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First-day criminal recidivism ☆

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ABSTRACT

We report that on any given day the number of inmates released from incarceration significantly affects the number of offenses committed this day, and we name this as first-day recidivism. Our estimates of this novel approach to study early recidivism are robust to a variety of alternative model specifications. We then show that first-day recidivism can be eliminated by an increase in the gratuity provided to prisoners at the time of their release. A simple cost–benefit analysis shows that increasing the gratuity at release is a very efficient policy.

1. Introduction

Criminal recidivism of former prisoners is a widespread phenomenon. Recidivism rates are 65% in the United States (Langan and Levin, 2002), 60% in the Netherlands (Nieuwbeerta et al., 2009), 58% in England and Wales (Cuppleditch and Evans, 2005), and 60% in Uruguay (IACHR, 2011), to mention a few examples. In addition, most criminal recidivism occurs within the first year after release (Langan and Levin, 2002). For example, in the United States criminal recidivism within the first year after release is around 44%. Similar figures apply in Australia (Jones et al., 2006).

In this paper we provide a novel approach to study criminal recidivism. In particular, we focus on recidivism during the first day of freedom, what we name "first-day recidivism." Using a unique database on crime and releases from Montevideo, Uruguay, we find that the number of inmates released on a given day significantly affects the number of offenses committed this day, and we interpret this result as evidence of first-day recidivism. The dynamics of the relationship between crime and releases shows that inmate releases increase crime on the very day of the release but have no effect on crime in subsequent days. This finding points to some special first-day effect and suggests that release policies focusing on preventing first-day recidivism might be effective in reducing crime. Here we focus on the stipend that prisoners receive upon release. We find that an increase in the gratuity at release produces a sharp decrease in first-day recidivism, a decrease that is not compensated by an increase in crime in the following days. The fact that increasing the stipend given to prisoners upon release affects the propensity of released prisoners to engage in criminal behavior is both novel and important from a policy perspective.

Our findings on first-day criminal recidivism are robust to the inclusion of day of the week and year/month fixed effects, and also to controlling for holidays, rainfall, sunshine, and temperature. We also applied a Lasso-type procedure for variable selection proposed by Belloni et al. (forthcoming) that starts to iterate with a highly saturated model and the coefficient of interest remains significant. Given the time-series nature of the exercise at hand, inference is always a concern. To deal with potential deviations of standard homogeneity assumptions, we apply the asymptotic approach proposed by Canay et al. (2013) and all results remain unchanged.

We further explore the reasons underlying first-day recidivism. We report that first-day recidivism is observed for crimes that have a financial motivation (property crimes such as thefts and robberies) and not for other types of offenses (non-property crimes such as domestic violence), findings consistent with a rational framework in which offenders have liquidity constraints, as in Jacob et al. (2007).

Our paper contributes to the literature on criminal recidivism. The criminology literature defines criminal recidivism as a time interval between two events (Maltz, 1984): a release event (usually from

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incarceration) and a failure event (re-arrest or reconviction).[1] Here, we focus on the estimation of re-offenses instead of following the usual procedure of using records on re-arrest or re-conviction, allowing in this way the inclusion of a large pool of offenses usually omitted in standard statistics.[2] To the best of our knowledge, our paper provides the first estimates on the magnitude of the re-offense rate during the very day prisoners are released.

Our findings are related to the literature on the effects of incarceration rates on crime. While estimated magnitudes are sensitive to the estimation methodology, most careful research finds that an increase in incarceration rates leads to a reduction in crime. Incarceration, however, has two effects on criminal behavior: deterrence and incapacitation. A deterred offender is able to commit crime but chooses not to, whereas an incapacitated offender would choose to commit crime but is unable to. There is an important body of literature that tries to isolate pure incapacitation effects. Marvell and Moody (1994) use inmate interviews on criminal activity prior to arrest to calculate the offenses that inmates would have committed had they not been incarcerated and report a crime-prison elasticity of −0.16. Levitt (1996) uses prison-overcrowding litigation in the United States as an instrument for state level incarceration rates and reports crime-prison elasticities between −0.26 and −0.42. Johnson and Raphael use data for the period 1978 to 1990 in the United States and conclude that each additional prison year served prevents 14 reported serious crimes. Owens (2009) uses quasi-experimental variation in sentence length created by a change in Maryland law that reduced the recommended sentences for a group of individuals between 23 and 25 years old with delinquent records by a mean of 222 days per delinquent "point." She finds that offenders were on average arrested for 2.8 criminal acts and were involved in between 1.4 and 1.6 index crimes per person during the period in which they would have otherwise been incarcerated. More related to our approach, two recent papers exploit the natural experiment generated by massive releases in Italy (which liberate approximately one third of the prison population) to estimate the reverse incapacitation effect. Barbarino and Mastrobuoni (2014) estimate an elasticity of crime with respect to incarceration of around −0.20. Buonanno and Raphael (2013) report that each prison year served prevents 14 to 18 crimes.

Our contribution to this literature is to use high-frequency data that allows us to estimate a very short-run reverse incapacitation effect. Our estimates indicate that first-day recidivism accounts for a 0.8% increase in Montevideo's property crimes, a relatively small effect from a criminal justice point of view. However, our estimates also suggest that approximately one out of four prisoners commit a crime on the very day of release, a very large effect from an individual perspective.

Our work also contributes to a recent discussion on release policies. Release policies have received little attention in the economics literature, an omission that is unfortunate considering that, only in the Unites States, approximately six hundred thousand prisoners are released every year (BJS, 2002), and an important share of crime is committed by the newly released (see, for example, Raphael and Stoll, 2004). Release policy has several relevant dimensions. In a recent work, Kuziemko (2013) compares discretionary parole and fixed-sentence regimes and reports evidence that parole boards appear to perform better in terms of reducing recidivism compared to regimes in which inmates' original sentences are binding. Di Tella and Schargrodsky (2013) study the re-arrest rates of individuals released from prison and individuals released from electronic monitoring, and report that there is a large, negative causal effect (up to 40%) on criminal recidivism of treating individuals with electronic monitoring relative to prison. In a related paper, Marie (2013) studies the electronic monitoring release policy in England and Wales, and finds that early electronic monitoring release reduces the chances of re-arrest of ex-prisoners by between 20 and 40% within two years. In this paper we study another dimension of release policy: the effect of the gratuity given at release on very early recidivism rates.[3] There is a related literature in the early 1980s, mainly in sociology. Rossi et al. (1980) and Mallar and Thornton (1978) analyze a randomized experiment in which unemployment benefits were extended to individuals immediately upon release from prison. They find significantly fewer re-arrest for property crimes within the year. Berk et al. (1980) analyze two related experiments and report that modest transfer payments (again in the form of unemployment benefits) reduce recidivism in the twelve-month period following release from prison. There is also a related literature on job market opportunities and recidivism. Schnepel (2013) find that an increase in the prevalence of relevant employment opportunities is associated with an important decrease in the probability that released offenders will return to prison within one year.

Our results on the effects of an increase in the payment received by prisoners at release are in line with the empirical evidence on the effects of cash transfers on crime. Loureiro (2012) and Chioda et al. (2012) find a negative relationship between conditional cash transfers and property crime in Brazil. Similar results are found in Colombia (Camacho and Mejía, 2013). Jacob and Ludwig (2010) analyze a housing voucher program (that increases cash income from reductions in out-of-pocket spending on housing) in Chicago and report a decrease in arrests. DeFronzo (1996, 1997), Hannon and DeFronzo (1998), and Foley (2011) study the impact of the amount and timing of welfare payments in the United States. Interestingly, they find the liquidity provided by the monthly payments not only reduces crime, but also affects the timing of offenses during the month.

The paper continues as follows. Section 3 describes the data. Section 4 reports the results. Section 4 concludes.

2. Data

Our dataset includes the universe of criminal incidents reported at the Police Department of Montevideo: more than 690,000 felonies reported in Montevideo, the capital of Uruguay, between January 1st 2004 and March 15th 2011 (2631 days).[4] The two most frequent types of crime are theft and robbery. Theft is defined as depriving a person of property without the use of violence (61% of all police-recorded offenses in Montevideo in our sample period), whereas robbery is defined as depriving a person of property with the use or threat of violence (9% of the offenses in our database). There is an average of 270 offenses per day of which 192 correspond to property crime (165 thefts and 27 robberies) and 78 to non-property crime. Daily and monthly patterns of crime are shown in Fig. 1.

Aside from crime data, our database includes daily information on average temperature (degrees centigrade), rainfall (millimeters), and hours of sunshine. The literature has long recognized that weather is strongly correlated to crime, with hotter weather generally associated

[1] The release event could also be from electronic monitoring or any other type of official custody.

[2] Harrendorf et al. (2010) consider more than 100 countries in the United Nations' International Statistics on Crime and Justice and report high levels of attrition between the commitment of a crime and the arrest or conviction of the offender (50% of offenders are arrested and 19% are convicted). In Uruguay only 25% of the police-recorded offenses are prosecuted.

[3] There is no pattern around the world on what prisoners receive when released from prison. In Ireland, Sweden, and Argentina released prisoners receive the money earned by working while in prison; in Mexico and Estonia the prisoners are forced to save a portion of this income until the moment of liberation. In Australia, Canada, the Netherlands, and South Africa the prison authorities must ensure that former prisoners have enough funds to return to their homes, even by providing funds if necessary. There are also some examples such as Chile where the government does not provide any allowance to released interns.

[4] Montevideo has a population of 1.5 million of inhabitants, roughly half of the population of the country.