bias affects the pandering incentives of the incumbent. If the bias is towards the government, the pandering incentives are reduced, while if the bias is against the government the incumbent needs to manipulate fiscal policy to increase his electoral popularity. Ashwort and Shotts (2010) study the effect of the media on the incumbents' pandering incentives proving that, surprisingly, even an unbiased media can aggravate pandering incentives when the challenger is strong.

The incumbent bias is the focus of a recent strand of the economic literature. To focus on the Italian environment considered in this paper, the hypothesis of the capture of the media by political parties has not been directly tested yet, but there is evidence of the capture of Italian press by advertisement companies. Gambaro and Puglisi (2010) find that 'the newspaper coverage of a given company is positively and significantly related with the amount of ads purchased on that newspaper by that company'. There is of course the possibility of an indirect capture by companies that support a political party in return for the attention to their special interests. The impact on voters' ideology, however, is not relevant. Italians, in fact, show a 'pathological level' of selective exposure to the like-minded media (Larcinese, 2005). In other words, they watch and read all that is consistent with what they believe in. More interestingly, they change their consumption behavior as soon as the ideological content of the media gets distant from their own. As an example, during the Berlusconi centre-right wing cabinet in 2001, when the Prime Minister was also the owner of the three most popular commercial channels, center-right wing voters watched mostly his channels while center-left wing voters watched mainly public channels, over which the government coalition exercised a weaker influence (Larcinese, 2005). Such a polarization is the response to a change in the tv channels'

ideology. When Berlusconi was in office, center-right wing voters watched more public television than before, because the traditional government's influence over public tv reduced the distance from their positions. Center-left wing voters, on the contrary, tuned in a new private channel, ideologically biased towards the center-left wing party (Durante and Knight, 2012). In an extension of their analysis, Durante and Knight (2012) find that a strong correlation is present also between newspapers' ideology and Italian readers' one, and that there is not any substitution effect between tv and press.

Another characteristic of news providers is their informational content. Some media are in fact associated to news directly connected to the theoretical model of PBC as fiscal indicators, i.e. the introduction or the reform of taxes, the evolution of the deficit, the evaluation of the provision of public goods and services; other media, on the contrary, are not. As an example, Prat and Stromberg (2006) test the detrimental effect of the introduction of commercial television in Sweden on voters' political knowledge. They assume that 'viewers receive more political information from public service broadcasters than from their commercial counterparts', but the empirical results do not match the predictions as they show that the introduction of commercial television increased voters' knowledge by providing information to ex ante uninformed voters.

3. The empirical analyses: methodology and data

3.1 Italian Regions: expenditure, elections and the diffusion of newspapers

In Italy there are three tiers of sub-national government: Regions, Provinces and Municipalities. The Italian Constitution provides each Region with statute autonomy (art.123), legislative and ruling autonomy (art. 117), administrative autonomy (art. 118) and financial autonomy (art. 119).

The dataset used for the analysis includes the 15 Ordinary Statute Regions² during the period 1984-2008. The exclusion of the five Special Statute Regions³ is motivated by their heterogeneous institutional and electoral setting. The time period selected includes the longest time series of variables available for these observations.

Italian Regions represent an interesting environment for studying electoral cycles. When they were established, in 1978, expenditure was mainly financed through intergovernmental grants and the electoral rule was fully proportional. The reforms of the 1990s strengthened the link of accountability between voters and politicians by increasing the financial autonomy of the Regions and changing the electoral rule into a mixed system (4/5 proportional, 1/5 majoritarian) with the direct election of the Governor. The presence of soft budget constraints (Bordignon, 2000; Josselin et al., 2012), however, provide incentives to distort expenditure without incurring the risk of being punished for generating large budget deficits.

The financial autonomy of the Regions has been modified through the reduction of intergovernmental transfers, substituted by the simultaneous introduction of equalization funds. Own tax revenue is limited to the definition of the production tax rate (*IRAP, Imposta Regionale sulle attività produttive*) introduced in 1997 and the regional personal income tax surcharge, accounting respectively for 55% and 29% of total Regional revenues in 2008⁴. Expenditure autonomy is larger, and it includes health (79% of the national health expenditure) and investment expenditure, accounting for 40% of Italian investment expenditure⁵.

Total expenditure consists of a 66% of current expenditure (personnel, transfers to Municipalities and local health agencies), a 7.1% of capital expenditure, a 4.2% of loans and borrowings and a 22% of

² Piemonte, Lombardia, Emilia Romagna, Veneto, Liguria, Toscana, Umbria, Marche, Abruzzo, Lazio, Campania, Basilicata, Molise, Calabria, Puglia.

³ Valle d'Aosta, Trentino-Alto Adige, Friuli-Venezia Giulia, Sicilia and Sardegna.

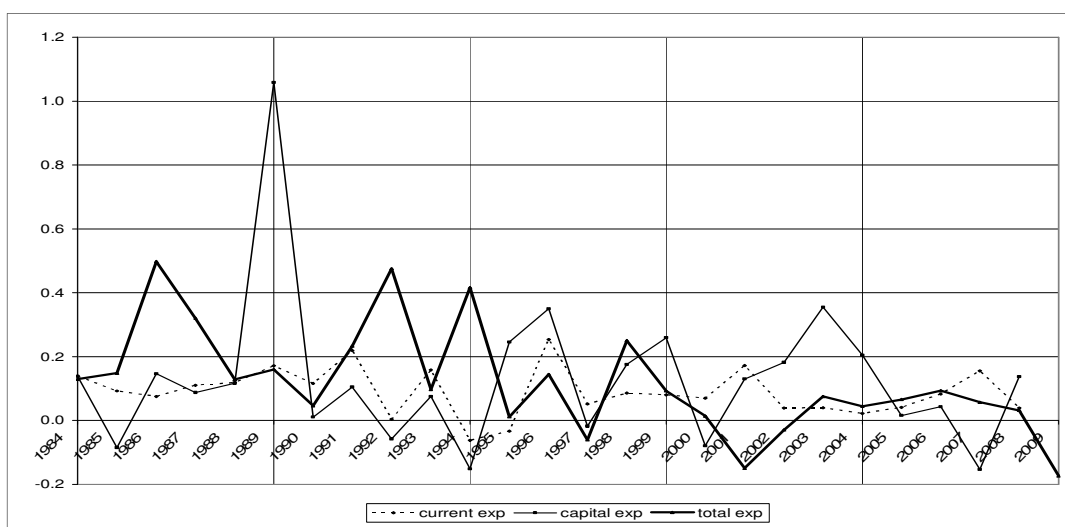
⁴ Source: ISTAT, *Bilanci delle Regioni e delle Province Autonome*.

⁵ Source: ISTAT, *Bilanci delle Regioni e delle Province Autonome*.

third-party payments (*'partite di giro'*). Since the outcome of third-party payments is not visible for the voters, the analysis will focus on current and capital expenditure⁶.

The Regions in the dataset held exogenous elections every 5 years since 1980, to elect the Regional Council and the Governor. Before 1995 the Council was elected with the proportional rule and the President was elected by the Councilors. After 1995 the electoral rule turned to a mixed system and it has been introduced the direct election of the Governor. The increased accountability incentivizes the generation of a cycle in total expenditure, but it is contrasted by the mixed electoral rule that stimulates the generation of a cycle in the composition of expenditure, maintaining the budget balanced. The evolution of the variation of expenditure depicted in Graph 1 supports this argument. The vertical lines indicate the last year of the legislature. The figure shows evident cycles of expenditure until the mid-90s, and then an unclear pattern. These dynamics, however, does not consider the determinants of both expenditure levels and voters' awareness.

Graph 1. Average expenditure variation in the dataset



Source: own calculations on data from ISTAT (Italian Institute of Statistics)

The diffusion of information through the mass media in Italy is mainly channeled through television news, but survey evidence indicates a stronger reliability of the voters on newspapers journalists rather than tv journalists⁷. For this reason, and for difficulties in gathering data on the television audience for a sufficient period of time, the local diffusion of newspapers is used as a proxy for voters' awareness.

Italian newspapers can be divided into national and local ones, depending on the boundaries of the geographical area in which they circulate. A more interesting distinction is between economic and general-interest newspapers. Most of the newspaper publish a variety of issues on politics, including the private life of the candidates, political scandals and ideological debates, news stories referred to public expenditure outcomes (usually emphasizing bad health services, mis-functioning of public transportation and so on). Economic newspapers, on the contrary, provide voters with specialized comments and insights that directly increase the awareness on the fiscal decision. There is one

⁶ The analyses assumes the absence of any significant pattern of yardstick competition among the Regions. This assumption cannot be tested due to the too small size of the dataset, but it is supported by reasonable arguments. First, the economy of the Regions is not integrated as the one of the Municipalities because, beyond national shocks, each Region has an economic system and a different specialization (manufacturing, public services, tourism and so on). Secondly, Regions represent large geographical areas and the informational spillovers across them may not be strong enough to stimulate the interregional performance comparison.

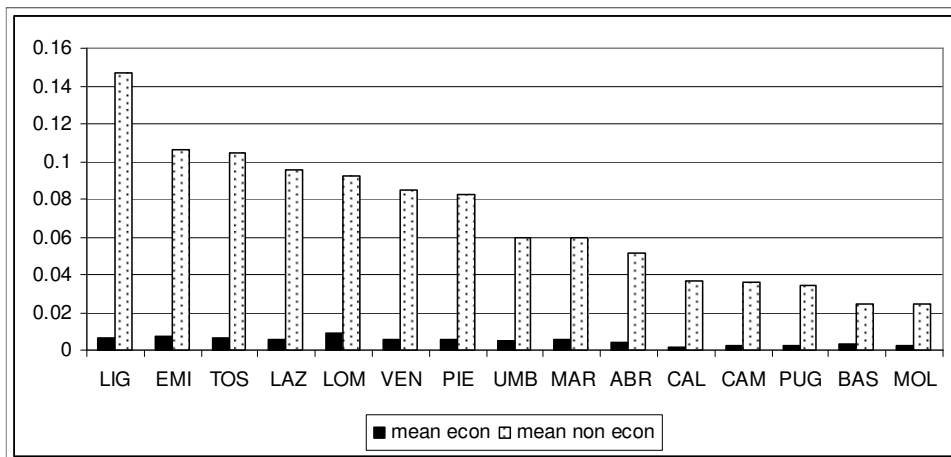
⁷ ACI-CENSIS, 9° Rapporto sulla Comunicazione in Italia, 2011.

newspaper in Italy, *Il Sole - 24 Ore*, that is commonly classified as economic. Its editor is the General Confederation of Italian Industry (*Confindustria*), and it is the reference point for readers that wish to deepen their knowledge on national economic and fiscal issues. Furthermore, it is considered a reliable updating tool for practitioners, entrepreneurs, bureaucrats and financial investors due to the specificity of its content. Regional expenditure, as already said, is a relevant issue at the national level, therefore voters can find on *Il Sole - 24 Ore* detailed news on Regional public policies⁸.

The empirical analysis uses a dataset on the diffusion of newspapers that has been assembled from official data released by ADS (*Accertamenti Diffusione Stampa*). ADS gathers data on the diffusion of newspapers from the main associations of editors and advertisement agencies in Italy⁹. It is a source of proved reliability, and it is the only agent providing the regional and provincial disaggregation of the data. The ADS regulation defines ‘diffusion’ as the number of copies of a newspaper circulating in Italy and abroad including sales, subscriptions, wholesales and free copies. The definition is quite broad, but there is a lack of data on the circulation explicitly demanded by the population (sales and subscriptions only) that makes this variable the best available proxy.

The diffusion of the newspapers is not homogeneous across Regions. Graph 2 depicts the Regional per capita average diffusion of newspapers, indicating that there are more readers in the North than in the South. The highest values are in fact associated to the Regions Liguria, Emilia Romagna, Toscana, Lombardia, Veneto and Piemonte; the Lazio Region is an exception, since it is located in the Centre of the country but is associated to a relatively large number of newspapers per capita. This exception is motivated with the presence in this Region of the city of Rome, that is the country capital and the centre of political and institutional networks. On the contrary, the lowest levels of per capita newspapers are associated to the Southern Regions: Abruzzo, Calabria, Campania, Puglia, Basilicata and Molise. If we focus on the economic press the geographic pattern is even more clear: *IlSole24Ore* is more popular in the Northern Regions, first of all Lombardy (where the city of Milan, the financial centre of the country, is located); the Southern Regions, on the other hand, register the lowest levels of economic press diffusion.

Graph 2. Per capita average diffusion of newspapers in the dataset



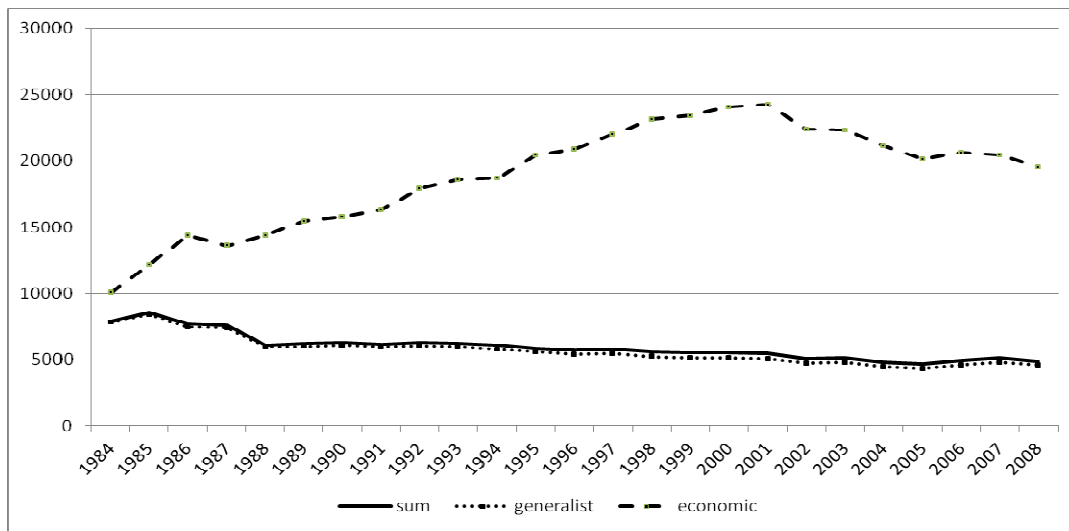
Note: LIG=Liguria, EMI=Emilia Romagna, TOS=Toscana, LAZ=Lazio, LOM=Lombardia, VEN=Veneto, PIE=Piemonte, UMB=Umbria, MAR=Marche, ABR=Abruzzo, CAL=Calabria, CAM=Campania, PUG=Puglia, BAS=Basilicata, MOL=Molise. Source: own calculations on data from ADS (*Accertamenti Diffusione Stampa*)

⁸ There is another economic newspaper, *ItaliaOggi*, that provides even more detailed information. Its diffusion, however, is extremely limited and the available time series starts from 1987. For this reason it has been excluded from the present analyses.

⁹ The agencies are: Utenti Pubblicità Associati, Federazione Italiana Editori Giornali, Federazione Professionale della Pubblicità, Federazione Italiana Pubblicità.

Graph 3 illustrates the dynamics of the average regional diffusion per journal in the dataset¹⁰. The diffusion of *Il Sole 24 Ore* is always larger than the one of general-interest newspapers per journal. The diffusion of general-interest newspapers, i.e. the dotted line, decreases until 1988 and remains stable during the following years. The diffusion of the economic newspaper, on the other hand, shows a quasi monotonic increase until 2002, followed by a slow decrease. At first sight this pattern could be associated to the gradual substitution of press with other sources of news (e.g. internet), the so called ‘press divide’. Evidence from official surveys, however, detected this phenomenon in Italy only after 2009¹¹. For the purpose of the present analysis, the presence of the press divide might overestimate the role of the diffusion of newspapers on voters’ awareness, but given that our dataset ends in the first year in which the phenomenon started occurring, it should not affect the estimates.

Graph 3. Average regional diffusion per journal



Source: own calculations on data from ADS (Accertamenti Diffusione Stampa)

3.2 Empirical specification, variables and methodology

The empirical analysis follows two steps. First, we test the presence of expenditure cycles in the dataset. Then, we augment the empirical specification with the variables of interest to estimate the effect of the local diffusion of newspapers on the cycles.

The baseline expenditure equation is:

$$[1] \text{Exp}_{i,t}^s = \beta_0 + \beta_1 \text{Exp}_{i,t-1}^s + \beta_2 X_{i,t} + \beta_3 \text{preel}_{i,t} + \beta_4 \text{elec}_{i,t} + \beta_5 \text{postel}_{i,t} + f_i + g_t + u_{i,t}$$

The dependent variable *Exp* measures expenditure per capita in thousands of euro, where the index *s* indicates the item of spending: $se\{total, current, capital\}$. The choice of estimating the same specification for the three spending categories analyzed follows a common practice in the empirical literature. Moreover, this allows us to test for a cycle in the size or in the composition of spending by using respectively total expenditure or its sub-categories, current and capital expenditure.

The vector *X* includes explanatory variables representing demographic, socio-economic, political and institutional variables determining the expenditure level.

The demographic variables capture the effect of variations of the demand of public services. The density of population (*density*) is a proxy of the demand of public goods and services in a Region. The more densely populated a Region is, the higher its internal demand. Given that Regional expenditure

¹⁰ A comprehensive list of the newspapers included in the dataset is reported in Appendix A.1.

¹¹ Source: UCI-CENSIS, 8° Rapporto sulla Comunicazione in Italia, 2010.

is highly influenced by welfare expenditure like health and education, the dependency ratio (*depratio*) measures the demand from the share of young and old population. These two variables are expected to show a positive sign, but in case of the achievement of economies of scale, an increase in the demand decreases the expenditure and the coefficient associated to these variables should show the negative sign or become non significant.

One fiscal variable, the received transfers per capita in thousands of euro (*grants*), has been included to control for the amount and the nature of available resources of the local government. Intergovernmental transfers are one of the main sources of Regional resources, although their share has decreased due to the reforms of the 1990s, aiming at increasing the efficiency of the expenditures. Nonetheless, the central government still transfers resources to the Regions for equalization purposes. This variable has been included with a one period lag to avoid simultaneity with the dependent variable. The effect of the state of the economy on the expenditure decisions could be tested also by introducing the lagged level of GDP per capita (*GDP pc*). The difference lies in the nature of these available resources, since grants have been transferred from the central government, while the GDP is mainly composed by the value added produced inside the Region. The specification includes both these variables to test for differences in their effect, but the results are robust to the exclusion of GDP per capita¹².

The set of political variables control for the partisanship of the government (*left dummy*) and the effect of the fragmentation of the Regional Council (*frag*). A larger fragmentation, measured with the Herfindhal index, is associated to larger intra-group redistribution and larger expenditure.

An institutional dummy (*maj*) has been included, equal to one for the years after 1995, when the electoral reform has been implemented. The introduction of the majority rule, associated in the literature to a targeted redistribution larger than welfare redistribution (Persson and Tabellini, 2002), predicts a negative sign associated to this coefficient.

The dummies *preel*, *elec* and *postel* are the variables of interest in Equation 1 as they detect the dynamics of the electoral cycle. In particular, *elec* is equal to one in the year in which the cycle is expected to be generated. Given that the Regional budget is approved by the end of each fiscal year (usually December) and the exogenous date of election in the dataset is between May and June, a cycle is expected to occur during the year before the election (as an example, if an election has been held in 2000, the cycle is expected in 1999 and $elec_{1999}=1$)¹³. The theory predicts a negative sign associated to the *elec* dummy. The dummies *preelec* and *postel*, on the other hand, are equal to one during the year anticipating and the year following the cycle (following the example above, $preelec_{1998}=1$ and $postel_{2000}=1$). Their coefficients, therefore, represent counterfactuals and are expected to be non significant or negative.

Finally, *f* are region-fixed effects capturing time constant characteristics of the observations, *g* are time dummies and *u* is the error term.

The second step of the empirical analyses includes the newspapers' diffusion variable in the specification, estimating the equation:

$$[2] \text{Exp}_{i,t}^s = \beta_0 + \beta_1 \text{Exp}_{i,t-1}^s + \beta_2 X_{i,t} + \beta_3 \text{preel}_{i,t} + \beta_4 \text{elec}_{i,t} + \beta_5 \text{postel}_{i,t} \\ + \beta_6 \text{news}_{i,t}^j + \beta_7 \text{news}_{i,t}^j * \text{elec}_{i,t} + f_i + g_t + u_{i,t}$$

The coefficients of interest now are β_6 and β_7 . The variable *news* measures the per capita diffusion of newspapers. This variable is introduced both non interacted and interacted with the electoral dummy to estimate its average effect in the dataset and its electoral effect compared to the non electoral one. The index *j* indicates the type of press considered among economic (*Eco_n*), general-interest (*Gen_n*) and all the newspapers (*News*). The coefficients of the interacted term are the most relevant, because

¹² Estimations available upon request.

¹³ This classification is common in the literature, e.g. Vergne (2009).

the theory predicts that an increase in the share of informed voters is associated to smaller cycles (Shi and Svensson, 2006). If the specificity of the information affects the size of the cycle, economic newspapers are expected to be associated to a larger effect than general-interest newspapers, and a larger absolute value of its coefficient is predicted. If the opposite situation is observed, and the larger effect is associated to general-interest newspapers, the results confirm the uttermost relevance of newly informed voters found in the empirical tests (Prat and Stromberg, 2008).

The coefficient of the non interacted variable, on the other hand, is expected to be non significant. Since voters are assumed to be myopic, far from next election they do not observe public spending and the fiscal decisions of the incumbent do not influence his popularity. The diffusion of newspapers should therefore have not any significant impact on the average spending level during the legislature.

Public expenditure is characterized by persistence in time, therefore Equation 1 and Equation 2 are properly estimated by considering the endogeneity caused by the lagged dependent variable on the right hand side. A popular econometric method to account for this type of endogeneity is the Arellano and Bond (1991) GMM estimator for dynamic panel data, in which the variables in differences are instrumented with the variables in levels. In particular, the System GMM estimator proposed by Blundell and Bond (1998), introducing also an equation in levels instrumented with the differences, increases the efficiency of the estimator. The application of these econometric model to small samples, however, is problematic as the number of instruments over-fits the endogenous variables and it generates the so called ‘instrument proliferation’ (Roodman, 2008). This problem is usually signaled by a p -value of the Hansen test close to 1¹⁴. The main implication of ‘instrument proliferation’ is the risk of generating false positive results, i.e. observing significant coefficients that are not truly significant.

In the case of small samples, where GMM cannot be applied efficiently, the Least Squares Dummy Variable Corrected (LSDVC) has been proposed. This estimator is based on the LSDVC estimator of Kiviet (1995 and 1999), further developed by Judson and Owen (1999), Bun and Kiviet (2001 and 2003) and extended by Bruno (2005) to unbalanced panels. The LSDVC estimator is obtained by wiping out the small sample bias from a LSDV estimator computed on the original model. Bruno (2005) specifies three bias corrections, corresponding to increasing levels of precision. The bias correction depends on an unknown parameter whose estimate is obtained selecting an initial procedure among the Anderson-Hsiao, the Arellano-Bond and the Blundell-Bond estimator. In particular, the Anderson-Hsiao estimator instruments the original model in first differences with the first two lags of the dependent variable; the Arellano-Bond and the Blundell-Bond estimators apply to the original model respectively the Difference GMM and the System GMM with no intercept. Finally, the standard errors take into account the small size of the sample and they are estimated with a bootstrap procedure, whose number of repetitions is selected by the researcher.

The size of the dataset prevents us from obtaining reliable estimates with the GMM estimator, as the rule of thumb of having a number of instruments at most as large as the number of groups is never respected¹⁵; for this reason we estimate Equation 1 and Equation 2 with the LSDVC model.

Table 1 reports the variables in the dataset, their name, their description and the expected signs of the coefficients. Tables A.2 and A.3 in the Appendix contain the data sources and the descriptive statistics.

¹⁴ An example of this bias in the literature are the GMM estimates of Shi and Svensson (2006).

¹⁵ In the most parsimonious model we reduced the number of instruments to 23, while we have only 15 groups.

Table 1. The description of the dataset

	Name	Description	Calculation	Expected sign
Dependent	Texp	Total expenditure per capita	Total expenditure/population	
Variables	Cexp	Current expenditure per capita	Current expenditure/population	
	Kexp	Capital expenditure per capita	Capital expenditure/population	
Independent	Texp lag	Lag of total expenditure per capita	Total expenditure(t-1)/population(t-1)	+
Variables	Cexp lag	Lag of current expenditure per capita	Current expenditure(t-1)/population(t-1)	+
	Kexp lag	Lag of capital expenditure per capita	Capital expenditure(t-1)/population(t-1)	+
	Density	Density of population	Population/surface area in hm2	+/-
	Depratio	Dependency ratio	(Population 0-15years + population over 65years)/population 16-64years	+/-
	Grpc	Lag of per capita grants received	Grants received(t-1)/population(t-1)	+
	GDPpc	Lag of GDP per capita	GDP(t-1)/population(t-1)	+/-
	Preel	Pre-electoral year	1 if elec(t+1) =1	+
	Elec	Electoral year	1 if a cycle is expected	-
	Postel	Post-electoral year	1 if elec(t-1) =1	+
	Termcount	Legislature counter	Values 1to 5 from the year in which the election has been held to the pre-electoral year	-
	Left	Left dummy	1 if the government is left-winged, 0 otherwise	+
	Maj	Majority dummy	1 after the electoral reform in 1995, 0 otherwise	-
	Frag	Fragmentation index	Herfindhal index calculated on the seats of the Regional Council	+
	News	Diffusion of newspaper pc	Diffusion of newspaper/population	+/-
	News*elec	Diffusion of newspaper pc*elec		-
	Eco_n	Diffusion of economic press pc	Diffusion of <i>IlSole24Ore</i> /population	+/-
	Eco_n*elec	Diffusion of economic press pc*elec		-
	Gen_n	Diffusion of general-interest press pc	Diffusion of general-interest newspaper/population	+/-
	Gen_elec	Diffusion of general-interest press pc*elec		-

4. Results

4.1. The expenditure cycle and the effect of the local diffusion of newspapers

This Section presents the estimations of Equation 1 and Equation 2 on the full time dataset. Section 4.2 investigates the evolution of PBC in Italy by replicating the estimates separately for the two time sub-samples, 1984-1995 and 1996-2008.

Table 2 below reports the results from the estimation of Equation 1¹⁶. The three models differ with respect to the dependent variable, as specified in the second row of the Table.

Table 2. Estimation of Equation 1, 1984-2008

	Model 1		Model 2		Model 3	
Dep. Var.	<i>Lntxppc</i>		<i>Lncxppc</i>		<i>Lnkxppc</i>	
Dep. Var. lag	0.124	**	0.06		0.521	***
Lndensity	-0.079		0.622		-2.222	*
Lndepratio	0.963	***	0.71	***	1.667	***
Lntgrpclag	0.007		0.008	*	-0.014	
LnGDPpclag	1.068	***	1.096	***	0.687	***
Preel	-0.006		0.002		-0.005	
Elec	0.056	**	0.015		0.167	***
Postel	0.006		-0.0005		-0.018	
Left	-0.022		-0.063	**	0.101	
Maj	-0.213	***	-0.149	***	-0.292	***
Frag	-0.008		-0.059		0.373	
Observations	375		375		375	

Note: LSDVC estimation initialized with Arellano and Bond estimator; 50 bootstrap repetitions. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

The positive and significant coefficient on the lagged expenditure confirms a moderate persistency in the pattern of expenditure driven by capital expenditure. The coefficient associated to the variable of interest, *elec*, that represents the year in which a cycle is expected to be generated, is positive and signals a distortion of about 5.6% of total expenditure and 16.7% of capital expenditure. Current expenditure, on the other hand, is not significantly affected by the electoral timing. The counterfactual dummies, *preel* and *postel*, are never significant in all the models, verifying the predicted absence of expenditure variation both before and after an election. This figures indicate the presence of a cycle of the size of spending, determined by the electoral manipulation of capital expenditure. This result is consistent with the literature (Aidt et al., 2011).

Among the covariates, the dependency ratio shows a positive sign, indicating the lack of economies of scale in the provision of goods and services to the dependent population. The coefficient associated to the transfers per capita is positive and significant for current expenditure, but negative and non significant for capital spending. This result indicates that transfers from the central government are mainly used to finance ordinary and immediately realized spending, e.g. wages. The state of the regional economy, as proxied by the lagged GDP per capita, is always significant and positive,

¹⁶ The regressions are run using Stata version 12, and the command `xtlsdvc` (Bruno, 2005). The estimator has been initialized with the Arellano and Bond (1991) GMM estimator; the bias has been corrected according to the third level of precision proposed by Bruno (2005), that is the most precise; finally, the number of bootstrap repetitions has been set to 50. The author tested the robustness of the results to a variation of the initial dynamic panel estimator and the number of bootstrap repetitions, obtaining coefficients consistent with the ones presented in the paper. Results are available upon request.

suggesting pro-cyclical expenditure¹⁷. A decrease of total expenditure is associated with the mixed electoral rule implemented in 1995. The political variable *frag* is negative as expected, but never significant. The dummy *left* is negative and significant only in Model 2.

To check the robustness of these results to a variation of voters' awareness, in Table 3 we present the coefficients obtained from the estimation of Equation 2. The nine models differ according to the type of press variable that is included: the local diffusion of all the newspapers (*ALL*), of the economic newspapers (*ECO*) and of the non economic newspapers (*GEN*), as specified on the second row of the Table, and the dependent variable used (specified on the third row). The press variables are included both in absolute level and interacted with the *elec* dummy, to measure their average term effect vs. their electoral effect. The interacted terms conflict with the electoral dummies and reduce dramatically the significance level of the coefficients, therefore they have been omitted in the estimation¹⁸.

The results of Model 1 indicate that a marginal increase in the local diffusion of newspapers is associated to an increase of total expenditure; nonetheless, it is very small (+0.026%) and never significant as expected. During the year in which the cycle is generated, on the contrary, a marginal increase in the diffusion of local newspapers is associated to a significant decrease of total expenditure if compared to the effect during the other years. The coefficients suggest that if the diffusion of local newspapers doubles during the electoral year, total expenditure decreases by about 2.8% with respect to non electoral years. This figure confirms the role of press in increasing the transparency of the incumbents' decisions and the awareness of the voters close to elections. This pattern is verified also in Model 2 and Model 3, but the coefficient associated to electoral economic newspapers (-0.011) is smaller than the coefficient associated to general-interest newspapers (-0.2); this result, although non expected, gives support to the hypothesis of general-interest press in providing information to voters that were not previously informed. If economic newspapers are complement and not substitutes for general-interest ones, economic readers already detain the stock of information that general-interest press supplies¹⁹.

Models 4-9 replicate the estimation using current and capital expenditure as dependent variable. The results show that the local diffusion of press does not influence current expenditure (Models 4-6). This result is consistent with the lack of electoral cycles in current expenditure in Table 3: if the spending is not manipulated before elections, there is not any distortion to correct. The coefficients in Models 7-9, on the other hand, verify a negative correlation between the diffusion of newspapers during the electoral year and capital expenditure. As the government uses capital expenditure as a signal before election, and voters' fiscal myopia makes the signal useless during the other years, the PBC decision is affected by the degree of voters' awareness only according to the timing of the legislature. The coefficients of the interacted term in Model 6 and Model 9, moreover, are always larger than the one of the interacted term in Model 5 and Model 8, confirming the key role played by newly informed voters with respect to more specifically informed voters.

¹⁷ The results are robust to the exclusion of the lagged GDP per capita.

¹⁸ Running the regressions without the interacted term and the electoral dummies we obtain a pattern of cycling during the period 1984-2008 that is consistent with the results obtained in Table 3. We also estimated a set of regressions where the electoral dummies have been substituted with a counter of the legislature. The coefficient associated the counter was never significant, as probably the conflict was not completely wiped out. All these results are available upon request.

¹⁹ Individual data on the readers is not available, therefore this assumption cannot be tested here.

Table 3. Estimation of Equation 2, 1984-2008

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Type of model:	ALL	ECO	GEN	ALL	ECO	GEN	ALL	ECO	GEN
Dep. Var.	Lntxppc	Lntxppc	Lntxppc	Lncxppc	Lncxppc	Lncxppc	Lnkxppc	Lnkxppc	Lnkxppc
Dep. Var. lag	0.132 *	0.129 *	0.132 *	0.062	0.056	0.062	0.521 ***	0.508 ***	0.521 ***
Lndensity	-0.09	-0.052	-0.094	0.627	0.598	0.628	-2.218	-2.13	-2.225
Lndepratio	1.002 ***	1.055 ***	0.987 ***	0.711 **	0.63 **	0.717 **	1.767 **	1.979 ***	1.747 **
Lntgrpclag	0.007	0.007	0.007	0.007	0.008	0.007	-0.013	-0.013	-0.013
LnGDPpclag	1.043 ***	1.027 ***	1.047 ***	1.095 ***	1.126 ***	1.094 ***	0.671 ***	0.626 ***	0.674 ***
Left	-0.022	-0.024	-0.022	-0.063 *	-0.06 *	-0.063 *	0.1	0.093	0.1
Maj	0.005	0.002	0.001	-0.061	-0.063	-0.06	0.407	0.393	0.401
Frag	-0.207 ***	-0.216 ***	-0.207 ***	-0.148 ***	-0.143 ***	-0.147 ***	-0.297 ***	-0.324 ***	-0.295 ***
LnNews	0.026			0.005			0.059		
LnNews*elec	-0.028 *			-0.004			-0.066 **		
LnEcon_n		0.05			-0.05			0.143	
LnEcon_n*elec		-0.011 **			-0.002			-0.036 ***	
LnGen_n			0.017			0.01			0.052
LnGen_n*elec			-0.02 *			-0.00			-0.06 **
Observations	375	375	375	375	375	375	375	375	375

Note: LSDVC estimation initialized with Arellano and Bond estimator, 50 bootstrap repetitions. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

4.2. The evolution of the expenditure cycles

The electoral and fiscal reforms of the mid-1990s modified the mechanism of accountability in Italian sub-national governments by strengthening the link of responsibility between the incumbent politicians and voters. According to the literature, an increase of electoral accountability decreases PBC (Gonzales, 2002). At the same time, a shift from a proportional electoral rule to a mixed one reduces electoral manipulations of the size of the budget, but increases distortions in its composition. In fact, the majority rule incentivizes the politicians to reduce universalistic – or ‘welfare’ – expenditure and target spending towards those groups that are decisive for their re-election (Persson and Tabellini, 2002). All in all, we expect that these reforms have dis-incentivized the reduction of the cycle of spending size, and generates expenditure targeting. We therefore predict a lack of cycles in total expenditure after 1995, and a simultaneous increase of the more targetable item of spending, that is not possible to define *a priori*.

In this Section we estimate Equation 1 and Equation 2 separately on the two time subsamples 1984-1995 and 1996-2008²⁰.

The results of the estimation of Equation 1 are presented in Table 4. We find expenditure cycles in all the items of expenditure before 1995, as the positive and significant coefficients on the *elec* variable in Models 1, 2 and 3 indicate. The *preel* dummy is never significant, as expected; the *postel* variable, on the other hand, before 1995 is positive and significant only in Model 1. The largest coefficients, however, are associated to the year in which the cycle is expected to be observed, indicating the presence of cycles in the size of expenditure. From 1996 onwards, however, the electoral variation of total expenditure is not significant anymore (Model 4), while current expenditure decreases (Model 5) and capital expenditure increases (Model 6). The findings of the time investigation therefore suggest the replacement of the cycles in the size of public expenditure with targeted spending cycles, that modify the composition of the budget²¹.

Finally, in Table 5.1 and 5.2 we report the results of the regressions including the local press diffusion as in Equation 2, separately for the two time sub-samples.

²⁰ The first direct election of the President of the Region was held in 2000. The threshold-year 1995 has been chosen to capture the whole cycle of the last election before this reform, i.e. 1993-1994-1995.

²¹ As the regional budget data disaggregated by function are not available for a sufficient time period, this hypotheses cannot be tested on a more detailed composition of the budget.

Table 4. Estimation of Equation 1 on the two time subsamples

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
<i>Time period</i>	<i>Pre 1995</i>		<i>Pre 1995</i>		<i>Pre 1995</i>		<i>Post 1995</i>		<i>Post 1995</i>		<i>Post 1995</i>	
<i>Dep. Var.</i>	<i>Lntxppc</i>		<i>Lncxppc</i>		<i>Lnkxppc</i>		<i>Lntxppc</i>		<i>Lncxppc</i>		<i>Lnkxppc</i>	
Dep. Var. lag	0.077		0.003		0.476	***	0.269	**	0.32	***	0.371	***
Lndensity	-0.726		-0.63		0.085		-0.448		0.336		-4.05	
Lndepratio	0.669		0.195		1.876		1.21	**	0.867		1.465	
Lntgrpclag	0.014	*	0.017	**	-0.014		0.023		0.035	**	-0.08	
LnGDPpclag	1.079	***	1.033	***	0.952	***	0.84	***	0.876	***	0.274	
Preel	0.004		0.026		-0.057		-0.014		-0.024		0.077	
Elec	0.137	***	0.07	*	0.328	***	0.004		-0.045	***	0.175	***
Postel	0.082	**	0.051		0.119		-0.059	**	-0.031		-0.162	*
Left	-0.267	***	-0.354	***	0.036		-0.02		-0.044	**	0.035	
Maj	-0.261	***	-0.137	***	-0.524	***						
Frag	0.114		0.057		0.767	**	-0.348		-0.391		-1.051	
Observations	196		196		180		180		180		196	

*Note: LSDVC estimation initialized with Arellano and Bond estimator, 50 bootstrap repetitions. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.*

Table 5.1. Estimation of Equation 2, 1980-1995

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7		Model 8		Model 9		
Type of model:	ALL		ECO		GEN		ALL		ECO		GEN		ALL		ECO		GEN		
Dep. Var.	Lntxppc		Lntxppc		Lntxppc		Lncxppc		Lncxppc		Lncxppc		Lnkxppc		Lnkxppc		Lnkxppc		
Dep. Var. lag	0.087		0.09		0.087		-0.008		-0.017		-0.01		0.552	***	0.541	***	0.551	***	
Lndensity	-0.747		-0.585		-0.73		-0.763		-0.22		-0.774		0.669		0.251		0.734		
Lndepratio	0.765		0.937		0.755		0.132		0.1		0.089		2.265		2.496		2.328		
Lntgrpclag	0.009		0.008		0.009		0.014	*	0.013		0.014	*	-0.021		-0.019		-0.021		
LnGDPpclag	1.051	***	1.084	***	1.06	***	1.019	***	1.158	***	1.017	***	0.863	**	0.719	*	0.893	**	
Left	-0.258	***	-0.26	**	-0.26	***	-0.355	***	-0.342	***	-0.353	***	0.07		0.043		0.068		
Maj	0.173		0.172		0.17		0.076		0.061		0.072		0.906	*	0.924	*	0.903	*	
Frag	-0.198	***	-0.214	***	-0.2	***	-0.092	*	-0.102	*	-0.089	*	-0.434	***	-0.446	***	-0.44	***	
LnNews	0.111						0.137						-0.045						
LnNews*elec	-0.03						-0.009						-0.104	**					
LnEcon_n			0.036						-0.087						0.196				
LnEcon_n*elec			-0.016						-0.006						-0.052	**			
LnGen_n					0.1						0.144						-0.087		
LnGen_n*elec					-0.03						-0.01						-0.102	**	
Observations	180		180		180		180		180		180		180		180		180		180

Note: LSDVC estimation initialized with Arellano and Bond estimator, 50 bootstrap repetitions. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 5.2 Estimation of Equation 2, 1996-2008

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7		Model 8		Model 9	
Type of model:	ALL		ECO		GEN		ALL		ECO		GEN		ALL		ECO		GEN	
Dep. Var.	Lntxppc		Lntxppc		Lntxppc		Lncxppc		Lncxppc		Lncxppc		Lnkxppc		Lnkxppc		Lnkxppc	
Dep. Var. lag	0.283	*	0.277	*	0.282	0.373	***	0.367	***	0.379	***	0.35	***	0.351	***	0.351	***	
Lndensity	-0.467		-0.445		-0.48	0.277		0.362		0.287		-3.835		-4.678		-3.813		
Lndepratio	1.253	*	1.138		1.258	0.683		0.76		0.643		1.519		1.662		1.657		
Lntgrpclag	0.012		0.012		0.013	0.029	*	0.03	*	0.029	*	-0.114		-0.11		-0.114		
LnGDPpclag	0.81	***	0.814	***	0.811	0.793	***	0.791	***	0.79	***	0.325		0.223		0.327		
Left	-0.011		-0.012		-0.011	-0.042	*	-0.04	*	-0.042	*	0.062		0.073		0.065		
Frag	-0.29		-0.308		-0.288	-0.388		-0.37		-0.386		-0.688		-0.581		-0.656		
LnNews	0.111					-0.033						0.111						
LnNews*elec	-0.008					0.012	*					-0.071	**					
LnEcon_n			-0.006					0.038						-0.436				
LnEcon_n*elec			-0.004					0.006	*					-0.034	**			
LnGen_n					0.1					-0.047						0.218		
LnGen_n*elec					-0.008					0.012	*					-0.068	**	
Observations	196		196		196	196		196		196		196		196		196		196

Note: LSDVC estimation initialized with Arellano and Bond estimator, 50 bootstrap repetitions. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

The coefficients of Table 5.1 and Table 5.2 show that the effect of the press diffusion is significant only according to the timing of the legislation. The non interacted term, in fact, is never significant and switches its sign across the Models.

The coefficients of the interacted terms indicate that before 1995 press diffusion constrains electoral capital spending (Table 5.1); also current and total expenditure are negatively affected by the electoral diffusion of press, but their coefficients, surprisingly, are never significant. Since capital spending is the category subject to the largest electoral manipulation, the magnitude of the distortion might have determined its high statistical significance level, with respect to the lack of significance associated to the other categories. After 1995, as reported in Table 5.2, the diffusion of newspapers becomes significant also in those models using current expenditure as the dependent variable. The sign associated to the coefficients, however, are positive. This result, matched with those of Table 4, shows evidence of a cycle of spending composition.

All in all, the empirical predictions on the evolution of PBC have been confirmed. According to the results, in fact, politicians stop manipulating electoral total spending after 1995, but they increase capital expenditure and reduce current expenditure. Press diffusion, as expected, makes the fiscal decisions more visible and works in the opposite way, constraining the increase of electoral capital expenditure and mitigating the reduction of current expenditure. The specificity of the news, once again, confirms that economic press has a smaller effect on spending than general-interest press, independently from the considered time period.

5. Conclusions

This paper investigates the impact of the local diffusion of newspapers on the expenditure cycles in Italian Regions, analyzing the time pattern of PBC before and after the introduction of the fiscal and electoral reforms in 1995, and separating the effect of economic from general-interest press.

The empirical results verify the presence of a cycle in the size of expenditure during the period 1984-2008, by detecting an increase of total expenditure close to elections. The replication of the analyses on time subsamples of the dataset reveals that these results are driven by cycles of total expenditure before 1995, but not after that year. The shift from a cycle in the size to a cycle in the composition of expenditure is confirmed by the presence of an electoral increase of capital expenditure both before and after 1995, associated to a positive electoral variation of current expenditure before 1995 and a decrease after that year.

Voters' awareness, proxied by the local diffusion of newspapers, has an effect on expenditure only according to the electoral timing of the legislature. In particular, in the full time period it has an average negative electoral effect on both capital and total expenditure. The time disaggregated analyses, however, shows that the variation of the diffusion of press dramatically reduced the effect on capital expenditure, i.e. from -10% to -7% for general-interest press, from -5% to -3% for economic press. The effect on current expenditure, on the other hand, is not significant before 1995, while after that year it is positive and significant (1.2% for general-interest press, 0.6% for economic press). These results are explained with the increased concern of the incumbent government about the visibility of their fiscal manipulation, concentrated on capital expenditure, as next election gets closer. To avoid the revelation of his strategy and the consequent punishment (failed re-election) by the voters, they find it rational to reduce the distortion in capital expenditure. After 1995, when elections affect the composition rather than the size of the budget, politicians increase capital expenditure and reduce current expenditure. Press diffusion, as expected, increases the visibility of the fiscal decisions and works in the opposite way, constraining the increase of electoral capital expenditure and mitigating the reduction of current expenditure.

The specificity of the news content in our dataset is less important than in the theoretical models. Although economic and general-interest newspapers are associated with the same sign across the

estimations, general-interest newspapers systematically show the largest coefficients. This result is unexpected, but in line with the existing literature that emphasizes the role of newly informed voters (Prat and Stromberg, 2006). Voters' awareness, therefore, depends on the amount of information gathered by the voters, not its specificity.

This paper contributed to the literature in two main directions. First, it illustrated the evolution of PBC from cycles in the size to cycles in the composition of expenditure in the same country. Future research should investigate this issue in other environments and with respect to different (and possibly repeated) institutional changes. Secondly, it estimated the correlation between the diffusion of newspapers and the expenditure decision. The largest impact of general-interest press found in this work is consistent also with a scenario where voters re-elect politicians rather than policies, updating their electoral beliefs with ideological and private life information rather than fiscal decisions. Since this correlation necessarily passes through popularity concerns, further research is called to investigate the weight of economic and general-interest news on the individual voting decision. The classification of newspapers may also be differently specified to control, for example, for the incumbency bias or local vs. national newspapers. Finally, as the 'press divide' became larger in the very recent years and digital media tend to be considered much more transparent and reliable than other sources of information, future studies should incorporate also the role of these news providers.

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APPENDIX

A.1 List of newspapers classified as 'general-interest'

1. Adige	24. Gazzettino	47. Tribuna di Treviso
2. Arena	25. Lavoro	48. Leggo
3. Avvenire	26. Mattino	49. Libero
4. Corriere Mercantile	27. Messaggero	50. Libertà
5. Corriere di Rieti	28. Messaggero Veneto	51. Manifesto
6. Corriere della Sera	29. Piccolo	52. Mattino di Padova
7. Corriere dell'Umbria	30. Quotidiano	53. Nuova Venezia
8. Corriere di Viterbo	31. Resto del Carlino	54. Nuovo Quotidiano di Puglia
9. Dolomiten	32. Tempo	55. Occhio
10. Eco di Bergamo	33. Tirreno	56. Padania
11. Epolis	34. Indipendente	57. Provincia pavese
12. Gazzetta del Mezzogiorno	35. Gazzetta di Parma	58. Paese sera
13. Gazzetta del Sud	36. Gazzetta di Reggio	59. Quotidiano della Calabria
14. Gazzetta di Mantova	37. Altoadige	60. Quotidiano di Sicilia
15. Giornale	38. Nazione	61. Repubblica
16. Giornale di Brescia	39. Notte	62. Sannio
17. Giornale di Vicenza	40. Nuova Basilicata	63. Secolo d'Italia
18. Giornale Italia	41. Nuova Ferrara	64. Secolo XIX
19. Giornale dell'Umbria	42. Nuova gazzetta di Modena	65. Stampa
20. Giorno	43. Nuova Sardegna	66. Taranto news sera
21. Centro	44. Provincia di Como-Lecco	67. Unione sarda
22. Corriere Adriatico	45. Provincia di Cremona	68. Unità
23. Giornale di Sicilia	46. Sicilia	

A.2 Data sources

Total exp,	Italian Institute of Statistics (ISTAT),
Current exp,	Finanza locale: entrate e spese dei bilanci consuntivi
Capital exp,	(Comuni, Province e Regioni), paper yearbooks from 1980 to 2004,
Grants	online publications from 2005 to 2009. Link: http://www.istat.it/
Density,	Italian Institute of Statistics (ISTAT), Sistema di Indicatori Territoriali
Depratio	Link: http://sitis.istat.it/sitis/html/
Preel,	Italian Ministry of Interiors, <i>Archivio storico delle elezioni</i>
Elec,	Link: http://elezionistorico.interno.it/
Postel,	
Left,	
Frag	
News, Eco_n,	ADS (Accertamenti Diffusione Stampa)
Gen_n	

A.3 Descriptive statistics of the dataset

Variable	Mean	Std. Dev.	Min	Max
Total exp, ths euro	1.473	0.816	0.050	4.364
Current exp, ths euro	1.176	0.639	0.027	3.429
Capital exp, ths euro	0.297	0.311	0.017	2.274
Density, per square km	200.280	105.052	59.130	427.680
Depratio	49.636	4.115	39.190	61.470
Grants, ths euro	0.525	0.476	0	2.946
GDP, ths euro	55385.33	56122.22	1587	320621
Preel	0.200	0.400	0	1
Elec	0.200	0.400	0	1
Postel	0.202	0.402	0	1
Left	0.458	0.499	0	1
Maj	0.567	0.496	0	1
Frag	0.691	0.134	0.128	0.880
News	0.074	0.039	0.016	0.247
Eco_n	0.005	0.002	0	0.012
Gen_n	0.069	0.037	0.015	0.240
Termcount	2.918	1.433	1	5

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