

The Political Cost of Being Soft on Crime: Evidence from a Natural Experiment

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Abstract

We study voters' response to criminal justice policies by exploiting a natural experiment. The Italian collective pardon, promoted and implemented by the national government in 2006, unexpectedly released about one third of the prison population. The collective pardon law created idiosyncratic incentives to recidivate across pardoned individuals. Municipalities where resident pardoned individuals had a higher incentive to recidivate experienced a higher recidivism rate. We show that in those municipalities voters "punished" the incumbent national government in the 2008 parliamentary elections. In particular, our estimates suggest that - in an average municipality - an additional crime by pardoned individuals led to a drop of 272 votes (1.77% of eligible voters) for the incumbent national government relative to the opposition coalition. We also provide evidence of newspapers being more likely to report crime news involving pardoned individuals and of voters hardening their views on the incumbent national government's ability to control crime. Our findings indicate that voters keep politicians accountable by conditioning their vote on the perceived effects of public policies.

JEL-Codes: D720, K420.

Keywords: accountability, retrospective voting, natural experiment, crime, recidivism, media.

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1 Introduction

Crime is perceived as a crucial social issue in most western countries. In the Eurobarometer survey, for instance, crime ranks among the first five (out of 15) most important perceived problems in several European countries (Mastrorocco and Minale, 2018).¹ Accordingly, there is a widespread belief that criminal justice policies have a significant impact on voting behavior.² In particular, elected officials seem to believe that being soft on crime does not pay off (Levitt, 1997; Huber and Gordon, 2004; Murakawa, 2014; Lim *et al.*, 2015). Nevertheless, despite the importance of this issue for potential voters and the observed behavior of elected officials, existing studies on the link between crime control policies and voters' behavior are mostly correlational and provide mixed evidence (Hall 2001; Krieger 2011). Thus, we know very little about whether voters respond to crime policies.

This paper exploits an original case study, based on a natural experiment, to study how voters respond to criminal justice policies. To the best of our knowledge, this is the first study to provide evidence concerning voters' response to crime control policies in a quasi-experimental setting. More generally, our study is informative on how voters assess policymakers in the presence of incomplete information, a broader and fundamental question in political economy (Barro, 1973; Ferejohn, 1986; Fearon, 1999; Persson and Tabellini, 2002; Besley, 2006; Ashworth, 2012; Duggan and Martinelli, 2017)

In July 2006, the Italian center-left (CL) national government implemented an unexpected collective pardon involving the release of the 37 percent of the total prison population. All the inmates with a residual sentence of less than 3 years were released in August 2006. The policy was designed in such a way that released prisoners recidivating within a five-year period would be given an additional sentence equal to their remaining sentence at the time of their release. This provision of the bill had a bearing on pardoned individuals' incentives to recommit crime after release from prison since it commuted 1 month of time of the original sentence to be served

¹Concerns on crime are shared by citizens on both sides of the Atlantic. According to Krisberg and Marchionna (2006), the 74% of US citizens are somewhat or very concerned about the problem of crime in their communities, and 79% are concerned or fearful about the annual release of 700,000 prisoners. See also Enns (2014) for evidence on public support for tough crime policies.

²According to press accounts, if in 1994 Bill Clinton “hadn't embraced a “tough on crime agenda” [he] might never have become—or remained—president” (*The Atlantic*, May, 2015). Similarly, Michael Dukakis' defeat in the 1988 US presidential elections is commonly seen as being largely due to his “soft on crime” record as a Governor of Massachusetts (*The New York Times*, July 5, 1988 and the Willie Horton ad).

in prison in 1 month more of an eventual sentence for future crimes. Drago *et al.* (2009) exploit this empirical design to show that individuals' propensity to recommit a crime is influenced by their remaining sentence at the date of release: a higher remaining sentence strongly discourages future recidivism. The quasi-experimental nature of the variation is based on the fact that conditional on the original sentence, the incentive to recidivate (determined by the remaining sentence at the date of release in August 2006) depends only on the date of entry into prison which is plausibly random (Drago *et al.*, 2009).³

In this paper, we aggregate this individual heterogeneity in the remaining sentences at the municipality level. As we have information on the municipality of residence of the former inmates released, we can rank municipalities according to their inmates' incentive to recommit an act of crime (the higher the residual sentence the lower the incentive to recidivate). We study if voters punish the incumbent national government which approved the pardon by exploiting municipal variation in the remaining sentence and the resulting different effects of the policy at the local level. Restricting the sample to cities with at least one inmate released, the 75 and the 50 percent of them have less than 4 and 2 pardoned individuals, respectively, with bigger cities having a much larger number of pardoned individuals. Hence, we observe that there is sufficient meaningful variation in the incentive to recidivate (that translates into variation in recidivism rates) across the more than 2,000 municipalities where released inmates live. Overall, while voters were not aware of the incentive to recidivate of pardoned individuals (the average residual sentence was not in the public sphere), they were exposed to different recidivism and crime rates depending on whether their municipality was associated with a high or low average residual sentence of released inmates.

In estimating the voters' response to the local effects of the policy, the identifying assumption is that the incentive to recidivate in a municipality is exogenous once we control for the average original sentence of pardoned inmates. In practice, once we control for length of the original sentence, the date of admission to prison—determining the remaining sentence at the date of release—should not be systematically correlated with voters' behavior or city level characteristics.

³As an example, consider two inmates who committed an act of crime in 2002 and they were convicted with a sentence of 5 years. In August 2006, as they have a residual sentence of less than 3 years, they are released. Any difference in their residual sentence (that will sum up to an eventual sentence for a future act of crime) depends on the different date of admission in prison in 2002.

If this assumption holds - as several placebo and balancing tests suggest - potential spatially correlated boom and busts in prison entry should not be correlated with the cross-sectional municipal variation or pre-trends in voters' behavior.⁴ Hence, the design allows us to exploit a margin of variation in the effects of the collective pardon which voters might directly map into the government's policy.

We show that a higher average incentive to recidivate translated into a worse policy outcome at the municipal level (a higher recidivism and crime rate) and into a harsher electoral "punishment" of the incumbent national government. In term of voters' electoral response, a one standard deviation increase in the incentive to recidivate at the municipal level resulted in a 3% increase in the margin of victory of the opposition (center-right, CR) coalition in the post-pardon national elections in 2008 relative to the pre-pardon ones in 2006. As we explain in greater details in the paper, these effects are not negligible. In terms of political cost, our estimates suggest that—in an average municipality—an additional crime by pardoned individuals led to a drop of 272 votes (1.77% of eligible voters) for the incumbent national government relative to the opposition coalition.

We also investigate the underlying mechanism linking public policies and electoral behavior (voters' information and beliefs). First, we assemble an original dataset of local news on acts of crime committed by former inmates', news with explicit reference to the fact that they were released because of the pardon. Second, we match local news to the municipalities (from which this news derives) to create a measure of exposure at municipal level to the effects of the pardon. Consistent with the idea that a driver of the information on the local effects of the policy is our measure of the incentive to recidivate, we show that newspapers were more likely to report news on recidivism by pardoned individuals in municipalities where their incentive to recidivate was higher. This provides evidence that voters are most likely to receive a negative signal on the realized effects of the policy in such municipalities.

The higher recidivism rates induced by a higher incentive to recidivate not only led to more news on the effects of the policy but also to an updating of voters' beliefs on the valence of the incumbent government. In particular, by gathering data from two independent surveys, we

⁴In fact, we show that the average residual sentence at the municipal level is not correlated with voters' behavior before the bill or with observable municipality characteristics, which is consistent with the identifying assumption.

show that voters were more likely to report a negative assessment on the incumbent national government’s ability to control crime in municipalities where the incentive to recidivate was higher. In addition, in these municipalities voters held worse posterior beliefs on the incumbent government’s type and its overall competence.

To further investigate the link between voting behavior and the local effects of the pardon, we present evidence suggesting that the voters’ inference and electoral response were specific to the policy at stake. In particular, we show that a higher incentive to recidivate was *not* associated with individuals being more likely to perceive crime as the most important issue in Italy or, indeed, in the area where they live. This suggests that individuals correctly associated the collective clemency bill with the recidivism of pardoned individuals and not with crime more generally. Furthermore, a variation in the incentive to recidivate did not affect voters’ electoral behavior in European elections. That is, it did not shift voters’ ideological preferences more broadly or led them to “punish” the incumbent government coalition in domains where its competence in crime policies was not relevant. Finally, we exploit the circumstance that some of the MPs belonging to the opposition coalition voted in favor of the pardon in 2006. If voters are able to map the effects of the pardon into MPs political behavior, their response to the negative effect of the policy should less favor the opposition coalition in electoral districts where the percentage of its candidates who voted for the pardon was higher. We show that this was the case. In districts where a higher percentage of candidates of the opposition (center-right) parties voted in favor of the pardon, a higher incentive to recidivate translated into a smaller win margin for the opposition coalition in the 2008 elections (compared with districts with a lower percentage of center-right candidates who voted for the pardon).

Overall, besides providing evidence on voters’ response to crime policies, our results are informative for the academic debate on voters’ sophistication (Wolfers, 2002; Kendall *et al.*, 2014; Dal Bo *et al.*, 2018; Hopkins and Pettingill, 2018). Our findings suggest that voters respond to the observed effects of a public policy (both in terms of beliefs and behavior) in a way that is broadly consistent with retrospective voting models of electoral accountability.⁵

The paper is structured as follows. Section 2 provides background information regarding the 2006 Italian collective pardon bill and its political relevance in the 2008 Elections. Section 3

⁵See also Ansolabehere *et al.* (2014) for evidence that state unemployment in the US robustly correlates with evaluations of national economic conditions, and presidential support.

presents the data. Section 4 discusses the empirical strategy. Section 5 reports the effects of the policy on the recidivism of pardoned individuals at the municipal level and our main results on voters' electoral response to the effects of the collective pardon bill. Section 6 presents evidence shedding light on the mechanism behind the main results. Section 7 discusses interpretations of the empirical results. Section 8 concludes. The online appendix presents a retrospective voting model providing a theoretical framework for the empirical analysis. In addition, it describes in details the database on crime-related news. Finally, the online appendix contains additional tables and figures which are also discussed in the main text.

2 The 2006 Italian Collective Pardon Bill

Our empirical analysis exploits variations in the incentives to commit a crime that follow from the provisions of the collective pardon law approved by the Italian Parliament in July 2006 (Law 241/2006).⁶ The policy was designed, proposed and implemented by the incumbent center-left (CL, henceforth) government coalition elected in the April 2006 elections. It is important to remark that the policy was not part of the political platform of the CL coalition during the 2006 electoral campaign. The pardon was approved by both chambers of Parliament with a majority of two-thirds of the votes regarding each article of the law as required by the Italian Constitution for the implementation of an amnesty or a collective pardon (sec. II, art. 79). Hence, also a part of the center-right (CR, henceforth) coalition voted for the pardon bill, a circumstance that we exploit in the empirical section to give empirical support for the accountability mechanism. The main reason that induced the CL coalition government to design such a law and propose it to the Italian parliament as one of its first policy measures was a prison overcrowding emergency, a problem faced by many other countries, including California or France that recently had to enact some specific policy interventions.⁷ In the 1990s the Italian incarceration rate was constantly increasing while prisons and jails capacity remained substantially stable. Before the collective pardon the average overcrowding index was 131 inmates to 100 places in prison. For many years since the end of 90s, the Catholic Church, leftist parties and civic associations advocated laws

⁶Drago *et al.* (2009) describe in detail the institutional background of the Italian criminal law system and the process that led to the approval of the bill.

⁷See Lofstrom and Raphael (2013) for the case of California and Maurin and Ouss (2009) for the case of France.

alleviating the inhuman and degrading treatment in overcrowded jails.

The bill was approved on July 31, 2006 with immediate effects the day after. The main provisions of the collective pardon bill were the following. It granted a three years reduction in the length of detention for those who committed a crime before May 2, 2006. The exclusion of crimes committed after May 2 was announced at the beginning of the parliamentary debate of the pardon bill and rules out strategic behaviors of potential criminals during the months leading up to the approval of the law. The sentence reduction holds for a large number of offenses, including property, violent crimes, drug trafficking related offenses and white-collar crimes.⁸ Thus, as a first consequence of the pardon, an inmate convicted for a crime committed before May 2, 2006 was eligible for immediate release from prison as long as his residual sentence was less than three years. As a result, the prison population dropped from a total of 60,710 individuals on July 31, 2006 to 38,847 on August, 2006.

However, the law did not erase the offense or the punishment, the sentence reduction was conditional on the inmate's post-release behavior. Indeed, all those that benefited from the incarceration term reduction who recommitted a crime within five years, lost their right to pardon. In the five-year period following their release from prison, former inmates granted collective pardon faced an additional expected sanction equal to the residual sentence pardoned by the bill. Thus, as far as the residual pardoned sentence is as good as random, this conditional sentence suspension provided a random incentive to commit crime to former inmates. The following example helps clarifying how individual incentives to re-offend are randomized by the law. Consider two criminals convicted of the same crime, both inmates had a residual sentence of less than three years on July 31, 2006. As a consequence of the new law they are both released from prison on August, 2006. Suppose that the first individual had a residual sentence of one year and that the second entered prison one year after the first individual. Hence, the second inmate had a pardoned residual sentence of two years. Over the following five years, for any crime category, they face a difference in expected sentence of one year. For example, if they decide to commit a burglary that has a legal sentence of 3 years, the first individual would be sentenced to four years in prison (3 years for the burglary plus 1 year residual sentence pardoned by the collective pardon bill), while the second individual would be sentenced to five years (3

⁸Mafia related crimes, children abuse and terrorism were excluded from the pardon.

years plus 2 years of residual sentence). It is worth noting that the difference in the timing of admission to prison comes both from whether a criminal entered prison directly the day of apprehension or not and on when the crime was committed. We address potential threats to identification such as “crime wave” in Section 4.

2.1 The Collective Pardon and the 2008 Electoral Campaign

The July 2006 collective pardon bill put forward by the incumbent CL government represented a very relevant issue for Italian voters up to the next (early) national elections in April 2008. Figure 1 summarizes the timing of elections and of the collective pardon bill.⁹

The high relevance of this issue was the combined result of three main facts. First, the sharp drop in the incarceration rate created by this policy (Figure 2), was followed by an increase in the overall number of crimes, as shown by Figure 3 (a 12.4% increase in crimes between June and December 2006 compared with the 0.35% increase in the previous semester and with the 1.78% increase in the same semester of the previous year). Second, as illustrated by Table 1, the majority (51.3%) of the Italian population perceived the collective pardon bill to had induced a large increase in crime. An additional 27% stated that the pardon created a positive, yet limited, increase in crime. At the same time, consistently with the rationale behind our empirical investigation, Table 1 shows a significant heterogeneity in the perceived effects of the pardon across individuals (even conditional on political ideology). Finally, as shown by Figure 4, the space devoted to crime by national televisions substantially increased following the increase in crime resulting from the CL government’s decision to implement the collective pardon.¹⁰ In short, the pardon was followed by a substantial increase in crime in the period 2006-2008, the majority of Italian voters perceived such an effect and, last but not least, news media kept the

⁹Notice that, as pointed out Figure 1, the variation in the residual sentence of pardoned individuals exploited in our data comes exclusively from prisoners released in August 2006 (i.e., prisoners with a residual sentence lower or equal to 36 months).

¹⁰The observed decrease in the number of news on crime between the end of 2007 and June 2008 could be explained by two factors. First, the collapse of the incumbent government in January 2008 and the consequent early April 2008 Elections increased the space devoted to political news by news programs. That is, the higher *news pressure* due to the 2008 political events and electoral campaign is likely to have crowd out news on other topics (see Eisensee and Strömberg, 2007 for empirical evidence on the crowding-out effects of *news pressure* by newsworthy events). Moreover, the observed drop in the number of news on crime in the first semester of 2008, might also be explained by a sharper decrease in the number of news on crime after the 2008 elections when the center-right government took office, i.e., between April and June 2008 (Demos-Unipolis, 2009).

crime issue highly salient up to the April 2008 elections. Overall, the high relevance of the collective pardon bill and of its perceived effects on crime is likely to have been detrimental for the incumbent CL government coalition for two main reasons. The most obvious one is that the government was the one who proposed, designed and then implemented the bill. Hence, in terms of political accountability, the CL coalition was the main political actor who was responsible for the effects of such a policy. At the same time, the “crime issue” is typically *owned* by rightist parties, since they are the ones perceived by voters as the most competent in managing it (Petrocik, 1996; Puglisi, 2011). Accordingly, the CR coalition was the one most likely to gain from an increase in the relevance of crime (Belanger and Meguid, 2008; Aragonés *et al.*, 2015). We discuss these alternative mechanisms in Section 7.

3 Data

The empirical analysis builds upon several different datasets. The first dataset is on the characteristics of the prisoners released thanks to the 2006 collective pardon bill. The data contain information on the municipality where each prisoner has his residency, the length of his residual sentence at the time of release, the length of his original sentence and the type of crime committed. Overall, the data contains information on the entire population of individuals pardoned by the pardon bill. However, while the information on the municipality of residence of each Italian released prisoner is informative of his official residence, the information on the residency of foreign prisoners is not a reliable proxy of their place of residence. Hence, we exclude from the sample all foreign pardoned individuals. Accordingly, to reduce measurement error, we exclude municipalities with only foreigner released prisoners. As a result, this final dataset is composed by 12,355 Italian pardoned individuals resident in 2,256 municipalities. The summary statistics are reported in Table 2A where we average-out the data on the characteristics of pardoned individuals at the municipality level. Figure 5 illustrates the geographical distribution of the (standardized) average incentive to recidivate of pardoned individuals at the municipal level. This figure shows a substantial level of variation in the incentive to recidivate that is not correlated with any regional pattern (for example higher in the south or in the north or in any particular region). We will show that conditional on the average original sentence the

variation in the incentive to recidivate is orthogonal to observable city characteristics. If we were to analyze cities with a very large number of pardoned inmates, we would not have had enough variation in our key variable. However, the 70 and the 50 percent of cities have less than 4 and 2 pardoned individuals, respectively and the 90 percent have less than 9.

We then complemented this dataset with a second one. Namely, the electoral data on the 2006 and 2008 parliamentary elections by the Italian Minister of Internal Affairs, for all municipalities (even the ones with no pardoned prisoner). This dataset reports information on the votes to political parties in the 2006 and 2008 elections. Both elections were subject to the same proportional electoral law.¹¹ As we can see in Table 2B the CR and CL coalition lost some votes between the two elections, with the CR losing less than the CL. The difference in the win of margin of victory between 2008 and 2006 is on average 0.08 percentage points. One third of the municipalities in Italy had at least one pardoned individual. Table 2B summarizes the geographic, socio-economic and demographic characteristics at the municipal level that we use in the empirical analysis (which are provided by the Italian National Statistical Institute, ISTAT).

In order to analyze municipal-level variations in voters' information on the effects of the collective pardon, we extrapolated data (from the *Factiva* database) regarding news on crime events involving pardoned individuals for the period August 1, 2006 (i.e., post-pardon) up to March 30, 2008 (i.e., up to the 2008 elections). We then matched news with municipalities to create a measure of municipal-level exposure of voters to the effects of the pardon. The online appendix provides detailed information on the construction of this dataset. In addition, we use survey-level data from *i*) the Italian National Elections Study Survey (ITANES) to gather information on voters' issue priority and on voters' evaluation the incumbent center-left government's crime policies; *ii*) the IPSOS *Polimetro* to obtain additional information on voters' issue priority (both in Italy and in the municipality where they live) and on voters' overall evaluation of the main CL and CR parties.¹² In particular, the data from ITANES constitute a

¹¹The electoral law applying both to the 2006 and 2008 parliamentary elections was characterized by a proportional system, 26 electoral districts, and a majority premium granted to the electoral coalition obtaining the higher share of votes at the national level (for the lower chamber). The analysis focuses on the lower chamber as it is characterized by a larger number of MPs and of electoral districts. This allows us to exploit a higher degree of heterogeneity across districts when looking at the differential impact of the percentage of CR candidates who voted in favor of the pardon on voters' behavior (see section 5). Results are robust when looking at the upper chamber (senate) and they are available upon request to the authors.

¹²ITANES is research project on electoral behavior of the "Istituto Carlo Cattaneo Research Foundation" (www.cattaneo.org). IPSOS is one of the largest public opinion polling company in Italy (<http://www.ipsos.it/>).

post-election survey composed by around 2,800 individuals interviewed in the month after the 2008 elections. The dataset from the IPSOS *Polimetro* is composed by several waves of weekly and monthly interviews (for a total of around 28,000 interviews) starting after the 2008 elections up to December 2008. The summary statistics of these data are reported in Table 2B.

4 Empirical Strategy: The Pardon Bill as a Natural Experiment

The empirical strategy exploits the unique feature of the collective pardon bill providing that former inmates re-committing another crime will have to serve the residual sentence at the date of their release (August 2006) in addition to the new sentence. As we explained in the introduction, individuals with lower residual sentence are more likely to recidivate with respect to individuals with higher residual sentence (Drago *et al.*, 2009). Crucially for our study is the source of the variation in the residual sentence that we exploit to identify the effect of local variations in recidivism. For the same original sentence, inmates have different residual sentences depending on the date of entry into prison. The empirical analysis exploits the variation at the municipality level by aggregating this individual heterogeneity. Here we describe our main model and in the next section we discuss the source of variation and the potential threats to identification:

$$\Delta y_i = \alpha + \beta_1 \textit{incentive to recidivate}_i + \beta_2 \textit{original sentence}_i + \beta_3 \mathcal{I}_i + \beta_4 X_i + \beta_5 Z_i + \epsilon_i \quad (1)$$

where *incentive to recidivate* is defined as 36 minus the average residual sentence, where 36 is the maximum pardoned residual sentence according to the design of the bill.¹³ This variable is standardized to have mean zero and standard deviation equal to one and measures the average incentive to recidivate of pardoned individuals in municipality i . Δy is the difference in the political outcome of interest (the margin of victory of the CR coalition with respect to the CL coalition) between the national elections in 2008 and 2006. The variable *original sentence* indicates the average original sentence of former inmates resident in municipality i and \mathcal{I}_i represents

¹³According to our definition, an individual with one month of residual sentence has an incentive to recidivate equal to 35, whereas an individual with a 35 months residual sentence has a incentive to recidivate equal to one.

a dummy indicating whether there is at least one pardoned individual resident in the same municipality.¹⁴ X_i is a vector of controls at the municipal level including the municipal crime rate in 2005, the average taxable per capita income in 2008 and a set of municipal characteristics in Census year 2001 (see Table 2B). The last set of variables, Z_i , includes the number of pardoned individuals weighted by the municipality population (per 1,000 inhabitants) and all other observable demographics and “criminal” characteristics of former inmates resident in municipality i averaged at the municipal level (i.e., percentage of former inmates that were unemployed, married, with a primary school degree, a secondary school degree and with a university degree; percentage of former inmates convicted for drug crimes, for crimes against property, for violent crimes). For all the municipalities with $\mathcal{I}_i = 0$, that is municipalities with no pardoned individuals, all variables in Z_i as well as the original and the incentive to recidivate are set equal to zero.

In specification (1) the estimated coefficient β_1 measures the impact of one standard deviation increase in the average incentive to recidivate (around 8.2 less months of residual sentence) of former inmates from municipality i . The estimation of β_1 is obtained exploiting the variation in the average residual sentence for all municipalities with at least one pardoned individual. We keep all municipalities (also those with $\mathcal{I}_i = 0$) because in the estimation these contribute to estimating the residual variance of the set of variables X_i that is used to estimate our coefficient of interest.

Finally, while, later on, we show that our key variable of interest (the average incentive to recidivate) predicts recidivism at the municipal level (Table 5), in the main analysis we adopt a conservative approach and we present reduced form estimates instead of using it as an instrument for the crime rate at the local level since the exclusion restriction could fail. In fact, through general equilibrium effects the average residual sentence may impact the overall crime rate (e.g. through congestion effects, social interactions and spillover effects) - as we document later - and in turn voters’ welfare and electoral outcomes (Drago and Galbiati, 2012). This failure of the exclusion restriction may be exacerbated if the effect of the incentive to recidivate on the

¹⁴In order to obtain a more homogeneous sample, since all municipalities with at least one pardoned individual resident in the municipality have 500 inhabitants or more, we exclude all municipalities with no pardoned individuals with less than 500 inhabitants. Results are robust to including these municipalities in the analysis and they are available upon request to the authors.

overall crime rate is mediated by the news media and if this has an impact on the electoral outcome.¹⁵ Hence, we see β_1 as the voters' response to the effects of the policy implemented with the approval of the bill that includes the direct effect on recidivism and indirect effects mediated by the overall crime rate and news media.¹⁶

4.1 Identification, balancing tests and pre-trends

The specification (1) is a reduced form model estimating the effects of the costs imposed by the collective pardon to voters on the electoral outcomes. Our key identifying assumption is that conditional on the average original sentence of pardoned inmates, the incentive to recidivate is orthogonal to unobservable characteristics. The key source of variation is the the date of admission to prison. As explained above, conditional on the original sentence, inmates have different residual sentence because they entered prison in different dates. Admission to prison is determined by the day of apprehension (provided that a court decided to hold them in prison) or on the day in which they were sentenced. While we do not expect that at the individual the date of admission to prison is endogenous to future acts of crime (Drago *et al.*, 2009), in our empirical design, the question is whether the variation at the municipality level (which aggregates individuals' residual sentence according to their municipality where they live) is endogenous to voting behavior.

The first threat to identification is whether this variation in the residual sentence at the municipal level reflects heterogeneity in crime waves that municipalities may experience and if this heterogeneity is correlated with voting behavior for reasons that are unrelated the local effects of the policy. If inmates from the the same cities with similar characteristics entered prison in the same period, it is possible that observables and unobservables inmates' characteristics are correlated to the incentive to recidivate. In fact, we do expect this type of pattern if there are complementarities in crime of similar individuals from the same city (Drago and Galbiati 2012).

¹⁵At the same time, for the interested reader, Table A.10 in the online appendix reports the IV estimates.

¹⁶It is important to note that in the presence of inmates from municipality i at risk of recidivism in municipality j , our coefficient should be interpreted as a lower bound of the causal effect of the incentive to recidivate on electoral outcomes. If the mobility patterns are not correlated with the observed average residual sentence, we can interpret this as a classical measurement error leading to downward biased estimates of the causal effect of the average residual sentence. Indeed, when excluding municipalities more likely to be at risk of recidivism by individuals not resident in that municipality (e.g., provincial capital cities) the estimates are typically larger than the baseline ones.

In this case, we might observe some correlation between inmates’ observables and their residual sentence when we use city level regressions. Central to our design, this represents a threat to identification if these potential micro waves of criminals entering prison in the same period are correlated with voting behavior.

Two standard approaches address this concern. The first is to show balancing tests between the incentive to recidivate and city level characteristics. The second approach is to show the absence of pre-trends, namely the absence of any impact of the average residual sentence on elections held before 2006.

Tables 3A, 3B and 3C present results from the balancing tests. Specifically, in these tables we regress our main variable (the incentive to recidivate, standardized with mean 0 and SD equal to 1) on each of the variables X_i , conditional on the average original sentence and the indicator \mathcal{I}_i . As expected, the dummy \mathcal{I}_i and the original sentence predict the incentive to recidivate: the first is positive because we set the incentive to recidivate equal to zero when $\mathcal{I}_i = 0$, while the second is negatively correlated with the incentive to recidivate since we obviously have that a larger original sentence is associated with a lower incentive to recidivate (larger residual sentence). Indeed, the residual sentence is bounded from above and it is always lower than the original sentence. The correlation between some former inmates’ characteristics (Table A.2 in the online appendix) shows that in fact it is possible that in some cities similar inmates enter with the similar original sentences in the same period.¹⁷ However, none of the geographical, socio-economic or demographic variables X_i are significantly correlated with the incentive to recidivate (Tables 3A, 3A, 3C). In particular, it is worth remarking that the crime rate in 2005 and the number of pardoned individuals per 1,000 residents are both orthogonal to the incentive to recidivate. This evidence is consistent with our identifying assumption.

As for the presence of the pre-trends, in Table 4 we run a “placebo” specification where we use the main dependent variable (the differences between the win margin of the CR coalition) and the votes per eligible voters of the CR and CL coalitions in the 2006 elections with respect to the 2001 elections, at the municipal level. The dependent variables are pre-determined with respect to the effect of the average residual sentence. If the incentive to recidivate were to pick-up some existing trends in voters’ behavior, Table 4 should have shown a significant impact on

¹⁷However, the effect are modest and the coefficient on the incentive to recidivate when estimating (1) remains unchanged to the inclusion of these variables.

the incentive to recidivate on pre-2008 voting patterns. Instead, the results are consistent with the notion that the average incentive to recidivate of pardoned individuals released in August 2006 is orthogonal to any pre-trend in the votes to political coalitions in the previous elections. In fact, the point estimates not only are imprecisely estimated but more importantly they are very low in magnitude (compared to the estimates from our main regression, see below Table 6).

Another potential threat to identification derives from the observation that besides potential criminals, local crime is also a function of supply of police in the streets. One possible concern is that the supply of police responds to potential criminals released pursuant the Clemency Bill. In addition, if this response varies across cities, our coefficient of interest in model (1) may pick up the voters' reaction to the response of supply of policy in the streets. We note, however, that the supply of police is governed at the national level by the Ministry of Interior and Defense (*Polizia* and *Carabinieri*, respectively). There is no sensible variation in the relative supply across cities of these national police forces. In fact, the percentage of police across cities is historically determined. We observe some variation in the short-run (e.g. for football matches or political events involving threats to public order). On the other hand, local police (*Polizia municipale*), which contributes to a lesser extent to maintaining public order, is under the control of the mayor. Variation in the local police forces requires much time and it can be possibly related to the local political cycle. Since we measure the voters' response to collective clemency bill enacted by the parliament and Italian government by looking at the national election, we see these concerns not relevant in our setting. In the empirical section, we show results by controlling for province and region fixed effects. This exercise reassures that the results are robust when we exploit variation within regions and provinces that are possible geographical entities at which potential changes in police forces occur.

5 Results

5.1 Policy outcomes

The first and immediate effect of the collective pardon was a spike in crime - as documented in Figure 3. A fraction of this crime that is correlated to the public policy under analysis is

due to the recidivism of pardoned individuals.¹⁸ Table 5 shows the results from estimating variations of equation (1) in which the dependent variable is not the electoral outcome but the recidivism rate at the municipal level. In all the specifications we cluster standard errors at the provincial level. In this table, and in the following ones, we show results excluding (columns 1-3) and including (columns 4-6) municipalities with no pardoned prisoners. When looking at the number of pardoned individuals recommitting a crime after being released from prison, it is possible to observe that the idiosyncratic individual incentives to recidivate translates into different recidivism rates at the municipal level. Hence, in municipalities where the average incentive to recidivate of pardoned individuals is higher, the collective pardon bill translates into worse policy effects (higher recidivism rate). The effect is not trivial: a one standard deviation increase in the incentive to recidivate implies a 15.9 percent increase in the recidivism in a municipality with at least one pardoned individual (which is consistent with Drago *et al.*, 2009). In Table A.9 in the online appendix, we also document that the average residual sentence weakly increases the overall crime rate at the city level. Although recidivism coming from the pardon is arguably a small part of the overall crime rate, we are able to detect a correlation between our key driver of recidivism and crime.¹⁹

5.2 Voters' Electoral Response

Table 6 illustrates the main results. We estimate variations of equation (1) with ordinary least squares. The dependent variable is the difference in electoral win margin (in terms of total votes per eligible voters) of the CR coalition relative to the CL coalition between the 2008 and the 2006 national elections. As it is clear from Table 6 the incentive to recidivate, relative to the national election in 2006, has a positive effect on the margin of victory of the CR coalition.²⁰ The effect

¹⁸As in Drago *et al.* (2009), the recidivism rate is measured seven months after the release. This is less of a concern as long as we expect the residual sentence having an effect on the recidivism measured two years later. In fact, the estimates from Mastrobuoni and Rivers (2016) - that we use in Section 5.3 - show that the effect of the residual sentence is persistent at least up to 17 months after the pardon.

¹⁹Note that the spike in crime documented in Figure 3 takes place in the last semester of 2006 and the first of 2007. As at the municipal level we have yearly data, in Table A.9 we report results regressing crime rates in 2007.

²⁰This effect is essentially the same when we control for the number of pardoned individuals non-parametrically by including number of pardoned individual fixed effects. Identical results are also obtained when we control non-parametrically for the number of pardoned individuals per capita (by creating discrete intervals for this continuous variable).

of the incentive to recidivate is unchanged whether or not we control for inmates' characteristics (for example, in column (1) and (2)). The coefficients are precisely estimated. In our preferred specification in column (6), where we consider the sample of all municipalities and include municipal level controls, a one standard deviation increase in the incentive to recidivate (around 8.2 months less in the average residual sentence) leads to a 0.25 percentage points increase in the margin of victory of the center right coalition, corresponding to a 3 percent increase in its margin of victory (we discuss more in detail these magnitudes in the next section). Table A.3 in the online appendix reports the coefficients on all the variables included in the analysis.

The main results are essentially unchanged when we weight each observation with the number of eligible voters in 2008 (Table A.4 in the online appendix). Overall, the effect seems to be driven by the combined positive effect of the incentive to recidivate on the increase in the votes (per eligible voters) of the CR coalition and negative effect on the ones of the CL coalition (see Tables A.5 and A.6 in the online appendix). The coefficients are positive and statistically significant when we exploit the within-region variation by including region fixed effects (Table A.7). When we exploit within-province variation (Table A.8), the coefficients are not very different relative to Table A.7 but less precisely estimated. Despite the inclusion of indicators for regions (20) and provinces (109) absorbs useful variation, we still observe economically relevant effect of the incentive to recidivate. Since yearly variation of several variables such as police and federal transfers take place at the region and at the province level, the fact that we observe an effect of the incentive to recidivate in Table A.7 and Table A.8 reassures us that we are measuring the voters' response to the collective pardon rather than the voters response to other policies potentially correlated to the incentive to recidivate. Finally, we also provide in Table A.10 the IV estimates of the effect of recidivism on voters' electoral response. In this table we take as the reduced form the results provided in Table 6 and as the first stage those reported in Table 5.

There is another important piece of evidence that is consistent with an accountability mechanism. As discussed in Section 2, the CL coalition representing the incumbent government was clearly the one responsible for proposing, designing and implementing the bill. However, part of the CR coalition ended up voting in favor of it.²¹ We exploit the circumstance that some

²¹According to some policy reports (Eurispes, 2007), part of the CR voted in favor of the bill due to the fact that the pardon was extended to white-collar criminals (e.g., convicted for financial or tax-evasion crimes) who accounted for a very limited fraction of released prisoners.

center-right MPs might have also been held accountable by voters for the realized effects of the policy. If an accountability mechanism is at work, the voters’ response to the effects of the policy should favor less the CR coalition in electoral districts where the percentage of CR candidate voting for the pardon was higher.²² In order to test this hypothesis, we gathered data from the Italian Minister of Internal Affairs regarding the identity of all CR candidates in each electoral district in the 2008 elections. We then analyzed the voting records of each Italian MP regarding the 2006 collective pardon bill and classified each CR MP according to whether she/he voted in favor or against the bill.²³ Finally, we computed for each electoral district (typically sub-regional entities including hundreds of municipalities), the percentage of candidates of the main center-right party (i.e., PDL) in the 2008 elections who voted in favor of the collective pardon bill in July 2006.²⁴ Formally the model that we estimate is a variation of model 1:

$$\begin{aligned} \Delta y_{ij} = & \alpha + \alpha_1 \textit{incentive to recidivate}_{ij} + \alpha_2 \textit{original sentence}_{ij} + \alpha_3 \mathcal{I}_i + \alpha_4 X_{ij} + \alpha_5 Z_{ij} \\ & + \alpha_6 \textit{incentive to recidivate}_{ij} \times \% \textit{CR candidates who voted for the pardon}_j + \gamma_j + \epsilon_{ij} \end{aligned} \quad (2)$$

where Δy_{ij} is again the difference the margin of victory of the CR coalition with respect to the CL coalition between the national elections in 2008 and 2006. Unlike model 1 here we include the dimension of the electoral district j and electoral district effects (γ_j) that control for any selection of particular CR candidates into districts (we omit from the model the non-interacted variable *% CR candidates who voted for the pardon* that varies at the district level and would be absorbed by the electoral district fixed effects). In fact, selection in this case may be relevant especially for CR candidates who voted for the pardon bill.²⁵

Table 7 present the results of model 2 where the coefficient of interest is α_6 . Table 7 shows a negative and significant coefficient of this interaction term α_6 on the CR win margin between

²²The electoral law allowed only to express a preference for a party but not for a specific candidate. Hence, voters willing to hold accountable a candidate for her/his voting record on the pardon could have done so only through their voting choice pro/against the party she/he belonged to.

²³MP voting records are available at: http://www.camera.it/_dati/leg15/lavori/stenografici/sed033/v002.pdf.

²⁴The percentage of center-right candidates (of the main party) in a district who voted for the pardon goes from zero up to around 26% (on average 17.5%, with a standard deviation of 6%). Results are robust to excluding the districts in the “tail” of the distribution of candidates who voted for the pardon (i.e., the ones with a percentage equal to zero or above 25).

²⁵Controlling for electoral district fixed effects improves the precision of the estimates of the interaction term. Without electoral fixed effects the interaction terms remains negative but with larger standard errors.

the 2006 and 2008 elections. This suggests that the higher the percentage of CR candidates in a district who voted for the pardon, the lower the variation in margin of victory of the CR coalition. In other words, in districts where more candidates of the main opposition parties ended up voting in favor of the pardon, the CR gained relatively less votes and the CL lost relatively less votes. In terms of magnitudes, a one standard deviation in the incentive to recidivate at the municipal level implies an increase in the CR win margin of 14.2 percent in districts where none of the CR candidates voted in favor of the pardon. When we consider municipalities with at least one pardoned individual, where the median percentage of CR MPs who voted for the bill is 0.1538, we get the same baseline result as the one of Table 6.

To sum up this first part of the evidence, we observe that the CR coalition - the opposition coalition at the time when the pardon was approved - experienced an increase in its electoral support relative to the CL, in municipalities where the incentive to recidivate is higher. Moreover, this effect decreases with the presence of CR candidates who voted for the pardon.

5.3 Crime & Votes

In this section we provide a back-of-the-envelope calculation of the implied effect of one additional crime by a pardoned individual (i.e., one more recidivist) on the votes gained by the center-right coalition relative to the center-left one. While such calculation should be taken with caution, it may provide a useful assessment of the implied magnitude of our effects.²⁶

In order to obtain this implied effect, first we need to compute the average number of pardoned individuals committing a crime (i.e., recidivating) in a municipality. Then, we assess how the incentive to recidivate (i.e., the random component of the policy) affects such number. Finally, we relate the variation in the random component of the policy needed to induce one more recidivist with its corresponding impact in terms of votes.

The average number of pardoned individuals resident in a municipality is 5.48. Mastrobuoni and Rivers (2016) show that there is a 22% average recidivism rate of pardoned inmates up to 17 months after the pardon.²⁷ This implies that, in an average municipality, there are 1.2

²⁶We compute such magnitude for the subset of cities with at least one pardoned individual. Indeed, as we explained in Section 4, the estimation of our main coefficients of interests is obtained by exploiting the variation in the average residual sentence for all municipalities with at least one pardoned individual.

²⁷Our data on recidivism cover only a period up to seven months after the pardon, i.e., the information on the

individuals who re-committed a crime after the pardon (5.48×0.22). Table 5 shows that a one standard deviation increase in the incentive to recidivate increases the average recidivism rate by 15.9%. As a consequence, a one standard deviation increase in the incentive to recidivate would lead to 0.19 more pardoned individuals recidivating in the average municipality (0.159×1.2). Or, put it differently, a 5.3 standard deviations increase in the incentive to recidivate would lead to one more crime by pardoned individuals in such municipality. Given that the average gap of votes in favor of the center-right coalition in 2008 was equal to 1,702 and that a one SD increase in the incentive to recidivate leads to a 3% increase in the win margin of the center-right coalition (52 votes), this translates in one more crime by a pardoned inmate generating a gain of 272 votes for the center-right coalition relative to the center left one. Since the average number of eligible voters in 2008 was equal to 15,355, this corresponds to an additional crime leading to a relative gain for the center-right of 1.77% in terms of the overall pool of eligible voters (or, vice-versa, a relative loss of 1.77% for the center-left).

6 Additional Evidence: Information and Beliefs

We now provide additional evidence to unmask the link between the idiosyncratic component in the effects of the policy (the incentive to recidivate of pardoned individuals) with the voters' observed behavior in the 2008 elections. In particular, we show that a higher average incentive to recidivate translated also into *i*) a higher probability of observing crime news involving pardoned individuals, at the municipal level and *ii*) a worse evaluation of the incumbent government.

Voters' Information. In order to assess the effects of the incentive to recidivate on the information available to voters' about the effects of the pardon, we exploit the news about pardoned inmates re-committing a criminal act. As explained in the online appendix, these are news—extrapolated from the *Factiva* database—containing words related to crimes categories included in the pardon (theft, robbery, extortion, scam, murder, drug, burglary, beatings, domestic violence, rape, etc.) and containing at the same time words immediately identifiable with recidivism of pardoned inmates captures only a fraction of the relevant electoral period. Hence, we rely on the information provided by Mastrobuoni and Rivers (2016) to have a more meaningful figure of the average number of pardoned individuals who recidivate over the period of interest.

the collective pardon.²⁸ This exercise is helpful since voters' evaluation of the consequences of the collective pardon crucially depends on the information they receive about the recidivism of pardoned inmates. Table 8 shows how the pardoned individuals' incentive to recidivate maps into the news on crimes involving pardoned individuals at the municipal level. In columns (1)-(4) we discretize the number of news (at least one news) and use a Probit specification. In columns (5)-(8) we use the number of news and estimate a Poisson model (Table A.11 in the online appendix, reports OLS estimates for both dependent variables - at least one news and the number of news). Keeping constant the number of pardoned individuals per capita present in a municipality and all the other characteristics of former inmates, the higher the incentive to recidivate of pardoned individuals resident in that municipality, the more likely that newspapers report crime-news involving pardoned individuals in the post-pardon period up to the 2008 elections. Therefore, the different policy effects of the collective pardon bill across municipalities due to the idiosyncratic incentives of pardoned individuals to recidivate, translate into different information on the effects of such a policy available to voters living in different municipalities. For example, in Column 2 the coefficient implies that one standard deviation increase in our key variable implies a 1.1% higher probability of having newspapers (in our sample) reporting at least one crime-news involving pardoned individuals in a given municipality. Although this effect may not seem large, it is worth remarking that *Factiva* does not contain the universe of local news available to voters. At the same time, news media are not necessarily the only channel of information on the effects of the public policy for voters. For example, voters may also receive a private signal via a direct experience (e.g., being a victim of a crime committed by a pardoned individual) or an indirect one (e.g., knowing someone who had such a direct experience). While we cannot clearly test these potential additional channels, we expect the direction of the effects to resemble the one observed for crime-related news reported by media outlets.

Voters' Posterior Beliefs. After having documented that the pardoned individuals' average incentive to recidivate affects recidivism and media coverage of their crimes at the municipal level, we now look at how the average incentive to recidivate affects voters' perceptions about the incumbent CL government. Using the responses to the ITANES post-electoral survey, in Table 9 we look at the effects of the incentive to recidivate on voters' perceptions about the CR and

²⁸The online appendix presents some examples of this type of news.

CL coalitions' competences to deal with crime. In column 1 we investigate whether the incentive to recommit a crime at the municipality level led voters to consider crime the most important issue that the government should face. From the full sample of about 2800 individuals, there is no compelling evidence that our margin of variation translated into a general increase in the relevance of crime (a finding that we use later to investigate the mechanism).

The survey asks specific questions on the ability of the CL and CR to deal with crime to the sub-sample of individuals (about 350) that responded yes to the first question (crime is the main issue government should face). The results in column (2)-(4) of Table 9 show that individuals living in municipalities where pardoned individuals have a higher average incentive to recidivate are more likely to report a worse evaluation of the CL incumbent government crime control policies and, in general, of the ability of the center-left to deal with crime. The coefficient reported in column 2, for example, implies a 1.66 percentage points (4.14%) higher probability of reporting an overall negative evaluation of the CL coalition's crime control interventions following a one standard deviation increase in the incentive to recidivate.

We find evidence in line with Table 9 from another dataset (IPSOS surveys). We first assess whether the incentive to recommit a crime is associated with an increase of the relevance of crime in Italy and in the municipality for the voters. From column 1 and 2 of Table 10 that reports the results, we find again that the incentive to recommit a crime does not increase the relevance that voters attach to crime. Next, we are able to investigate whether the negative perception of the CL incumbent in dealing with crime (Table 9) is also associated with a general more negative evaluation of the CL.²⁹ Table 10 shows that when the incentive to recidivate is higher, voters are also more likely to have an overall negative evaluation of the main CL party (that is the *Partito Democratico*).³⁰

²⁹The IPSOS database contains a series of repeated cross-sections spanning from April 2008 to December 2008. We consider all individuals interviewed in this period and control for date of the interview fixed effects. The frequency of the question on the relevance of the crime issue is lower than the one regarding the valuation of the main CL party. This explains the different number of observations in columns (1) and (2) with respect to columns (3) and (4).

³⁰Table 9 and 10 report marginal effects from a Probit model. In Tables A.12 and A.13 in the online appendix we report the marginal effects from ordinary least squares.

7 Interpretations of the Results

In the previous sections we documented a voters' response to crime justice policies and the mechanisms underlying this response. Here we discuss the general theoretical framework our results are consistent with. The key mechanism underlying modern theories of electoral accountability based on forward-looking retrospective voting (Fearon, 1999; Persson and Tabellini, 2002; Besley, 2006; Besley and Prat, 2006; Ashworth, 2012; Ashworth *et al.*, 2016) relies on two main elements. First, a politician's past action should provide information about her future behavior (voters should be able to infer information on politician's quality from policy outcomes). Second, voters should condition their electoral behavior on such information (voters should respond to the observed effects of public policies). The results presented in the paper seem to be consistent with this mechanism. In the Appendix we present a retrospective probabilistic voting model linking voters and politicians consistent with our results in the context of our empirical design. Municipalities where the average incentives to recidivate of resident pardoned individuals were higher experienced a higher recidivism rate (Table 5). In these municipalities, the incumbent national government experienced a worse electoral performance relative to the opposition coalition (Table 6). The higher incentive to recidivate also translated in newspaper being more likely to report crime news involving pardoned individuals (Table 8). Hence, this suggests that voters living in different municipalities had different probabilities of receiving a negative *private signal* on the policy effects of the pardon. Most importantly, these probabilities were correlated with the idiosyncratic incentives to recidivate created by the design of the policy. The evidence concerning the voters' evaluation of the incumbent government's crime policies (Table 9) and regarding the overall perceived quality of the main CL party (Table 10), is consistent with a mechanism where voters updated their beliefs on the incumbent government's quality (*type*) according to the observed effects of the policy.

Alternatively, our basic results (Table 6) might be explained by multi-dimensional voting. Specifically, the multi-dimensional voting interpretation implies that an increased relevance of crime might have favored CR parties, given that they are typically perceived as the most competent on this issue (Petrocik, 1996; Puglisi, 2011). As we discuss in Section 2, the collective pardon bill was a very relevant political issue up to the 2008 elections. If the collective pardon

and its effects translated into a general increase in the relevance of crime, our results could be then explained by a salience-driven increase in the support for right-wing parties. (this is a mechanism suggested by models of multi-dimensional voting Belanger and Meguid, 2008; Aragonés *et al.*, 2015). However, while this mechanism is consistent with the baseline results, it does not seem to square with three other pieces of evidence. First, as shown by Table 7, the gain that the center-right coalition obtained in cities where the (negative) effects of the pardon were more relevant was lower in districts where more center-right candidates voted in favor of the pardon. Hence, the relevance of the crime issue induced by the collective pardon did not translate in an overall higher support for the center-right but this higher support was conditional on the past stance of center-right candidates with respect to such a policy. In addition, the evidence from the two survey datasets analyzed in Section 6 do not seem to suggest any impact of the incentive to recidivate on the probability of voters perceiving crime to be the most important issue either in Italy as a whole (Table 9 and Table 10) or in the municipality where they live (Table 10). Finally, if the increase in the relevance of crime favored right-wing parties in general, we should find some effect of our main variable of interest not only in national parliamentary elections but also in other elections. Table A.14 in the online appendix tests this implication. Results show that the incentive to recidivate did not have any impact on voter behavior in European Elections (2009 vs. 2004). Hence, it does not seem that CR parties experienced an overall (relative) political gain where the realized effects of the policy were likely to be worse.

8 Conclusions

While politicians and elected officials exert a lot of effort to demonstrate their commitment and record on crime control, we know very little about how voters respond to crime policies. Do voters reward tough on crime politicians independently from the actual effects of their policies or do they respond to the effects of their actions on crime rates?

In this paper we provide causal evidence about voters' reaction to the consequences of a national governmental criminal justice policy intervention. Our study shows how voters responded to the local consequences of the 2006 collective pardon bill in Italy. The Italian case-study has a series of attractive features since it allows us to exploit a unique national level natural exper-

iment. Indeed, the collective pardon implemented by this bill implies random variation in the consequences of the policy at the municipality level. While the approval of the collective pardon itself may have given a uniform signal about the government’s attitudes at the national level, the empirical evidence shows that idiosyncratic incentives to recidivate across pardoned individuals (created by the design of the bill) lead to heterogeneous policy effects across municipalities. Municipalities where the incentives to recidivate of resident pardoned individuals were higher, experienced a higher recidivism rate. At the same time, a higher incentive to recidivate at the municipal level led to: *i*) newspapers being more likely to report crime news involving pardoned individuals; *ii*) voters hardening their views on the incumbent national government. Exploiting these features of the collective pardon bill, our main results provide causal evidence of voters holding the incumbent governments accountable for their policy choices. Specifically, our main results show that, conditional on the number of released prisoners resident in a municipality and their crime profile including the average original sentence, a higher incentive to recidivate in a municipality translates into a harsher electoral “punishment” of the incumbent national government.

Besides providing evidence about the electoral payoffs of effective crime policies, to the best of our knowledge, our empirical analysis is among the few existing studies providing direct evidence about voters holding politicians accountable for the consequences of their policies (Ferraz and Finan, 2008; Casaburi and Troiano, 2016). Our analysis suggests that voters receive private signals and hold beliefs on incumbent politicians that are consistent with the effects of public policies. Ultimately, voters keep incumbent politicians accountable by conditioning their vote on the perceived effects of public policies.

References

- ANSOLABEHERE, S., MEREDITH, M. and SNOWBERG, E. (2014). Meco-Economic Voting: Local Information and Micro-Perceptions of the Macro-Economy. *Economics & Politics*, **26** (3), 380–410.
- ARAGONES, E., CASTANHEIRA, M. and GIANI, M. (2015). Electoral competition through issue selection. *American journal of political science*, **59** (1), 71–90.
- ASHWORTH, S. (2012). Electoral accountability: Recent theoretical and empirical work. *Annual Review of Political Science*, **15**, 183–201.

- , DE MESQUITA, E. B. and FRIEDENBERG, A. (2016). Learning about voter rationality. *mimeo*.
- BARRO, R. J. (1973). The control of politicians: an economic model. *Public choice*, **14** (1), 19–42.
- BELANGER, E. and MEGUID, B. M. (2008). Issue salience, issue ownership, and issue-based vote choice. *Electoral Studies*, **27**, 477–491.
- BESLEY, T. (2006). *Principled agents?: The political economy of good government*. Oxford University Press on Demand.
- and PRAT, A. (2006). Handcuffs for the grabbing hand? media capture and government accountability. *The American Economic Review*, **96** (3), 720–736.
- CASABURI, L. and TROIANO, U. (2016). Ghost-house busters: The electoral response to a large anti-tax evasion program. *The Quarterly Journal of Economics*, **131** (1), 273–314.
- DAL BO, E., DAL BO, P. and EYSTER, E. (2018). The demand for bad policy when voters underappreciate equilibrium effects. *Review of Economic Studies*, **85** (2), 964–998.
- DRAGO, F. and GALBIATI, R. (2012). Indirect effects of a policy altering criminal behavior: Evidence from the italian prison experiment. *American Economic Journal: Applied Economics*, **2** (4), 199–218.
- , — and VERTOVA, P. (2009). The deterrent effects of prison: Evidence from a natural experiment. *Journal of Political Economy*, **117** (2), 257–280.
- , NANNICINI, T. and SOBBRIO, F. (2014). Meet the press: how voters and politicians respond to newspaper entry and exit. *American Economic Journal: Applied Economics*, **6** (3), 159–188.
- DUGGAN, J. and MARTINELLI, C. (2017). The political economy of dynamic elections: Accountability, commitment, and responsiveness. *Journal of Economic Literature*, **55** (3), 916–84.
- EISENSEE, T. and STRÖMBERG, D. (2007). News floods, news droughts, and u.s. disaster relief. *Quarterly Journal of Economics*, **122** (2).
- ENNS, P. K. (2014). The public’s increasing punitiveness and its influence on mass incarceration in the united states. *American Journal of Political Science*, **58** (4), 857–872.
- EURISPES (2007). *Indulto: Tana Libera Tutti*. Tech. rep.
- FEARON, J. D. (1999). Electoral accountability and the control of politicians: selecting good types versus sanctioning poor performance. *Democracy, accountability, and representation*, **55**, 61.
- FEREJOHN, J. (1986). Incumbent performance and electoral control. *Public choice*, **50** (1), 5–25.
- FERRAZ, C. and FINAN, F. (2008). Exposing corrupt politicians: the effects of brazil’s publicly released audits on electoral outcomes. *The Quarterly Journal of Economics*, **123** (2), 703–745.

- HALL, M. G. (2001). State supreme courts in american democracy: Probing the myths of judicial reform. In *American Political Science Association*, Cambridge Univ Press, vol. 95, pp. 315–330.
- HOPKINS, D. K. and PETTINGILL, L. M. (2018). Retrospective voting in big-city us mayoral elections. *Political Science Research and Methods*, **6** (4), 697–714.
- HUBER, G. and GORDON, S. C. (2004). Accountability and coercion: Is justice blind when it runs for office? *American Journal of Political Science*, **48** (2), 247–263.
- KENDALL, C., NANNICINI, T. and TREBBI, F. (2014). How do voters respond to information? evidence from a randomized campaign. *The American Economic Review*, **105** (1), 322–353.
- KRIEGER, S. A. (2011). Do tough on crime politicians win more elections-an empirical analysis of california state legislators from 1992 to 2000. *Creighton L. Rev.*, **45**, 131.
- KRISBERG, B. and MARCHIONNA, S. (2006). *Attitudes of US voters toward prisoner rehabilitation and reentry policies*. NCCD.
- LEVITT, D., STEVEN (1997). Using electoral cycles in police hiring to estimate the effect of police on crime. *American Economic Review*, **87** (3), 270–290.
- LIM, C. S., SNYDER JR, J. M. and STRÖMBERG, D. (2015). The judge, the politician, and the press: newspaper coverage and criminal sentencing across electoral systems. *American Economic Journal: Applied Economics*, **7** (4), 103–135.
- LOFSTROM, M. and RAPHAEL, S. (2013). Incarceration and crime: Evidence from california’s realignment sentencing reform. *Working Paper*.
- MASTROBUONI, G. and RIVERS, D. A. (2016). Criminal discount factors and deterrence. *IZA Discussion Paper No. 9769*.
- MASTROROCCHO, N. and MINALE, L. (2018). News media and crime perceptions: Evidence from a natural experiment. *Journal of Public Economics*, **165**, 230 – 255.
- MAURIN, E. and OUSS, A. (2009). Sentence reductions and recidivism: Lessons from the bastille day quasi experiment.
- MURAKAWA, N. (2014). *The first civil right: How liberals built prison America*. Oxford University Press.
- PERSSON, T. and TABELLINI, G. (2002). *Political Economics: Explaining Economic Policy*. The MIT Press.
- PETROCIK, J. R. (1996). Issue ownership in presidential elections, with a 1980 case study. *American Journal of Political Science*, **40** (3), 825–850.
- PUGLISI, R. (2011). Being the new york times: the political behaviour of a newspaper. *B.E. Journal of Economic Analysis and Policy*, **11** (1).

WOLFERS, J. (2002). Are voters rational? evidence from gubernatorial elections. *Working Paper*.

Tables and Figures

Table 1: Perceived overall effects of the collective pardon on crime

	Center-Left Voters	Center-Right Voters	Independent/ abstainers	All Voters
Large increase in crime	29.7%	66.7%	52.1%	51.3%
Limited increase in crime	38.2%	22.0%	25.0%	27.4%
No increase in crime	26.7%	8.2%	11.4%	14.2%
Does not know/Does not answer	5.3%	3.1%	11.4%	7.1%

Notes. The data are drawn from a survey (N=1307) representative of the Italian population aged 16 and above. The data reports the percentage response by type of answer and by voter's political ideology to the question "In your opinion, has the collective pardon lead to an increase in crime in Italy". Source: *Osservatorio sul Capitale Sociale. Demos & Pi*, June 2007.

Table 2A: Summary statistics: Pardoned individuals (municipal level)

Variable	Obs	Mean	Std. Dev.	Min	Max
Incentive to recidivate	2256	2.51	1	.12	4.26
Average original sentence	2256	40.56	29.57	2	254
Mean age	2256	40.26	8.48	20	78
% employed	2256	.26	.37	0	1
% married	2256	.27	.36	0	1
% primary education	2256	.71	.38	0	1
% secondary education	2256	.07	.21	0	1
% college education	2256	.01	.08	0	1
% convicted for drug crimes	2256	.3	.37	0	1
% convicted for property crimes	2256	.47	.41	0	1
% convicted for violent crimes	2256	.13	.28	0	1
% convicted for other crimes	2256	.02	.1	0	1
Pardoned individuals per 1,000 residents	2256	.33	.32	.02	4.39

Table 2B: Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
City with at least one pardoned individual	7159	.32	.46	0	1
Municipal area (squared km)	7159	39.59	52.02	.2	1307.7
Latitude	7159	43.27	2.62	35.5	47.04
Longitude	7159	11.74	2.75	6.7	18.49
Landlocked municipality	7159	.91	.29	0	1
Montaneous municipality	7159	1.88	.95	1	3
Crimes per capita pre-pardon (2005)	7159	.01	.01	0	.37
Mean taxable income per capita (2008)	7159	10309.79	3254.3	3030.83	30545.7
Private sector employees per capita (2001)	7159	.21	.17	.01	3.06
Municipal unemployment rate (2001)	7159	.11	.09	0	.51
Municipal population (2001)	7159	7876.69	41749.45	500	2546804
Share of population older than 65 (2001)	7159	.2	.06	.06	.55
Share of population between 20-34 (2001)	7159	.21	.02	.1	.29
Share of population with diploma laurea (2001)	7159	.28	.06	.07	.62
At least one news on crime & collective pardon	7159	.06	.24	0	1
Δ Win Margin 2006-2008 C.Right vs. C.Left	7159	.07	.07	-.3	.6
Δ Votes per eligible voters 2006-2008 C. Right	7159	-.04	.04	-.31	.27
Δ Votes per eligible voters 2006-2008 C. Left	7159	-.11	.05	-.54	.14
Crime main political issue gov. should face	2853	.12	.33	0	1
Incumbent gov. poorly managed crime	350	.4	.49	0	1
Center-left best suited to deal with crime	350	.07	.26	0	1
Center-right best suited to deal with crime	350	.49	.5	0	1
Negative valuation main C-Left party	27965	.14	.35	0	1
Positive valuation main C-Right party	28116	.11	.31	0	1
Crime main issue in the municipality	3734	.07	.26	0	1
Crime main issue in Italy	3734	.12	.32	0	1

Table 3A: Balancing tests: geographical characteristics of the municipality

	(1)	(2)	(3)	(4)	(5)
	Incentive to recidivate	Incentive to recidivate	Incentive to recidivate	Incentive to recidivate	Incentive to recidivate
Municipal area (squared km)	-0.0000 (0.0001)				
Latitude		-0.0036 (0.0026)			
Longitude			0.0018 (0.0028)		
Landlocked municipality				0.0251 (0.0306)	
Montaneous municipality					-0.0013 (0.0067)
Average original sentence - pardoned	-0.0150*** (0.0012)	-0.0151*** (0.0013)	-0.0150*** (0.0013)	-0.0150*** (0.0013)	-0.0150*** (0.0013)
City with at least one pardoned inividual	3.1181*** (0.0485)	3.1163*** (0.0479)	3.1169*** (0.0482)	3.1197*** (0.0473)	3.1168*** (0.0478)
Observations	7,159	7,159	7,159	7,159	7,159
R-squared	0.8488	0.8489	0.8488	0.8488	0.8488

Notes. Entries are coefficients from regressions in which the dependent variable is the incentive to recidivate (standardized with mean 0 and SD equal to 1) regressed on each of the variables X_i of model (1), conditional on the average original sentence and the indicator \mathcal{I}_i (city with at least one pardoned individual). Models estimated are with OLS. Standard errors clustered at the provincial level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

Table 3B: Balancing tests: socio-economic characteristics of the municipality

	(1)	(2)	(3)	(4)	(5)
	Incentive to recidivate	Incentive to recidivate	Incentive to recidivate	Incentive to recidivate	Incentive to recidivate
Crimes per capita in 2005	0.1548 (0.4234)				
Pardoned individuals per 1,000 residents		0.0317 (0.0599)			
Taxable income per capita (2008)			-0.0000 (0.0000)		
Private sector employees per capita, in 2001				-0.0064 (0.0388)	
Municipal unemployment rate, in 2001					0.0658 (0.0801)
Average original sentence - pardoned	-0.0150*** (0.0012)	-0.0151*** (0.0012)	-0.0150*** (0.0013)	-0.0150*** (0.0013)	-0.0151*** (0.0013)
City with at least one pardoned individual	3.1172*** (0.0482)	3.1078*** (0.0546)	3.1175*** (0.0485)	3.1176*** (0.0484)	3.1159*** (0.0477)
Observations	7,159	7,159	7,159	7,159	7,159
R-squared	0.8488	0.8488	0.8488	0.8488	0.8488

Notes. Entries are coefficients from regressions in which the dependent variable is the incentive to recidivate (standardized with mean 0 and SD equal to 1) regressed on each of the variables X_i of model (1), conditional on the average original sentence and the indicator \mathcal{I}_i (city with at least one pardoned individual). Models estimated are with OLS. Standard errors clustered at the provincial level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

Table 3C: Balancing tests: demographic characteristics of the municipality

	(1)	(2)	(3)	(4)
	Incentive to recidivate	Incentive to recidivate	Incentive to recidivate	Incentive to recidivate
Municipal population, in 2001	0.0000 (0.0000)			
Share of population older than 65, in 2001		-0.0490 (0.1176)		
Share of population between 20-34, in 2001			0.0643 (0.3181)	
Share of population with diploma laurea, in 2001				0.0979 (0.1019)
Average original sentence - pardoned	-0.0150*** (0.0013)	-0.0150*** (0.0013)	-0.0150*** (0.0013)	-0.0150*** (0.0013)
City with at least one pardoned individual	3.1152*** (0.0485)	3.1158*** (0.0472)	3.1166*** (0.0474)	3.1151*** (0.0486)
Observations	7,159	7,159	7,159	7,159
R-squared	0.8488	0.8488	0.8488	0.8488

Notes. Entries are coefficients from regressions in which the dependent variable is the incentive to recidivate (standardized with mean 0 and SD equal to 1) regressed on each of the variables X_i of model (1), conditional on the average original sentence and the indicator \mathcal{I}_i (city with at least one pardoned individual). Models estimated are with OLS. Standard errors clustered at the provincial level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

Table 4: Placebo

	Δ Win Margin 2006-2001					
	Center-right vs. Center-left					
	(1)	(2)	(3)	(4)	(5)	(6)
Incentive to recidivate	-0.0017 (0.0017)	-0.0013 (0.0017)	-0.0005 (0.0015)	-0.0017 (0.0017)	-0.0013 (0.0017)	0.0001 (0.0015)
Pardoned individuals controls	NO	YES	YES	NO	YES	YES
Municipal level controls	NO	NO	YES	NO	NO	YES
Only municipalities with at least one pardoned	YES	YES	YES	NO	NO	NO
Observations	2,252	2,252	2,252	7,139	7,139	7,139
R-squared	0.0098	0.0461	0.1506	0.0050	0.0131	0.1550

Notes. Entries are coefficients from the equation model (1) estimated with OLS where the dependent variable is the difference in the margin of victory of the CR coalition with respect to the CL coalition between the national elections in 2006 and 2001. Pardoned individuals control include: number of pardoned individuals per 1,000 residents in the municipality, average length of original sentence, average age, percentage of pardoned individuals that are employed, percentage of pardoned individuals with primary, secondary and college education, percentage of pardoned individuals convicted for drug, property, violent or other types of crime; Municipal level controls include: municipal area, latitude, longitude, dummy for landlocked municipality, indicator of montaneous or partially montaneous municipality, resident population, share of population with diploma laurea, share of population over 65, share of population 20-34, private sector employees per capita, municipal unemployment rate (in census year 2001), mean taxable income per capita (2008) and crime rate pre-pardon (2005). Standard errors clustered at the provincial level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

Table 5: Incentive to Recidivate and Recidivism

	Share of Recidivists					
	(1)	(2)	(3)	(4)	(5)	(6)
Incentive to recidivate	0.0159*** (0.0057)	0.0142** (0.0057)	0.0140** (0.0057)	0.0159*** (0.0057)	0.0142** (0.0057)	0.0141** (0.0057)
Pardoned individuals controls	NO	YES	YES	NO	YES	YES
Municipal level controls	NO	NO	YES	NO	NO	YES
Only municipalities with at least one pardoned	YES	YES	YES	NO	NO	NO
Observations	2,256	2,256	2,256	7,159	7,159	7,159
R-squared	0.0063	0.0369	0.0419	0.1048	0.1324	0.1347

Notes. Entries are coefficients from the equation model (1) estimated with OLS where the dependent variable is the share of released inmates recommitting a crime (recidivism). Pardoned individuals control include: number of pardoned individuals per 1,000 residents in the municipality, average length of original sentence, average age, percentage of pardoned individuals that are employed, percentage of pardoned individuals with primary, secondary and college education, percentage of pardoned individuals convicted for drug, property, violent or other types of crime; Municipal level controls include: municipal area, latitude, longitude, dummy for landlocked municipality, indicator of montaneous or partially montaneous municipality, resident population, share of population with diploma laurea, share of population over 65, share of population 20-34, private sector employees per capita, municipal unemployment rate (in census year 2001), mean taxable income per capita (2008) and crime rate pre-pardon (2005). Standard errors clustered at the provincial level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

Table 6: Voters' Response to the Effects of the Collective Pardon

	Δ Win Margin 2008-2006 Center-right vs. Center-left					
	(1)	(2)	(3)	(4)	(5)	(6)
Incentive to recidivate	0.0030** (0.0013)	0.0030** (0.0013)	0.0029** (0.0011)	0.0030** (0.0013)	0.0030** (0.0013)	0.0025** (0.0012)
Pardoned individuals controls	NO	YES	YES	NO	YES	YES
Municipal level controls	NO	NO	YES	NO	NO	YES
Only municipalities with at least one pardoned	YES	YES	YES	NO	NO	NO
Observations	2,256	2,256	2,256	7,159	7,159	7,159
R-squared	0.0200	0.0785	0.2305	0.0124	0.0278	0.1217

Notes. Entries are coefficients from the equation model (1) estimated with OLS where the dependent variable is the difference in the margin of victory of the CR coalition with respect to the CL coalition between the national elections in 2008 and 2006. Pardoned individuals control include: number of pardoned individuals per 1,000 residents in the municipality, average length of original sentence, average age, percentage of pardoned individuals that are employed, percentage of pardoned individuals with primary, secondary and college education, percentage of pardoned individuals convicted for drug, property, violent or other types of crime; Municipal level controls include: municipal area, latitude, longitude, dummy for landlocked municipality, indicator of montaneous or partially montaneous municipality, resident population, share of population with diploma laurea, share of population over 65, share of population 20-34, private sector employees per capita, municipal unemployment rate (in census year 2001), mean taxable income per capita (2008) and crime rate pre-pardon (2005). Standard errors clustered at the provincial level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

Table 7: Voters' Response to the Effects of the Collective Pardon

	Δ Win Margin 2008-2006					
	Center-right vs. Center-left					
	(1)	(2)	(3)	(4)	(5)	(6)
Incentive to recidivate	0.0122*** (0.0031)	0.0124*** (0.0031)	0.0112*** (0.0031)	0.0107*** (0.0032)	0.0129*** (0.0032)	0.0116*** (0.0031)
Incentive to recidivate \times % CR cand. who voted for pardon	-0.0590*** (0.0158)	-0.0589*** (0.0154)	-0.0504*** (0.0162)	-0.0609*** (0.0170)	-0.0603*** (0.0160)	-0.0535*** (0.0159)
Municipality with at least one pardoned \times % CR cand. who voted for pardon	-	-	-	0.1770*** (0.0569)	0.1757*** (0.0539)	0.1683*** (0.0545)
Pardoned individuals controls	NO	YES	YES	NO	YES	YES
Municipal level controls	NO	NO	YES	NO	NO	YES
Only municipalities with at least one pardoned	YES	YES	YES	NO	NO	NO
Electoral district fixed effects	YES	YES	YES	YES	YES	YES
Observations	2,256	2,256	2,256	7,159	7,159	7,159
R-squared	0.3688	0.3790	0.4458	0.3471	0.3512	0.3753

Notes. Entries are coefficients from the equation model (2) estimated with OLS where the dependent variable is the difference in the margin of victory of the CR coalition with respect to the CL coalition between the national elections in 2008 and 2006. Pardoned individuals control include the interaction between the number of pardoned individuals per 1,000 residents in the municipality, average length of original sentence, average age, percentage of pardoned individuals that are employed, percentage of pardoned individuals with primary, secondary and college education, percentage of pardoned individuals convicted for drug, property, violent or other types of crime; Municipal level controls include: municipal area, latitude, longitude, dummy for landlocked municipality, indicator of montaneous or partially montaneous municipality, resident population, share of population with diploma laurea, share of population over 65, share of population 20-34, private sector employees per capita, municipal unemployment rate (in census year 2001), mean taxable income per capita (2008) and crime rate pre-pardon (2005). Standard errors clustered at the provincial level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

Table 8: Incentive to recidivate & news on crime

	At least one news on crime & collective pardon in the municipality						Number of news on crime & collective pardon in the municipality					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Incentive to recidivate	0.0018** (0.0008)	0.0018** (0.0008)	0.0016* (0.0009)	0.0008** (0.0004)	0.0008** (0.0003)	0.0007* (0.0004)	0.0119* (0.0064)	0.0135** (0.0064)	0.0192* (0.0098)	0.0119* (0.0064)	0.0135** (0.0064)
Pardoned individuals controls	NO	YES	YES	NO	YES	YES	NO	YES	YES	NO	YES	YES
Municipal level controls	NO	NO	YES	NO	NO	YES	NO	NO	YES	NO	NO	YES
Only municipalities with at least one pardoned	YES	YES	YES	NO	NO	NO	YES	YES	YES	NO	NO	NO
Observations	2,256	2,256	2,256	7,159	7,159	7,159	2,255	2,255	2,255	7,156	7,156	7,156
Pseudo R-squared	0.0028	0.0178	0.2766	0.0910	0.0992	0.2500						

Notes. Marginal effects from a Probit model evaluated at the sample mean of all other variables are reported in columns (1)-(6), where the dependent variable is a dummy equal to zero if there is at least one local news on crime and collective pardon in a municipality and zero otherwise. Coefficients from a Poisson model are reported in columns (7)-(12), where the dependent variable is the number of local news on crime and collective pardon in a municipality. Pardoned individuals control include: number of pardoned individuals per 1,000 residents in the municipality, average length of original sentence, average age, percentage of pardoned individuals that are employed, percentage of pardoned individuals with primary, secondary and college education, percentage of pardoned individuals convicted for drug, property, violent or other types of crime; Municipal level controls include: municipal area, latitude, longitude, dummy for landlocked municipality, indicator of montaneous or partially montaneous municipality, resident population, share of population with diploma laurea, share of population over 65, share of population 20-34, private sector employees per capita, municipal unemployment rate (in census year 2001), mean taxable income per capita (2008) and crime rate pre-pardon (2005). Standard errors clustered at the provincial level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

Table 9: Issue Priority & Perceived Competence of Political Coalitions (*ITANES*)

	(1)	(2)	(3)	(4)
	Crime most important issue gov. should face	C-Left gov. dealt very bad with crime	C-Left best suited to deal with crime	C-Right best suited to deal with crime
Incentive to recidivate	-0.0006 (0.0016)	0.0166** (0.0071)	-0.0008+ (0.0006)	0.0020 (0.0080)
Pardoned individuals controls	YES	YES	YES	YES
Municipal level controls	YES	YES	YES	YES
Individual level controls	YES	YES	YES	YES
Observations	2,826	347	347	347
Pseudo R-squared	0.0696	0.229	0.477	0.203

Notes. Marginal effects from a Probit model evaluated at the sample mean of all other variables are reported. Individual level controls include: age, gender, religiosity level, marital status, employment status, self declared left-right political position, frequency of newspaper readership and whether the most viewed TV news channel belongs to the Mediaset media group (owned by the leader of the center-right coalition, Silvio Berlusconi). Pardoned individuals control include: number of pardoned individuals per 1,000 residents in the municipality, average length of original sentence, average age, percentage of pardoned individuals that are employed, percentage of pardoned individuals with primary, secondary and college education, percentage of pardoned individuals convicted for drug, property, violent or other types of crime; Municipal level controls include: municipal area, latitude, longitude, dummy for landlocked municipality, indicator of montaneous or partially montaneous municipality, resident population, share of population with diploma laurea, share of population over 65, share of population 20-34, private sector employees per capita, municipal unemployment rate (in census year 2001), mean taxable income per capita (2008) and crime rate pre-pardon (2005). Observation are weighted according to the sample political weights provided by ITANES. Standard errors clustered at the provincial level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***, which report the results of the test of the underlying coefficient from the Probit model being 0.

Table 10: Valuation of Political Parties and Issue Priority (*IPSOS*)

	(1) Crime main issue in municipality	(2) Crime main issue in Italy	(3) Negative valuation main CL party	(4) Positive valuation main CR party
Incentive to recidivate	-0.0000 (0.0010)	0.0005 (0.0012)	0.0019** (0.0009)	0.0005 (0.0007)
Pardoned individuals controls	YES	YES	YES	YES
Municipal level controls	YES	YES	YES	YES
Individual level controls	YES	YES	YES	YES
Observations	3,719	3,719	27,853	28,004
Pseudo R2	0.122	0.122	0.0741	0.172

Notes. Marginal effects from a Probit model evaluated at the sample mean of all other variables are reported. Individual level controls include: age, gender, religiosity level, employment status, self declared left-right political position, graduate degree. Pardoned individuals control include: number of pardoned individuals per 1,000 residents in the municipality, average length of original sentence, average age, percentage of pardoned individuals that are employed, percentage of pardoned individuals with primary, secondary and college education, percentage of pardoned individuals convicted for drug, property, violent or other types of crime; Municipal level controls include: municipal area, latitude, longitude, dummy for landlocked municipality, indicator of montaneous or partially montaneous municipality, resident population, share of population with diploma laurea, share of population over 65, share of population 20-34, private sector employees per capita, municipal unemployment rate (in census year 2001), mean taxable income per capita (2008) and crime rate pre-pardon (2005). Observation are weighted according to the sample political weights provided by IPSOS. The econometric specification includes fixed effects for the date of the interview. Standard errors clustered at the provincial level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***, which report the results of the test of the underlying coefficient from the Probit model being 0.

Figure 1: Timing of Elections and Collective Pardon Bill

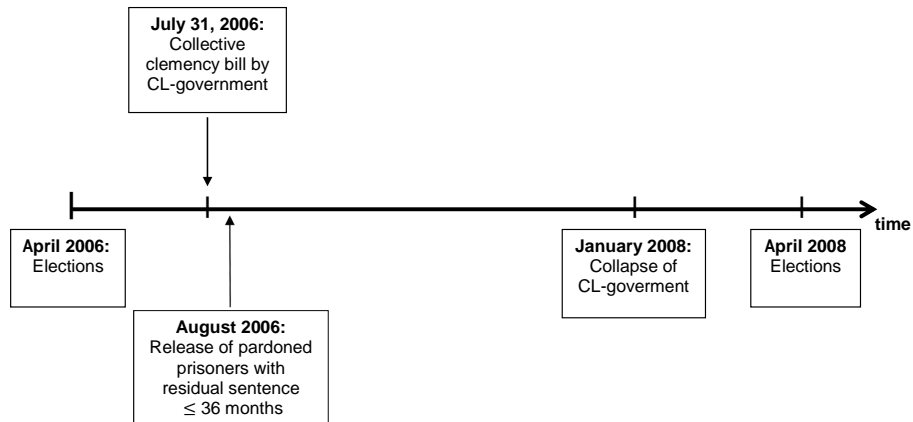
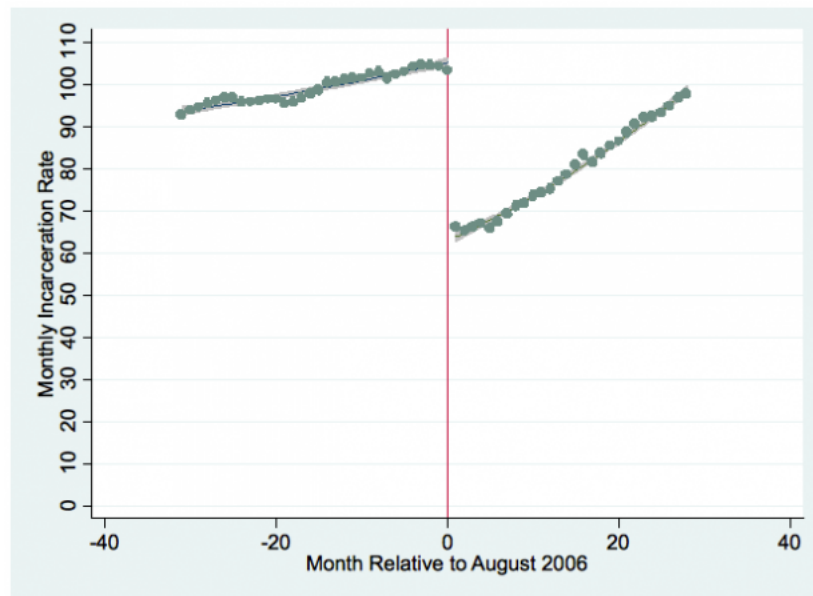
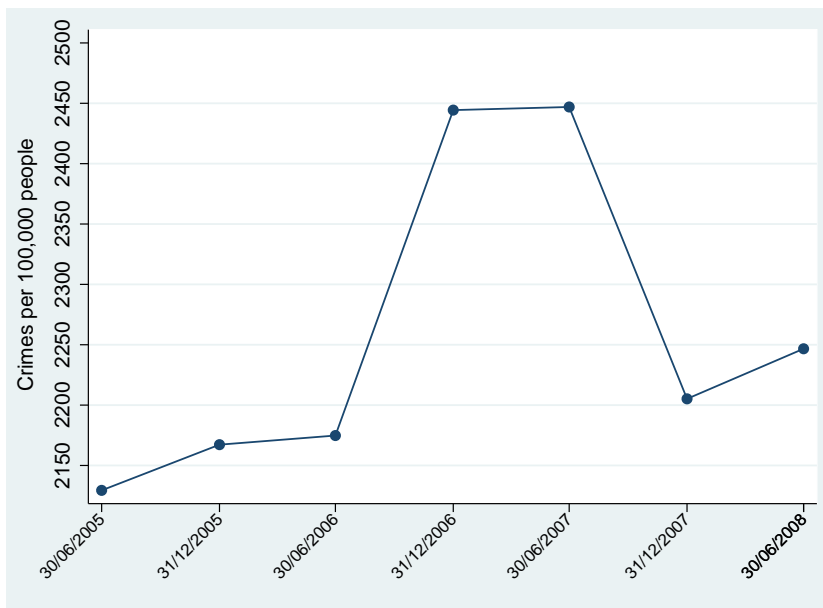


Figure 2: Incarceration rate



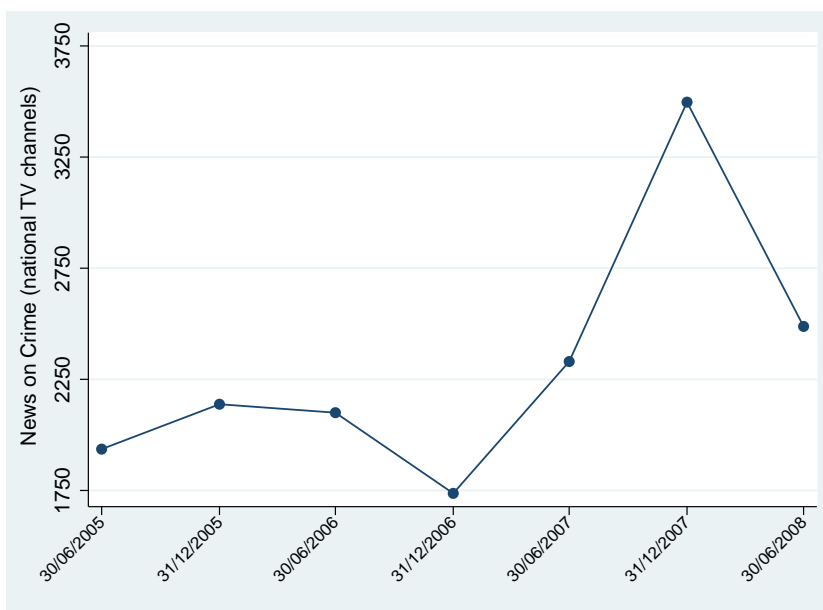
Notes: The figure illustrates the variation in the incarceration rate (i.e., per 100,000 people) in Italy before and after the collective pardon bill.

Figure 3: Crimes per 100,000 people



Notes: The figure illustrates the variation in the total number of crimes per 100,000 people in Italy between the first semester of 2005 and the first semester of 2008.

Figure 4: News on Crimes (national TV channels)



Notes: The figures illustrates the variation in the number of news on crime (on the main Italian national TV channels) between the first semester of 2005 and the first semester of 2008. (Source: "Indagine sulla Sicurezza in Italia, 2009, UNIPOLIS").

Figure 5: Geographical distribution of the average incentive to recidivate of pardoned individuals (standardized)



Notes. The figure illustrates the geographical distribution of the (standardized) average incentive to recidivate of pardoned individuals at the municipal level. A one unit increase corresponds to one standard deviation increase in the incentive to recidivate (i.e., around 8.2 months less of residual sentence).

Online Appendix [not for publication]

1 Theoretical Framework

In order to better frame the theoretical mechanism behind our empirical results, this section presents a retrospective probabilistic voting model linking voters and politicians. There is a continuum of voters of measure one. Voters' payoffs are additive over two periods and there is no discounting. In period one, an incumbent of type (ability) θ_I is in office. In period two, voters may decide to vote for the incumbent or elect a challenger. In each period t where a politician is in office, she implements a policy g_t . The value of such policy is heterogeneous across municipalities and depends on the politician's ability $\theta \in [0, 1]$ and on a random shock at the municipality level $\kappa > 0$. Specifically, the policy g_t implemented by a politician with ability θ may take two values for each municipality i , $g_{t,i} \in \{0; 1\}$ where:

$$\mathbb{P}(g_{t,i} = 1 | \theta, \kappa_i) = \theta^{\kappa_i}$$

The incumbent's ($\theta_I^{\kappa_i}$) and the challenger's ($\theta_C^{\kappa_i}$) probability of implementing a high-value policy are *i.i.d.* across politicians and across municipalities, and uniformly distributed in $[0, 1]$. Hence, the probability of observing a positive impact of the policy in period t (i.e., $g_{t,i} = 1$) is positively correlated with the ability of the politician in office.³¹

The expected utility of voter v at time t in municipality i simply depends on the effects of the policy at time t , $U_{v,i}^t = E(g_{t,i})$. Voters do not know either θ or κ_i . They just observe whether $g_{t,i} = 1$ or $g_{t,i} = 0$. For example, $g_{t,i} = 1$ may indicate that voters in municipality i observed a low recidivism level of pardoned individual. Hence, voters see the impact of the policy at the local level, which is positively correlated with the true state of the world (i.e., with the politician's type θ) and may use this information to update their beliefs on the politician's type. Notice that while voters are aware that the observed effect of the policy is influenced by an (unobserved) shock at the municipality level, κ_i (e.g., the random incentive to recidivate of pardoned inmates resident in municipality i), at the same time they take into account that the realized value of the policy depends also on the incumbent's type (e.g., on the quality/effectiveness of the design of the policy bill in deterring recidivism by pardoned inmates). More formally, since in period

³¹Notice that framework immediately generalizes to the introduction of an additional random noise (at the national level) in the policy realization.

one the incumbent is in office, for voters in municipality i , $g_{1,i}^I$ represents an informative signal on the incumbent's type (the voters' Bayesian updating is based on the standard Beta-binomial model). Then, in period two, they may decide to vote for the incumbent or elect a challenger, based on their posterior beliefs on the incumbent's type upon having observed $g_{1,i}^I$. In particular, the expected utility, at time $t = 2$, of a voter v in municipality i from electing the incumbent is:

$$U_{v,i}^I(g_{2,i}^I, g_{1,i}^I) = E(g_{2,i}^I | g_{1,i}^I) + \beta_v$$

where β_v is an idiosyncratic preference shock about the incumbent that affects the utility of voter v when the incumbent is in office. β_v is *i.i.d.* across voters and uniformly distributed in $[-1; 1]$. On the other hand, the expected utility of a voter v in municipality i from electing the challenger is simply:

$$U_{v,i}^C(g_{2,i}^C) = E(g_{2,i}^C) = \frac{1}{2}$$

Hence, at $t = 2$, a voter v in municipality i would prefer to vote for the incumbent rather than for the challenger if and only if:

$$\beta_v \geq \frac{1}{2} - E(g_{2,i}^I | g_{1,i}^I)$$

Hence, it is possible to derive some simple empirical predictions by interpreting the random shock at the municipality level affecting the observed quality of the incumbent's government policy at $t = 1$ (i.e., κ_i) as being determined by the random incentive to recidivate of pardoned individuals in municipality i . Specifically, in municipalities where pardoned individuals have a high incentive to recidivate (i.e., where $\kappa_i > 1$) with respect to municipalities where pardoned individuals have a low incentive to recidivate (i.e., where $\kappa_i < 1$):³²

1. Since $\mathbb{P}(g_{t,i} = 1 | \theta, \kappa_i) = \theta^{\kappa_i}$, for any given θ voters are less likely to observe a positive policy outcome ($g_{1,i}^I = 1$) rather than a negative one ($g_{1,i}^I = 0$). Hence, the recidivism rate of pardoned individuals should be higher and news media should be more likely to report news on crime events related to pardoned individuals.

³²Notice that the only crucial assumption is that voters cannot observe κ_i (nor, of course, θ). This is consistent with the issue under analysis. The average residual sentence of pardoned individuals at the municipal level was, to no extent, a publicly available information. Hence, in the 2008 elections, voters could not have inferred whether the observed effects of the policy were due to θ or κ_i .

2. In turn, since $E(\theta^{\kappa_i} | g_{1,i}^I = 1) > E(\theta^{\kappa_i} | g_{1,i}^I = 0)$, voters are more likely to hold worse posterior beliefs on the incumbent's type. Hence, the perceived competence of the incumbent government coalition should be lower.
3. Finally, since $E(g_{2,i}^I | g_{1,i}^I = 1) > E(g_{2,i}^C) > E(g_{2,i}^I | g_{1,i}^I = 0)$, voters are less likely to re-elect the incumbent.³³ Hence, the win margin of the challenger (center-right coalition) should be higher in the 2008 elections.

2 Dataset on crime-related news

The data on crime-related news is gathered from the *Factiva* database. We extrapolate news on crime-related events from all the Italian news sources present in the database with regular frequency over the period of interest (2006-2008). These sources include some of the main Italian national and regional newspapers (*Corriere della Sera*; *La Repubblica*; *La Stampa*; *Il Giornale*; *Il Giorno*; *Il Resto del Carlino*; *La Nazione*) and the main Italian news agencies and their local branches (*ANSA*; *ANSA Regional*; *AGI*).³⁴ Specifically, we run a script looking for news in the period post-2006 pardon and pre-2008 elections (i.e., August 1, 2006-March 30, 2008) containing any word related to crimes (theft, robbery, extortion, scam, murder, drug, burglary, beatings, domestic violence, rape, etc.) and containing at the same time words immediately identifiable with the collective pardon (pardoned individual, collective pardon) and semantic variations of them. To reduce measurement error, we exclude news containing words identifying stories not related to real crimes (e.g., movie, fiction, TV), referring to crimes different from the ones involving pardoned prisoners (e.g., mafia, terrorism) or crimes committed by foreign citizens

³³In particular, $E(g_{2,i}^I | g_{1,i}^I = 1) = \frac{2}{3}$, $E(g_{2,i}^C) = \frac{1}{2}$, and $E(g_{2,i}^I | g_{1,i}^I = 0) = \frac{1}{3}$. Hence, if we denote a voter v resident in municipality i as v_i , then:

$$\mathbb{P}(v_i \text{ votes } I | g_{1,i}^I = 1) = \mathbb{P}\left(\beta_v \geq \frac{1}{2} - E(g_{2,i}^I | g_{1,i}^I = 1)\right) = \frac{7}{12}.$$

Instead,

$$\mathbb{P}(v_i \text{ votes } I | g_{1,i}^I = 0) = \mathbb{P}\left(\beta_v \geq \frac{1}{2} - E(g_{2,i}^I | g_{1,i}^I = 0)\right) = \frac{5}{12}.$$

³⁴We include national newspapers since in Italy national newspapers have several local editions (Drago *et al.*, 2014). The presence of news agencies allow us to increase the external validity of our sample since local newspapers not included in the *Factiva* database are often using these agencies as their main sources of information and, at the same time, news agencies report news gathered from local newspapers as well.

(e.g., foreigner, immigrant). We then extrapolate the first paragraph of each news satisfying the above criteria. The first paragraph typically contains the name of the municipality where a crime takes place (see the examples below). Finally, we match this news database with the names of Italian municipalities and count the total number of times each municipality is mentioned in this type of crime news related to the pardon.

The following are examples of stories present in our database :

- “Trieste. Free thanks to the pardon yesterday afternoon at 4 p.m. a Trieste-resident was caught just 12 hours later by the Police of the Core Mobile Radio Trieste while attempting to steal a car” (*Trieste. Scarcerato grazie all’indulto alle 16 di ieri pomeriggio un triestino è stato beccato appena 12 ore dopo dai Carabinieri del Nucleo Radiomobile di Trieste mentre tentava di rubare un autovettura*).
- “He resisted for two months then Tarquinio Colantoni, 46 years old, from Giffoni Sei Casali did not resist and has again committed a sexual assault. On August first, he was released from prison thanks to the pardon” (*Ha resistito per due mesi poi Tarquinio Colantoni di 46 anni di Giffoni Sei Casali non ha resistito e ha commesso nuovamente una violenza sessuale. Il primo agosto era uscito dal carcere per l’indulto*).
- “They were free for a few weeks thanks to the pardon. Bergamo. Four youngsters from Bergamo were arrested with the charges of raping and robbing a prostitute on Saturday night” (*Erano in liberta’ da poche settimane grazie all’indulto. Bergamo. Quattro giovani bergamaschi sono stati arrestati con l’accusa di aver violentato e rapinato una prostituta sabato notte*).

3 Additional Tables and Figures

Table A.1: Δ Perceived Competence Perception Center-Left vs. Center-Right Coalitions

	Center-Left Voters	Center-Right Voters	Independent/ abstainers	All Voters
Fighting Crime	+27%	-72.1%	-12.2%	-22.3%
Enhance Economic Growth	+49.9%	-68.9%	-8.3%	-14.3%
Managing Immigration	+45.3%	-71.1%	-4.3%	-13.9%
Reduce Political Corruption	+41.0%	-48.5%	+0.4%	+5.4%

Notes. The data are drawn from a survey (N=1307) representative of the Italian population aged 16 and above. The data reports the difference in terms of percentage of people that answer “The incumbent center-left government” rather than “A center-right government” to the question “Who is better able to handle this problem?”. Source: *Osservatorio sul Capitale Sociale. Demos & Pi*, June 2007.

Table A.2: Balancing tests: pardoned inmates characteristics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Incentive to recidivate	Incentive to recidivate	Incentive to recidivate	Incentive to recidivate	Incentive to recidivate	Incentive to recidivate	Incentive to recidivate	Incentive to recidivate	Incentive to recidivate	Incentive to recidivate
Mean age	-0.0042* (0.0025)									
% employed		-0.0829 (0.0720)								
% married			-0.0249 (0.0707)							
% primary education				0.1405*** (0.0524)						
% secondary education					-0.3216*** (0.0999)					
% college education						0.1351 (0.3772)				
% convicted for drug crimes							-0.1636*** (0.0518)			
% convicted for property crimes								0.0026 (0.0505)		
% convicted for violent crimes									0.2943*** (0.0786)	
% convicted for other crimes										0.0129 (0.1817)
Average original sentence	-0.0149*** (0.0013)	-0.0148*** (0.0013)	-0.0150*** (0.0013)	-0.0151*** (0.0013)	-0.0149*** (0.0013)	-0.0150*** (0.0013)	-0.0150*** (0.0012)	-0.0150*** (0.0013)	-0.0159*** (0.0013)	-0.0150*** (0.0012)
Observations	2,256	2,256	2,256	2,256	2,256	2,256	2,256	2,256	2,256	2,256
R-squared	0.1989	0.1985	0.1977	0.2004	0.2020	0.1977	0.2013	0.1976	0.2036	0.1976

Notes. Entries are coefficients from the equation model estimated with OLS. Standard errors clustered at the provincial level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

Table A.3: Voters' Response to the Effects of the Collective Pardon

	Δ Win Margin 2008-2006					
	Center-right vs. Center-left					
	(1)	(2)	(3)	(4)	(5)	(6)
Incentive to recidivate	0.0030** (0.0013)	0.0030** (0.0013)	0.0029** (0.0011)	0.0030** (0.0013)	0.0030** (0.0013)	0.0025** (0.0012)
Average original sentence	0.0004*** (0.0001)	0.0003*** (0.0001)	0.0003*** (0.0001)	0.0004*** (0.0001)	0.0003*** (0.0001)	0.0002*** (0.0001)
Mean age		-0.0005* (0.0003)	-0.0001 (0.0002)		-0.0005* (0.0003)	-0.0001 (0.0002)
% employed		-0.0024 (0.0055)	0.0022 (0.0046)		-0.0024 (0.0055)	0.0031 (0.0045)
% married		0.0199*** (0.0071)	0.0071* (0.0042)		0.0199*** (0.0071)	0.0061 (0.0047)
% primary education		-0.0086 (0.0092)	-0.0055 (0.0057)		-0.0086 (0.0092)	-0.0067 (0.0058)
% secondary education		0.0058 (0.0147)	0.0097 (0.0114)		0.0058 (0.0147)	0.0083 (0.0114)
% college education		-0.0214 (0.0224)	-0.0178 (0.0183)		-0.0214 (0.0223)	-0.0192 (0.0179)
% convicted for drug crimes		0.0054 (0.0054)	0.0062 (0.0050)		0.0054 (0.0054)	0.0060 (0.0050)
% convicted for property crimes		0.0053 (0.0051)	0.0035 (0.0047)		0.0053 (0.0051)	0.0031 (0.0049)
% convicted for violent crimes		0.0084+ (0.0056)	0.0056 (0.0058)		0.0084+ (0.0056)	0.0060 (0.0058)
% convicted for other crimes		-0.0011 (0.0130)	-0.0087 (0.0144)		-0.0011 (0.0129)	-0.0112 (0.0140)
Pardoned individuals per 1,000 residents		0.0442*** (0.0120)	0.0251** (0.0116)		0.0442*** (0.0120)	0.0295** (0.0114)
Municipal area (squared km)			-0.0001** (0.0000)			-0.0001*** (0.0000)
Latitude			0.0033 (0.0031)			-0.0008 (0.0035)
Longitude			0.0003 (0.0023)			-0.0005 (0.0023)
Landlocked municipality			0.0244*** (0.0055)			0.0228*** (0.0073)
Montaneous municipality			-0.0031 (0.0032)			-0.0046 (0.0033)
Crimes per capita in 2005			0.1811 (0.1445)			0.0737 (0.1266)
Taxable income per capita (2008)			-0.0000 (0.0000)			-0.0000 (0.0000)
Private sector employees per capita, in 2001			0.0018 (0.0083)			-0.0090 (0.0082)
Municipal unemployment rate, in 2001			0.2608*** (0.0490)			0.1679*** (0.0534)
Municipal population, in 2001			0.0000* (0.0000)			0.0000* (0.0000)
Share of population older than 65, in 2001			-0.0943 (0.0848)			-0.0548 (0.0662)
Share of population between 20-34, in 2001			-0.0406 (0.1790)			0.1810 (0.1303)
Share of population with diploma laurea, in 2001			-0.0882 (0.0733)			-0.0092 (0.0661)
City with at least one pardoned individual				-0.0087+ (0.0059)	-0.0052 (0.0170)	-0.0194+ (0.0123)
Observations	2,256	2,256	2,256	7,159	7,159	7,159
R-squared	0.0200	0.0785	0.2305	0.0124	0.0278	0.1217

Notes. Entries are coefficients from the equation model estimated with OLS. The table is identical to Table 6 but report the coefficients on all the independent variables included in the regressions. Standard errors clustered at the provincial level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

Table A.4: Voters' Response to the Effects of the Collective Pardon - Weighted Least Squares

	Δ Win Margin 2008-2006 Center-right vs. Center-left					
	(1)	(2)	(3)	(4)	(5)	(6)
Incentive to recidivate	0.0043* (0.0025)	0.0034* (0.0020)	0.0043*** (0.0015)	0.0043* (0.0025)	0.0034* (0.0020)	0.0041*** (0.0015)
Pardoned individuals controls	NO	YES	YES	NO	YES	YES
Municipal level controls	NO	NO	YES	NO	NO	YES
Only municipalities with at least one pardoned	YES	YES	YES	NO	NO	NO
Observations	2,256	2,256	2,256	7,159	7,159	7,159
R-squared	0.0109	0.0785	0.2305	0.0073	0.0278	0.1217

Notes. Entries are coefficients from the equation model estimated with weighted least squares. Each observation is weighted by the number of eligible voter in 2008. Pardoned individuals control include: number of pardoned individuals per 1,000 residents in the municipality, average length of original sentence, average age, percentage of pardoned individuals that are employed, percentage of pardoned individuals with primary, secondary and college education, percentage of pardoned individuals convicted for drug, property, violent or other types of crime; Municipal level controls include: municipal area, latitude, longitude, dummy for landlocked municipality, indicator of montaneous or partially montaneous municipality, resident population, share of population with diploma laurea, share of population over 65, share of population 20-34, private sector employees per capita, municipal unemployment rate (in census year 2001), mean taxable income per capita (2008) and crime rate pre-pardon (2005). Standard errors clustered at the provincial level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

Table A.5: Voters' Response to the Effects of the Collective Pardon - Center-right

	Δ Votes per eligible voter 2008-2006 Center-right					
	(1)	(2)	(3)	(4)	(5)	(6)
Incentive to recidivate	0.0012 (0.0009)	0.0012 (0.0009)	0.0013* (0.0008)	0.0012 (0.0009)	0.0012 (0.0009)	0.0013* (0.0008)
Pardoned individuals controls	NO	YES	YES	NO	YES	YES
Municipal level controls	NO	NO	YES	NO	NO	YES
Only municipalities with at least one pardoned	YES	YES	YES	NO	NO	NO
Observations	2,256	2,256	2,256	7,159	7,159	7,159
R-squared	0.0149	0.0482	0.2133	0.0104	0.0202	0.1107

Notes. Entries are coefficients from the equation model estimated with OLS. Pardoned individuals control include: number of pardoned individuals per 1,000 residents in the municipality, average length of original sentence, average age, percentage of pardoned individuals that are employed, percentage of pardoned individuals with primary, secondary and college education, percentage of pardoned individuals convicted for drug, property, violent or other types of crime; Municipal level controls include: municipal area, latitude, longitude, dummy for landlocked municipality, indicator of montaneous or partially montaneous municipality, resident population, share of population with diploma laurea, share of population over 65, share of population 20-34, private sector employees per capita, municipal unemployment rate (in census year 2001), mean taxable income per capita (2008) and crime rate pre-pardon (2005). Standard errors clustered at the provincial level are in parentheses. Significance at the 15% level is represented by +, 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

Table A.6: Voters' Response to the Effects of the Collective Pardon - Center-left

	Δ Votes per eligible voter					
	2008-2006					
	Center-left					
	(1)	(2)	(3)	(4)	(5)	(6)
Incentive to recidivate	-0.0018** (0.0008)	-0.0018** (0.0008)	-0.0016* (0.0008)	-0.0018** (0.0008)	-0.0018** (0.0008)	-0.0012+ (0.0008)
Pardoned individuals controls	NO	YES	YES	NO	YES	YES
Municipal level controls	NO	NO	YES	NO	NO	YES
Only municipalities with at least one pardoned	YES	YES	YES	NO	NO	NO
Observations	2,256	2,256	2,256	7,159	7,159	7,159
R-squared	0.0143	0.0673	0.1724	0.0071	0.0200	0.1227

Notes. Entries are coefficients from the equation model estimated with OLS. Pardoned individuals control include: number of pardoned individuals per 1,000 residents in the municipality, average length of original sentence, average age, percentage of pardoned individuals that are employed, percentage of pardoned individuals with primary, secondary and college education, percentage of pardoned individuals convicted for drug, property, violent or other types of crime; Municipal level controls include: municipal area, latitude, longitude, dummy for landlocked municipality, indicator of montaneous or partially montaneous municipality, resident population, share of population with diploma laurea, share of population over 65, share of population 20-34, private sector employees per capita, municipal unemployment rate (in census year 2001), mean taxable income per capita (2008) and crime rate pre-pardon (2005). Standard errors clustered at the provincial level are in parentheses. Significance at the 15% level is represented by +, 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

Table A.7: Voters' Response to the Effects of the Collective Pardon - Region fixed effects

	Δ Votes per eligible voter					
	2008-2006					
	(1)	(2)	(3)	(4)	(5)	(6)
Incentive to recidivate	0.0020* (0.0012)	0.0023* (0.0012)	0.0025** (0.0012)	0.0021* (0.0012)	0.0024* (0.0012)	0.0023* (0.0012)
Pardoned individuals controls	NO	YES	YES	NO	YES	YES
Municipal level controls	NO	NO	YES	NO	NO	YES
Only municipalities with at least one pardoned	YES	YES	YES	NO	NO	NO
Observations	2,256	2,256	2,256	7,159	7,159	7,159
R-squared	0.3579	0.3698	0.4324	0.3383	0.3413	0.3621

Notes. Entries are coefficients from the equation model estimated with OLS. Pardoned individuals control include: number of pardoned individuals per 1,000 residents in the municipality, average length of original sentence, average age, percentage of pardoned individuals that are employed, percentage of pardoned individuals with primary, secondary and college education, percentage of pardoned individuals convicted for drug, property, violent or other types of crime; Municipal level controls include: municipal area, latitude, longitude, dummy for landlocked municipality, indicator of montaneous or partially montaneous municipality, resident population, share of population with diploma laurea, share of population over 65, share of population 20-34, private sector employees per capita, municipal unemployment rate (in census year 2001), mean taxable income per capita (2008) and crime rate pre-pardon (2005). Standard errors clustered at the provincial level are in parentheses. Significance at the 15% level is represented by +, 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

Table A.8: Voters' Response to the Effects of the Collective Pardon - Province fixed effects

	Δ Votes per eligible voter					
	2008-2006					
	(1)	(2)	(3)	(4)	(5)	(6)
Incentive to recidivate	0.0016 (0.0012)	0.0019+ (0.0012)	0.0023* (0.0012)	0.0012 (0.0012)	0.0016 (0.0012)	0.0016 (0.0012)
Pardoned individuals controls	NO	YES	YES	NO	YES	YES
Municipal level controls	NO	NO	YES	NO	NO	YES
Only municipalities with at least one pardoned	YES	YES	YES	NO	NO	NO
Observations	2,256	2,256	2,256	7,159	7,159	7,159
R-squared	0.4572	0.4686	0.5369	0.4211	0.4241	0.4479

Notes. Entries are coefficients from the equation model estimated with OLS. Pardoned individuals control include: number of pardoned individuals per 1,000 residents in the municipality, average length of original sentence, average age, percentage of pardoned individuals that are employed, percentage of pardoned individuals with primary, secondary and college education, percentage of pardoned individuals convicted for drug, property, violent or other types of crime; Municipal level controls include: municipal area, latitude, longitude, dummy for landlocked municipality, indicator of montaneous or partially montaneous municipality, resident population, share of population with diploma laurea, share of population over 65, share of population 20-34, private sector employees per capita, municipal unemployment rate (in census year 2001), mean taxable income per capita (2008) and crime rate pre-pardon (2005). Standard errors clustered at the provincial level are in parentheses. Significance at the 15% level is represented by +, 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

Table A.9: Incentive to Recidivate and Crime Rate

	Municipal crime rate in 2007					
	(1)	(2)	(3)	(4)	(5)	(6)
Incentive to recidivate	0.0005 (0.0004)	0.0007* (0.0004)	0.0006* (0.0003)	0.0005 (0.0004)	0.0007* (0.0004)	0.0005* (0.0003)
Pardoned individuals controls	NO	YES	YES	NO	YES	YES
Municipal level controls	NO	NO	YES	NO	NO	YES
Only municipalities with at least one pardoned	YES	YES	YES	NO	NO	NO
Observations	2,256	2,256	2,256	7,159	7,159	7,159
R-squared	0.0005	0.0255	0.4962	0.0375	0.0448	0.5187

Notes. Entries are coefficients from the equation model estimated with OLS. Pardoned individuals control include: number of pardoned individuals per 1,000 residents in the municipality, average length of original sentence, average age, percentage of pardoned individuals that are employed, percentage of pardoned individuals with primary, secondary and college education, percentage of pardoned individuals convicted for drug, property, violent or other types of crime; Municipal level controls include: municipal area, latitude, longitude, dummy for landlocked municipality, indicator of montaneous or partially montaneous municipality, resident population, share of population with diploma laurea, share of population over 65, share of population 20-34, private sector employees per capita, municipal unemployment rate (in census year 2001), mean taxable income per capita (2008) and crime rate pre-pardon (2005). Standard errors clustered at the provincial level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

Table A.10: Voters' Response to the Effects of the Collective Pardon - 2SLS

	Δ Win Margin 2008-2006					
	Center-right vs. Center-left					
	(1)	(2)	(3)	(4)	(5)	(6)
Recidivism	0.1900*	0.2105*	0.2040*	0.1900*	0.2105*	0.2040*
	(0.0987)	(0.1171)	(0.1041)	(0.0987)	(0.1171)	(0.1041)
Pardoned individuals controls	NO	YES	YES	NO	YES	YES
Municipal level controls	NO	NO	YES	NO	NO	YES
Only municipalities with at least one pardoned	YES	YES	YES	NO	NO	NO
Observations	2,256	2,256	2,256	7,159	7,159	7,159

Notes. Entries are coefficients from the equation model estimated with 2SLS using the incentive to recidivate as an instrument for the recidivism at the city level. Each observation is weighted by the number of eligible voter in 2008. Pardoned individuals control include: number of pardoned individuals per 1,000 residents in the municipality, average length of original sentence, average age, percentage of pardoned individuals that are employed, percentage of pardoned individuals with primary, secondary and college education, percentage of pardoned individuals convicted for drug, property, violent or other types of crime; Municipal level controls include: municipal area, latitude, longitude, dummy for landlocked municipality, indicator of montaneous or partially montaneous municipality, resident population, share of population with diploma laurea, share of population over 65, share of population 20-34, private sector employees per capita, municipal unemployment rate (in census year 2001), mean taxable income per capita (2008) and crime rate pre-pardon (2005). Standard errors clustered at the provincial level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

Table A.11: Incentive to recidivate & news on crime - OLS results

	At least one news on crime & collective pardon in the municipality						Number of news on crime & collective pardon in the municipality					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Incentive to recidivate	0.0017** (0.0008)	0.0018** (0.0007)	0.0014** (0.0007)	0.0017** (0.0008)	0.0018** (0.0007)	0.0015** (0.0007)	0.0077** (0.0036)	0.0006 (0.0029)	0.0077** (0.0036)	0.0003 (0.0029)		
Pardoned individuals controls	NO	YES	YES	NO	YES	YES	NO	YES	YES	NO	YES	YES
Municipal level controls	NO	NO	YES	NO	NO	YES	NO	NO	YES	NO	NO	YES
Only municipalities with at least one pardoned	YES	YES	YES	NO	NO	NO	YES	YES	YES	NO	NO	NO
Observations	2,256	2,256	2,256	7,159	7,159	7,159	2,255	2,255	7,156	7,156		
R-squared	0.0022	0.0122	0.1871	0.0458	0.0523	0.1409	0.0014	0.8575	0.0093	0.7673		

Notes. Entries are coefficients from the equation model estimated with OLS. Pardoned individuals control include: number of pardoned individuals per 1,000 residents in the municipality, average length of original sentence, average age, percentage of pardoned individuals that are employed, percentage of pardoned individuals with primary, secondary and college education, percentage of pardoned individuals convicted for drug, property, violent or other types of crime; Municipal level controls include: municipal area, latitude, longitude, dummy for landlocked municipality, indicator of montaneous or partially montaneous municipality, resident population, share of population with diploma laurea, share of population over 65, share of population 20-34, private sector employees per capita, municipal unemployment rate (in census year 2001), mean taxable income per capita (2008) and crime rate pre-pardon (2005). Standard errors clustered at the provincial level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

Table A.12: Issue Priority & Perceived Competence of Political Coalitions (*ITANES*) - OLS results

	(1) Crime most important issue gov. should face	(2) C-Left gov. dealt very bad with crime	(3) C-Left best suited to deal with crime	(4) C-Right best suited to deal with crime
Incentive to recidivate	-0.0009 (0.0017)	0.0119* (0.0061)	-0.0022 (0.0022)	0.0011 (0.0066)
Pardoned individuals controls	YES	YES	YES	YES
Municipal level controls	YES	YES	YES	YES
Individual level controls	YES	YES	YES	YES
Observations	2,836	347	347	347
R-squared	0.0511	0.2613	0.2442	0.2461

Notes. Entries are coefficients from the equation model estimated with OLS. Individual level controls include: age, gender, religiosity level, marital status, employment status, self declared left-right political position, frequency of newspaper readership and whether the most viewed TV news channel belongs to the Mediaset media group (owned by the leader of the center-right coalition, Silvio Berlusconi). Pardoned individuals control include: number of pardoned individuals per 1,000 residents in the municipality, average length of original sentence, average age, percentage of pardoned individuals that are employed, percentage of pardoned individuals with primary, secondary and college education, percentage of pardoned individuals convicted for drug, property, violent or other types of crime; Municipal level controls include: municipal area, latitude, longitude, dummy for landlocked municipality, indicator of montaneous or partially montaneous municipality, resident population, share of population with diploma laurea, share of population over 65, share of population 20-34, private sector employees per capita, municipal unemployment rate (in census year 2001), mean taxable income per capita (2008) and crime rate pre-pardon (2005). Observation are weighted according to the sample political weights provided by ITANES. Standard errors clustered at the provincial level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***, which report the results of the test of the underlying coefficient from the Probit model being 0.

Table A.13: Valuation of Political Parties and Issue Priority (*IPSOS*) - OLS results

	(1) Crime main issue in municipality	(2) Crime main issue in Italy	(3) Negative valuation main CL party	(4) Positive valuation main CR party
Incentive to recidivate	0.0000 (0.0009)	0.0004 (0.0014)	0.0020** (0.0009)	0.0007 (0.0008)
Pardoned individuals controls	YES	YES	YES	YES
Municipal level controls	YES	YES	YES	YES
Individual level controls	YES	YES	YES	YES
Observations	3,719	3,719	27,853	28,004
R-squared	0.0617	0.0738	0.0597	0.1196

Notes. Entries are coefficients from the equation model estimated with OLS. Individual level controls include: age, gender, religiosity level, employment status, self declared left-right political position, graduate degree. Pardoned individuals control include: number of pardoned individuals per 1,000 residents in the municipality, average length of original sentence, average age, percentage of pardoned individuals that are employed, percentage of pardoned individuals with primary, secondary and college education, percentage of pardoned individuals convicted for drug, property, violent or other types of crime; Municipal level controls include: municipal area, latitude, longitude, dummy for landlocked municipality, indicator of montaneous or partially montaneous municipality, resident population, share of population with diploma laurea, share of population over 65, share of population 20-34, private sector employees per capita, municipal unemployment rate (in census year 2001), mean taxable income per capita (2008) and crime rate pre-pardon (2005). Observation are weighted according to the sample political weights provided by IPSOS. The econometric specification includes fixed effects for the date of the interview. Standard errors clustered at the provincial level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***, which report the results of the test of the underlying coefficient from the Probit model being 0.

Table A.14: European Elections

	Δ Win Margin					
	2009-2004					
	Center-right vs. Center-left					
	(1)	(2)	(3)	(4)	(5)	(6)
Incentive to recidivate	-0.0000 (0.0002)	0.0001 (0.0002)	0.0001 (0.0002)	-0.0000 (0.0002)	0.0001 (0.0002)	0.0001 (0.0002)
Pardoned individuals controls	NO	YES	YES	NO	YES	YES
Municipal level controls	NO	NO	YES	NO	NO	YES
Only municipalities with at least one pardoned	YES	YES	YES	NO	NO	NO
Observations	2,252	2,252	2,252	7,136	7,136	7,136
R-squared	0.0001	0.0132	0.1149	0.0023	0.0059	0.1006

Notes. Entries are coefficients from the equation model estimated with OLS. Pardoned individuals control include: number of pardoned individuals per 1,000 residents in the municipality, average length of original sentence, average age, percentage of pardoned individuals that are employed, percentage of pardoned individuals with primary, secondary and college education, percentage of pardoned individuals convicted for drug, property, violent or other types of crime; Municipal level controls include: municipal area, latitude, longitude, dummy for landlocked municipality, indicator of montaneous or partially montaneous municipality, resident population, share of population with diploma laurea, share of population over 65, share of population 20-34, private sector employees per capita, municipal unemployment rate (in census year 2001), mean taxable income per capita (2008) and crime rate pre-pardon (2005). Standard errors clustered at the provincial level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.