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The juvenile crime dilemma

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ABSTRACT

I develop a dynamic model of behavior to analyze juvenile crime. Forward-looking youths consistently decide between crime and legal activities depending on their endowment of work- and crime-specific human capital, which in turn is shaped by their history of past choices. The model explicitly recognizes the contrasting levels of punishment of the juvenile and adult criminal systems. In order to evaluate whether the model explains the evolution of crime, I calibrate it and test whether it can account for the observed variations in juvenile crime levels across changes in economic and legal conditions. The model is able to reproduce 91 percent of the recent increase in juvenile crime in Uruguay by affecting key model parameters in line with observed facts (a decrease in the relative returns of legal activities and the introduction of a lenient juvenile crime regulation and enforcement strategy). Counterfactual model results predict that a reduction in the age of criminal majority would significantly lower juvenile crime involvement. However, if the transmission of crime-related skills in correctional facilities were strong enough, harsher punishments to juveniles would increase the likelihood of criminal involvement later in life.

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1. Introduction

Juvenile delinquency is at the forefront of social challenges worldwide. The delicate intersection between childhood and criminality creates a complex dilemma to solve. This concern cuts across economic development categories and geographical regions as youth crime rates rose in almost every part of the world in the 1990s (United Nations, 2004, 2007).² Only in the US, more than 70,000 juveniles are jailed in detention centers (OJJDP, 2011).

The literature has found several determinants of juvenile criminal involvement (Levitt and Lochner, 2000). Biological factors, such as being male and having low intelligence, are accurate predictors of crime. Family background factors such as erratic parental discipline, lack of adequate supervision and maternal rejection are also strongly correlated with later criminal involvement. Following Becker (1968), juvenile delinquency can also be thought of as a rational response to the

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² Juvenile offending refers to a wide range of violations of legal and social norms, from minor offenses to serious crimes. The focus of this paper is on serious juvenile crime.

incentives for engaging in legal and criminal activities. Some youths will engage in criminal behavior if the potential gains are large enough while the expected punishment is relatively low.

Juvenile crime is usually treated quite differently from adult crime. Offenses committed by youths are considered delinquent acts within a separate justice system. This system is designed to recognize the special needs and immature status of adolescents by emphasizing rehabilitation over punishment. Juvenile criminal records are sealed from adult courts and public record, arrested youths are judged by juvenile courts, and convicted minors are strictly segregated from adults in custody. Psychological research supports this differential treatment based on the developmental immaturity of adolescents (Steinberg, 2009). However, in the fight against juvenile delinquency, several countries are considering trying violent juvenile offenders as adults in court.

Beyond psychological concerns, invoking the heavy hand of the adult criminal justice system might raise relevant issues of intertemporal choice and have ambiguous effects on the incentives for criminal involvement. The negative signal generated by court records, or the acquisition of criminal-specific human capital in correctional facilities could offset the potential reduction in juvenile crime achieved through deterrence from harsher punishments.

To tackle these issues, I develop a new dynamic model of crime in which youths face the dilemma to choose between crime and legal activities and decisions are affected by their endowments of work- and crime-related skills, which in turn depend upon both their current and past choices. In this model, youths are forward-looking and recognize that their present choices affect their future skills and income. This path dependence incorporates individual heterogeneity since agents with contrasting records face external incentives to commit crime in different ways and thus exhibit divergent behaviors.

Because the model developed in this paper is designed to explain juvenile crime, it accounts for the fact that key factors affecting individual decisions are significantly different before and after the age of criminal majority (the age at which individuals become subject to adult courts). The probability of apprehension, the level of punishment, and the probability of escape from correctional facilities differ for those below and above this threshold.

This framework differs from the models developed in the literature. In static models of crime, agents make choices with no regard for future consequences of current decisions (Becker, 1968; Ehrlich, 1973; Block and Heineke, 1975; Witte, 1980). With only few exceptions (Imai and Krishna, 2004; Merlo and Wolpin, 2009; Sickles and Williams, 2008), previous dynamic models of crime do not emphasize the life cycle aspect of criminal behavior (Flinn, 1986; Imrohroglu et al., 2004; Burdett et al., 2003, 2004; Huang et al., 2004; Lochner, 2004; Mocan et al., 2005; McCrary, 2010). Only Mocan et al. (2005) explores a dynamic model of crime where agents are endowed with two types of human capital. Most importantly, to the best of my knowledge there are no models in the literature specifically designed to account for the change in key parameters at the age of criminal majority.

Substantial changes in juvenile crime incentives make Uruguay an ideal environment to calibrate and test this model. The dynamics of wages and household wealth after a serious economic crisis have resulted in financial rewards from criminal activities exceeding returns from the job market. Additionally, the introduction of a lenient juvenile crime regulation and an increase in the escape rate from juvenile correctional facilities substantially lowered the expected cost of crime. At the same time, juvenile crime more than tripled between 2001 and 2010. This massive spike in youth delinquency has triggered a strong debate over the threshold age of criminal responsibility.

The calibrated model is able to reproduce 91 percent of the recent increase in juvenile crime in Uruguay by affecting key model parameters in line with observed facts. According to the model, the evolution of the returns to legal activities relative to the monetary gains from crime explains 43 percent of the variation in juvenile delinquency from 2001 to 2010. Additionally, the approval of a lenient juvenile criminal regulation in 2004 meant to align local legislation with international treaties and agreements played a key role, explaining an additional 33 percent of the observed variation. The significant increase in escapes from juvenile correctional facilities explains an additional 4 percent of the increase in juvenile crime.

The model provides a framework to quantify the effectiveness of alternative measures in the fight against juvenile crime. Counterfactual model results predict that lowering the age of criminal majority from 18 to 16 would significantly reduce juvenile crime involvement. However, special care should be taken to minimize the school-of-crime effect, according to which inmates learn criminal skills in correctional facilities. If the transmission of crime-related skills were strong enough, the cure could prove to be worse than the disease, as the model predicts that harsher punishments may increase the likelihood of criminal involvement once today's juveniles enter adulthood.

The remainder of the paper is organized as follows. Section 2 presents the model. Section 3 calibrates the model for Uruguay, and Section 4 tests its ability to explain the recent spike in juvenile crime. Section 5 discusses alternative measures to fight juvenile delinquency. Section 6 concludes.

2. The model

In this section, I develop a dynamic model to analyze juvenile behavior. Heterogeneous youths choose a strategy composed of an action for the current period and a set of actions for the subsequent periods of their working lives in order to maximize their discounted expected income: $E_t \sum_{t=0}^T \beta^t y_t$. E_t is the expectation operator conditional on information available at time t , T is the age of retirement, β is the subjective discount factor, and y_t is the level of income at time t . Every period, individuals face legal and criminal opportunities and choose between legal activities (studying and working) and crime. Agents are endowed with two different types of human capital, work-related skills H and crime-related skills B , which evolve in accordance with their choices.

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