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WORKFARE Y CRIMEN: EVIDENCIA PARA ARGENTINA

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RESUMEN

Este trabajo investiga el efecto de introducir un programa masivo de *workfare* sobre los crímenes de propiedad. Para evitar el problema de endogeneidad común de los factores que determinan conjuntamente el crimen y la demanda para *workfare* usamos variables instrumentales. Explotamos dos aspectos especiales. Primero, el programa fue asignado de acuerdo a criterios políticos que intentan atraer provincias y/o condados alineados con el gobierno nacional. Segundo, el programa fue otorgado a mediados de 2002 y culminó después, por lo que no hubo nuevos miembros del programa. Usamos la afiliación política a diferentes niveles de gobierno como variable instrumental del número de programas de *workfare* per cápita y encontramos que el programa redujo los crímenes de propiedad pero no tuvo un efecto sobre los otros tipos de crimen. Esta investigación representa una contribución a la literatura del crimen, ya que este tema no ha sido explorado anteriormente. Si los programas de *workfare* tienen un efecto en el crimen, entonces el efecto sobre el bienestar es diferente del calculado frecuentemente en la literatura.

Palabras clave: crimen, Plan Jefes y Jefas de Hogar Desocupados, Argentina, *workfare*

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ABSTRACT

This paper investigates the effect of introducing a massive workfare program on property crimes. In order to circumvent the endogeneity problem common to joint factors determining crime and demand for workfare we make use of instrumental variables. We exploit two special features. First, the program was assigned according to political criteria which were trying to attract provinces and/or counties who were aligned with the national government. Second, the program was grant in mid-2002 and closed afterwards, so there were no new-comers to the program. We use political affiliation of different level of governments as instrument for the number of workfare programs per capita and find that the program reduced property crime but had no effect on other kinds of crime. The paper represents a contribution to the crime literature, since this issue has not been explored. If workfare programs have an effect on crime, then the welfare effect is different from the one often calculated in the literature.

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Keywords: crime, *Plan Jefes y Jefas de Hogar Desocupados*, Argentina, *workfare*

Workfare and Crime: Evidence for Argentina ^{*}

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Abstract

This paper investigates the effect of introducing a massive workfare program on property crimes. In order to circumvent the endogeneity problem common to joint factors determining crime and demand for workfare we make use of instrumental variables.

We exploit two special features. First, the program was assigned according to political criteria which were trying to attract provinces and/or counties who were aligned with the national government. Second, the program was granted in mid-2002 and closed afterwards, so there were no new-comers to the program.

We use political affiliation of different level of governments as instruments for the number of workfare programs per capita and find that the program reduced property crime but had no effect on other kinds of crime.

The paper represents a contribution to the crime literature, since this issue in developing countries has seldom been explored. If workfare programs have an effect on crime, then the welfare effect is different from the one often calculated in the literature.

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1 Introduction

Crime is a very important concern for individuals living both in developing and developed countries. Seminal studies postulating an economic model of criminal behavior (Becker, 1968 and Ehrlich, 1973) claim that incentives are important for an individual to engage in criminal activity. Becker's original model states that the number of offenses O_i and individual would commit during a particular period is a function of p_j , the probability of conviction per offense, f_j her punishment per offense and u_j , which represents other variables such as income generated in legal activities, "law-abidingness", etc. This can be summarized in:

$$O_j = O_j(p_j, f_j, u_j)$$

Among the main predictions of classical static models of crime, we have that crime will decrease when p_j and f_j increase. Several papers have used different methodologies to measure such effects. Levitt, 1997 and 2002, McCrary, 2002 Di Tella and Schargordsky, 2004 and Corman and Mocan, 2005, look at the effects of different specifications for increasing p_j . As far as f_j is concerned, there are studies looking at differences in sentences length, prison conditions, etc. (Lee and McCrary, 2009, Drago et al., 2009, among others). There are also many empirical studies that look at several factors affecting u_j . Many of such studies have focused on how unemployment and income inequality affect property crimes. Freeman (1999) and Mustard (2010) survey the literature. Most studies found a positive effect of unemployment on crime, but such effect is small and fail to explain the observed variation in crime rates. Freeman points out that time series data for the US for 1960-1980 while the crime rate increased sharply, unemployment just trended slightly. Using data at the individual level, there is more evidence that unemployment is linked to crime, however, the relationship is not strong. More recent work links crime to wages and income distribution (Grogger 1998; Gould, Weinberg, and Mustard 2002, Machin and Meghir, 2004) find low wages and increasing inequality increase property crime.

While empirical work documents that a great proportion of property crime is committed by low skilled individuals, evidence that less education is a cause for crime is scarce (Lochner, 2010, Lochner and Moretti, 2004). Literature related to

other economic incentives to reduce crime is limited too. Here we will measure the causal effect of the introduction of a workfare program on crime. In general, it is very difficult to establish such causality, due to the existence of unobservable variables jointly determining crime rates and participation in welfare programs. It is often the case that areas stricken by poverty and unemployment have also a higher part of the population whose income depends on welfare. The evidence of social experiments is very scarce (Rossi et al, 1980 and Needels, 1996) and in general, the scope for conducting social experiments has so far been limited. Doyle et al (1999) use US state level panel data to look at the effect of wages on crime, finding evidence that wages, specially in the low skilled sector reduce property crime. Also, wages can explain a higher variability in observed crime rates than unemployment. Raphael and Winter Ebmer (2001), Gould et al (2002) for the US and Papps and Winkelman (2002) for New Zealand find positive (negative) effects of unemployment (wages) on property crime for several specifications using panel data. Mustard (2010) surveys the literature for other European countries. Machin and Meghir (2004) look at income distribution and crime for the UK, finding that changes in relative wages of low skilled individuals do affect crime.

Literature looking at other type of economic incentives to reduce crime is more limited. It is possible to think that unemployment benefits, income maintenance programs and other welfare programs may have an effect on crime. We can expect workfare programs to have an effect on crime through several channels. First, if crime is a substitute for lack of income, then workfare should have a negative effect, since workfare programs are generally associated with a monetary subsidy. Secondly, if work requirements of the program are enforced, then individuals would have less time to commit crimes (incapacitation effect). Finally, if recipients are not longer eligible for workfare once they are apprehended or convicted, workfare may have a dynamic deterrent effect on crime. If workfare programs do have an effect on crime, then total welfare effects of workfare programs may be different to the ones commonly analyzed in the literature. Several authors in the criminalistic field have studied the relationship between crime and payments associated with social programs using cross sectional data. DeFranzo (1996, 1997) and Hannon and DeFranzo's (1998a, 1998b) results indicate social programs reduce most severe crimes. However, Burek (2005) finds that such programs are associated with an increase in petty crimes. Machin and

Marie (2004) study the effect of a reduction in unemployment benefits in England and find a positive effect on crime. Finally, Foley (2008) shows that timing in the payment of benefits of welfare programs matters for criminal activity, specially for minor crimes. More staggered and frequent welfare payments are associated with a reduction in property crime.

The main empirical problem which arises when studying the causal effect of welfare programs on crime is the existence of unobservables affecting the allocation of such programs and crime rates within a community. It is highly probable that communities where there is more population on welfare has also other unobserved characteristics associated with crime rates. In this sense, the amount of social program for a given region is endogenous and naive regression coefficients are biased.

In this paper, we study the effect of the introduction of an enormous workfare program, *Plan Jefes y Jefas de Hogar Desocupados*, henceforth *PJH*, on crime for the case of Argentina. In order to circumvent the endogeneity problem arising from unobserved factors affecting both crime and the demand for workfare, we make use of instrumental variables estimation. We show that the workfare program was assigned in response to political demands, which are unrelated to crime. Our identification strategy is based on a widely supported fact by the political economy literature:¹ incumbent governments target spending to enhance their electoral prospects. We show that there is a strong correlation between the support for government and the granting of subsidies, and that the percentage of government support in previous elections is a valid instrument for the number of per capita workfare programs across districts. There is evidence on the use of social programs to influence voters in different Latin American countries For the case of Mexico, Green (2006) shows that there were small effects of political biases affecting the distribution of PROGRESA,² even when this program had clear eligibility rules. Manacorda et al. (2009) show that Uruguay's PANES³ strongly influenced votes in the following election.

¹see next section for details.

²PROGRESA is a conditional cash transfer program implemented in Mexico. The program main objective was to combine short term poverty alleviation by providing income support with long term human capital accumulation in poor families by conditioning the subsidy to school attendance. For more information see Parker (2009).

³PANES was a program similar to PROGRESA, which was implemented in response to the economic crisis of 2003.

Argentina is a middle income country located in South America, which enjoyed relatively high standards of living until the late seventies. Decades of populist government and inward looking policies slowly deteriorated economic conditions, worsening social indicators. Since 1995, property crimes have shown an increasing trend in Argentina. While there is no conclusive agreement about what has caused such increase, Garzette (2003) shows that property crime worked as a redistributive tool in the context of a worsening in socioeconomic conditions among some sectors of the population, specially the lack of opportunities in the labor market. If this hypothesis is true, then any social program working as an income maintenance program would reduce crime. Nevertheless, we cannot expect this only effect will prevail, since we can also expect that freeing time from income generating activities will also increase the amount of time to delinquent. We will make use of a special feature of the way *PJH* was granted across counties in order to overcome the endogeneity problem.

We show that the number of per capita *PJH* granted in each jurisdiction was related to votes in the previous election and not according to objective criteria for program inclusion, i.e.: poverty, unemployment, etc. The national government granting the program was called the Peronist Party. Peronists have a long tradition of clientelism in Argentina. The Party was founded in the late 1940's and was backed by poor and lower middle classes. Different studies (Auyero, 2001 and Salvochea 2008) provide evidence of the existence of different networks used to assign subsidies or other "favors" in districts where individuals are core supporters of Peronist governments. *PJH* did not enjoy any support from middle classes. It was very common to see newspaper articles showing how such subsidies were assigned as political favors.⁴

As mentioned before, we expect several effects through which *PJH* may affect crime and such channels may be all operating at the same time. One is a pure income effect, as workfare increases disposable income, this would reduce the number of property crimes which respond to financial motivation. Secondly, an incapacitation effect, of ambiguous sign, one arising from the fact that if workfare requirements in the program are enforced⁵ we would expect less time to commit crimes. However, the incapacitation effect can work with the opposite sign, since individuals on workfare

⁴La Nación newspaper, 2003, 2004, Página 12, 2003, 2004, Ambito Financiero, 2004, etc.

⁵In theory, *PJH* recipients were required to comply with some work requirements up to 20 hours per week. Such requirements were never enforced and survey data shows that only 10% of workfare recipients was working.

may decide not to work or search for a job, enjoying more free time and thus, committing more crimes. Finally, we can expect a dynamic deterrence effect on crime, if having a record (or being caught), prevents you from receiving program's benefits.

We find strong effects of *PJH* on crime. Elasticity estimates are in the range of -0.7, implying an increase of 1% in workfare programs reduces property crime by 0.7%. There is no statistically significant effect on other type of crimes. We conduct some robustness tests in order to rule out other potential effects behind our results.

This paper contributes to the economics of crime in different dimensions. First, it provides evidence on the importance of economic incentives on crime, hinting at different mechanisms through which welfare programs can operate. Secondly, it adds to the literature of unintended consequences of social programs, which potential implications for welfare calculations.

This paper is structured as follows: section 2 and 3 presents the main characteristics of *PJH* and the evidence of the use of transfers with political objectives respectively. Section 4 presents the estimations and the datasets available for this paper. Finally, section 5 concludes.

2 The *PJH* program

Argentina introduced a workfare program called *PJH* in response to the severe economic crisis the country suffered in late 2001. In April 2002 unemployment peaked at 22%. Poverty increased from 30 to 45% between April 2001 and April 2002. *PJH* appeared to be a paliative measure to ensure a minimum monthly income for disadvantaged families in Argentina. In 2003, *PHJ* covered 2 million beneficiaries, worth \$3.7 billions (US\$ 1.2) in government expenditure and approximately 20% of the labor force.

PJH was created by a Presidential Executive Order⁶ in April 2002. It was justified based on Article 75-22 of the Argentine Constitution, which recognizes the right to "social inclusion". *PJH* main objective was to "guarantee a minimum income to all vulnerable Argentine families " The monetary benefit was granted to unemployed

⁶Decreto 565/2002

head of households with children under the age of 18. Each beneficiary received a monthly sum of AR\$ 150 (around US\$ 40 and the amount of the subsidy has remained fixed since 2002). In order to receive such benefit, the individual had to work between four and six hours per day. Program enrollment was free and was open between April 4th and May 17th 2002. People older than 60 without any social security, disabled individuals under 18 and household where either the head or the spouse was pregnant were also eligible. Working requirements were lifted if the individual returned to formal education or training.

In order to become eligible, individuals must provide evidence of the following:

1- in the case of adults, proof that they were unemployed head of households and that have children attending school. Proof of unemployment consisted on a signed declaration stating so.

2- for the case of younger unemployed, unemployment proof in the same spirit that mentioned in 1.

3- for the case of the elderly, the benefit was granted provided they did not have access to any other pension benefits.

The benefit conferred by *PJH* was compatible with receiving other social programs such as scholarships, food aid, etc. as long as the amount received was lower than the amount of *PJH*. While the program was quickly implemented, there was a significant proportion of eligible individuals who were left out.

Enrollment into the program was very rapid and implementation was also quick and massive, but not all the eligible population was receiving the benefits. The main critic was that *PJH* was granted with political objectives and that much of the information provided by the potential beneficiaries was false, either to become eligible or to receive more than one benefit.⁷ However, many of the so called "inconsistencies" were fixed relatively quickly. Even though anecdotal evidence indicates some sort of inclusion error, the main problem with *PJH* was of horizontal equity. *PJH* enrollment was permitted for a short period of time and a great number of eligible population was left out. As we will see later, *PJH* was decentralized at the county level, and the central government assigned a number of *PJH* to each county, based more on political reasons than in the true number of eligible population in each county.

Literature has long studied the effects of welfare programs on employment, labor

⁷Paz & Zadikoff (2003) summarize all the anecdotal evidence which appeared in newspapers.

supply and several other welfare measures⁸, but so far the relationship between such programs and crime has less explored.

For the Argentine case, there are several studies looking at the effect of *PJH* on several outcomes. Paz and Zadikoff (2003) showed how the low compliance of the eligibility criteria. According to the authors, Argentina has a high level of labor informality, defined as employers not paying Social Security taxes, specially for low wage jobs. In this sense, being unemployed is difficult to monitor by program authorities and most of the beneficiaries were out of the labor force and not unemployed, according to the definition used in Argentine Household Surveys. However, if actual beneficiaries are considered, almost the totality of them were poor. Gasparini et. al (2008) study whether *PJH* created incentives to take informal jobs, given the fact that beneficiaries could still claim *PJH* benefits when employed in the informal sector, but they had to forgo them if they had a formal job. The authors found a small effect, which is also decreasing in time, since the benefits were frozen in monetary terms and average wages both in the formal and the informal sectors rose sharply. Galasso and Ravallion (2002) found that *PHJ* had a sizeable effect on extreme poverty. Also, they report women who were out of the labor force were significantly over-represented in the initial allocation of *PJH*. Finally, Duryea and Schargrodsy (2008) look at gradual introduction of debit cards to claim *PJH* benefits (they were paid in cash at the beginning and then gradually replaced by debit cards) and its effects on savings, purchases and bancarization.

In order quantify the magnitude of *PJH*, we present below some data at the time or program deployment. *PJH* beneficiaries amounted to 3.41 of total population. In terms of gender, more women participated in the program than men, 4.49 of total women were covered vs. only 2.23 of all men. According to information available in the Household Survey in 2002, only 10% of beneficiaries were complying with working requirements. Finally, in terms of effective coverage, the program only covered around a half of population who meet the requirements for claiming the benefits. However, all the effective beneficiaries were poor. These brief descriptive statistics show that the program worked as a de facto income maintenance program and not as a traditional workfare program. This allows us to somehow expect little effect on crime arising from having to fulfill work requirements. However, we might expect some effect

⁸For a literature review, see Moffit (1992) and Blank (2002).

arising from people not working because of the disincentives generated by *PJH*.

3 Argentine government and *clientelism*

Literature⁹ for both developed and developing countries (Case, 2001, for Albania, Cole, 2004, Dahlberg and Johansson, 2002, for Sweden, Green, 2006, for Mexico, Manacorda et. al, 2009, for Uruguay and Schady, 2000, for Peru, among others) suggests that government may target spending in order to gain votes. Models of redistribution postulate several ways through which an incumbent government can affect voting behavior. If an incumbent believes spending will affect voting behavior and, as it is generally the case, they have access to resources which they can transfer, it is expected they would transfer such resources in such a way that maximize the number of votes they obtain. However, there are several competing views as which is the best distributional strategy to adopt. Theory predicts two main strategies based on whether transfers are made to "core supporters", where transfers yield the highest rate of return in terms of votes, or to "swing voters" a less responsive group .

One states that the incumbent will transfer most resources to voters who have been supporters and transfers have influenced their votes in the past or "core supporters". Cox and McCubbins (1986) present a model where a risk averse candidate will maximize expected votes by promising benefits to their core supporters (most responsive groups). However, if the incumbent is less risk averse, he will invest more on "swing voters".

Other models (Lindbeck and Weibull, 1987) predict most of the transfers will go to swing voters, since "core supporters" will vote for the incumbent anyway. Finally, Dixit and Londregan (1996) show that results depend on model parameters, and that transfers depend on the abilities of the political party in the distribution of benefits across groups.

The literature on political economy of fiscal policies, clientelism and patronage has long roots in Latin America and other developing countries. The Peronist Party is the relevant political party for our study. Peronists have a long tradition of clientelism in Argentina. The Party was founded in the late 1940's and was widely backed by

⁹This section rests heavily on Green (2006).

poor and lower middle classes. Several studies, mainly in sociology and to a lesser extent in political science, provide evidence on the working of peronism and political clientelism in Argentina. Auyero (1999, 2000), studies the networks established by political representatives with slum dwellers in exchange for food, medicine or other programs.

Two different mechanisms for granting welfare programs can be postulated. Theoretical literature on voting markets points two different concepts through which transfers can be used for political purposes. One, "clientelism", defined as the exchange of votes for favors conditional on being elected and vote buying as vote for cash (before the election). Another one, can be thought as rewarding previous votes.

In the context of Argentina, anecdotal evidence points out to the fact that *PJH* was perceived as being granted more as to prove political loyalty than to target poor unemployed head of household individuals. In fact, the household survey allows us to see that there were 52% of recipients who were not head of households. Moreover, eligible population left uncovered by PHJ amounted to two third of the actual covered population.¹⁰ Finally, the ratio of programs to unemployed was higher in regions where unemployed was lower.

Figure 1 shows a positive correlation (conditioned to other variables such as poverty, unemployment and some other demographic characteristics) between the number of votes for the peronist party at the county level and the number of programs granted. This fact, together with some objective data about program deployment allows us to provide some support to the hypothesis that *PJH* was granted more responding to political considerations than to cover eligible population effectively.

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¹⁰For more information on the inclusion and exclusion errors see Paz and Zadikoff (2003).

5 Estimation

5.1 Data sets

We will rely on data coming from different sources in order to build yearly panel data at the county level (446 counties) for the period 2001-2007. We have information on the number of workfare beneficiaries (male and female) in each county, we can calculate how many beneficiaries are fulfilling the labor requirements at the province level too. Moreover, we have detailed information on different type of crimes (property crimes, murder, homicides, rape, etc) We will also have several other variables which may be affecting the crime rate such as: employment, formal employment, educational levels, poverty and other demographics controls and proxies for the economic activity as car sales and per capita energy consumption. Finally, we have several political variables: county and provincial ruling parties, percentage of votes of each party, etc.

Data on *PJH* comes from the Ministry of Labor and Social Security, crime information is recorded by the Ministry of Justice. Finally, the rest of the data required is available at the SEDLAC microeconomic database¹¹.

5.2 Descriptive statistics

Table 1 summarizes the main descriptive statistics in our study. The numbers presented there corresponds to the year 2002, the year *PJH* was assigned. As it can be seen from it, *PJH* per capita averaged 0.047. Poverty and unemployment amounted to 33% and 20% respectively, which was very high for Argentine historical standards. Table 1 presents summary statistics for the main political variables. The government that took office in 2002 was Peronist, but most of the counties and provinces voted for their representatives in 2001 (53.7% of the counties and 67.4% of the provinces were still in Peronist hands).

Table 1 shows that per capita *PJH* was higher in poorer provinces, but lower in regions of high unemployment. The number of per capita workfare programs was

¹¹The Socioeconomic Database for Latin America and the Caribbean (SEDLAC) is a project jointly developed by CEDLAS at the Universidad Nacional de La Plata (Argentina) and the World Bank's LAC poverty group (LCSPP). This database contains information on more than 200 official household surveys in 25 LAC countries. All variables in SEDLAC are constructed using consistent criteria across countries and years, and identical programming routines (see sedlac.econo.unlp.edu.ar).

higher when the province did not have a Peronist Government.

5.3 Empirical specification

If assignment to *PJH* had been random, then its effect on crime could be estimated as:

$$d_{it} = \alpha + T_{it}\beta + X_{it}\gamma + \mu_{it} \quad (1)$$

where d_{it} is the crime rate in county i at time t , T_{it} the per capita number of workfare plans, X_{it} are county and provincial controls and μ_{it} the disturbance term. If workfare participation had been assigned randomly, equation (1) could be consistently estimated by ordinary least squares (OLS). However, participation in *PJH* was not random and this may cause different biases in the estimation of (1) by OLS due to the existence of unobservable variables affecting both the number of people on workfare and crime rates. In order to be able to correctly identify the causal effect of workfare on crime, we will rely on estimations using instrumental variables. In order to do that, we must find a variable or a vector of variables z which is correlated to d_{it} only through T_{it} and uncorrelated to μ_{it} . Such set of variables exists in this case, since there is evidence that *PJH* was granted to counties mostly responding to political objectives of the central government than following objective criteria of helping the unemployed.

In terms of instrumental variables estimations, we will use the fact that the national government used *PJH* as a political tool to win political allies. This was based on two different important reasons. First of all, when *PJH* was implemented, the country faced one of the most severe economic downturns in history and the national government needed consensus on some broader agenda. Secondly, the national government had not been elected by popular vote, since the democratic government had left office in December 2001. The new government had been appointed by Congress and did not enjoy much popular support¹². In this sense, *PJH* was granted

¹²General presidential elections were held in 1999. The winner was known as the "Alianza" which was an alliance of the Radical Party with the moderate left party. However, many provinces and counties remained in Peronist hands. Soon after taking office, economic conditions deteriorated rapidly and in December 2001 after bloody demonstration and social unrest the "Allianza" president resigned. After a short period of political uncertainty, a new Peronist president was appointed by the Congress. The currency was devalued and foreign debt was defaulted on. This created a severe

to provinces/counties with the objective of winning local government support. Figure 2 shows a reduced form graph for property crimes and percentage of peronist votes, showing a negative relationship. It can be argued that there may be other reasons for observing such pattern between peronist votes and property crime other than through *PJH* assignment. For example, law enforcement may be of a lower quality in provinces where peronists have more votes. We argue that even if this is the case, there is no reason to expect that this may vary over time and so we can control for such effects through an appropriate set of county and provincial controls and fixed effects. As Auyero (2001) and other authors points out, peronist votes at the subnational level (counties are even provinces) are much more stable than votes for president. For example, even when peronist lost the national elections in 1999, they still won sub-national government elections for most counties with historical peronist presence. Table 2 shows that the percentage of peronist votes has a negative and statistically significant effect on crime, whereas this relationship does not hold for other crimes. If the quality of justice of law enforcement presents some systematic differences that could be explained by peronist votes, then the coefficient on other crimes may also be significant. The fact that this is not the case provides support to our argument for the use of peronist votes as instruments.

5.4 First stage and naive regressions

As mentioned before, our main identifying assumption is the fact that workfare was allocated according to political criteria and not to objective measures such as unemployed individuals in high poverty regions. This allows us to use political variables as instruments for the number of people on workfare. Moreover, in order for the instrumental variable strategies to be valid, we need to show that political variables are unrelated to crime except through workfare. The variable we use for political variables is the standardized percentage¹³ of peronist votes for congress and county representatives in the last election previous to the program was implemented.¹⁴

Then we run some naive regressions as specified in equation (2) below.

contraction in economic activity that worsened the already fragile economic conditions. As a result, unemployment and poverty spiked up.

¹³The estimations also hold with percentage of votes for major.

¹⁴Our results also hold if we specify our model using dummy variables for peronist major and peronist governor.

$$d_{it} = \alpha + T_{it}\beta + X_{it}\gamma + \mu_{it} \quad (2)$$

where d_{it} is the crime rate in county i at time t , T_{it} the per capita number of workfare plans, X_{it} are county and provincial controls and μ_{it} the disturbance term.

Here, we ignore the problem of endogeneity of workfare programs, which can be appreciated in Table 3. Here, we can see that for all specifications, the effect of workfare on crime (all crimes and property crimes) is positive and for most cases, statistically significant. In order to consistently estimate the effect of workfare on crime, as we mentioned before, we will use political variables as instruments for workfare. Workfare was used as a political token to gain peronist support. We can specify our model as:

$$d_{it} = \alpha + T_{it}\beta + X_{it}\gamma + \mu_{it} \quad (3)$$

and

$$T_{it} = \theta + P_{it}\pi + \eta_{it} \quad (4)$$

while equation (3) is the same than the one specified previously, we add equation (4) which states a relationship between per capita workfare T_{it} and a set of political variables P_{it} , which will be used as instruments. As a requisite for IV estimations to be valid we need (μ_{it}, η_{it}) and P_{it} to be uncorrelated. Also, we need T_{it} and P_{it} to be correlated, as initially suggested by the descriptive statistics. Table 4 shows that our instrument is significant and they have the signs indicated in Table 1. The F statistics for the first stage are all above 19. A higher share of peronist votes results in higher number of per capita workfare beneficiaries at the county level. It is worth mentioning that the coefficients associated with the percentage of peronist votes are stable and do not change when other controls are added to the regression. An increase in one standard deviation in peronist votes is associated with an increase in workfare plans of 15%.

5.5 IV Estimates

Results using the percentage of peronist votes as instrument can be seen in Table 5. As seen in the previous section, workfare allocation depended on different factors: it was concentrated in provinces where the governor was not alligned to the national government.¹⁵ We present several estimations and several specifications in order to check for robustness. We estimated equations (3) and (4) using two stages least squares (2sls) and limited information maximum likelihood (liml). Standard errors were clustered at the county level. We also bootstraped standard errors as suggested in Cameron et. al (2007). We add provintial and county controls, year dummies and provincial and regional fixed effects as well. Elasticities of property crimes with respect to workfare are -0.78. Also, we can observe that the effect on other crimes is not statistically significant.

The effect of per capita workfare plans on property crimes is negative and statistically significant. Such effect may result from several channels through which *PJH* operates to reduce crime. First of all, our results support the idea that property crime is used as a way to supplement lack of income. In adverse economic situations, where low income individuals perceive the difficulty of engaging in legal income generating activities, they may resort to property crimes. In this sense, the monetary benefit of the workfare program replaces income that would be obtained by committing crimes. Also, crime may be reduced due to the incapacitation effect resulting from fullfilling workfare requirements resulting from *PJH* program. We think this effect may not be very high, since only a small fraction of beneficiaries were compying with workfare requirements and such requirements were never fully enforced. A third effect may also result from the discouraging effect of *PJH* on labor supply. If this is the case, then property crime would have been higher, given that individuals have more free time to engage in criminal activity. Since the results we find have the opposite sign, we believe that this effect, if exist, is not predominant.¹⁶ Finally, *PJH* may have worked as a dynamic deterrence effect, since they may be afraid of losing the program benefits

¹⁵The interim president Eduardo Duhalde, who created PJH, was the Peronist candidate in 1999 elections. He lost to the "Alianza " government. In this sense, we use the % of peronist votes for president in 1999 as a proxy of the general acceptance the interim president in each county.

¹⁶Existing literature on PJH shows that it was granted to population out of the labor force more than to unemployed. Also, the country economic conditions in 2002 were bad, and employment opportunities were low.

if convicted.

5.6 Robustness checks

In order to check that the effect of PJH on crime is not driven by other underlying characteristics that were present before the program was implemented, we run a placebo regression generating a placebo treatment: number of per capital programs assigned in 2002 and used that to explain pre-program data on crime. As it can be appreciated in table 6, there is no effect.

Also, the fact that our IV estimates in the previous section do not show any effect on other crimes is consistent with the literature on crime, i.e. that crimes that are not financially motivated respond to other incentives and thus, we should not expect any effect on such crimes.

6 Conclusions

This paper studies the relationship between welfare programs and property crime. There are several channels to which crime can be affected by the introduction of welfare programs. If the welfare program has working requirements, then individuals' available time is reduced and so, *ceteris paribus*, we might expect a reduction in crime. On the other hand, if there are not working requirements, then the effect may be the opposite. Also, monetary benefits from welfare may reduce the need to supplement income with illegal activities. Also, such program may have a deterrence effect, since if convicted, individuals may lose their benefits. The overall effect is ambiguous and it is a relevant empirical question. However, it is very difficult to uncover a causal relationship between welfare programs and crime, because of common unobservable factors affecting both crime and the number of welfare recipients. It is often the case that areas that suffer from high unemployment have both higher crime rates and higher number of individuals on welfare.

We looked at a workfare program in Argentina. The program was introduced after the country suffered a severe economic crisis which caused the president to resign. The economy experienced a major contraction and unemployment spiked. As a result the new interim president introduced a workfare program which rapidly covered 2

million individuals. As we shown before, the number of program beneficiaries accross regions depended more on political factors than on objective criteria for allocation (unemployment, poverty, etc). In that sense, the program was used to gain provincial governors and county major's support. Using measures of political support as instruments for the number of plans, we found a negative effect of per capita workfare, instrumented by political variables, on property crimes. This finding supports the idea that one important reason for comitting property crime is lack of income. Also, granting subsidies that may be removed if the individual is caught and convicted committing a felony may have a deterrent effect on crime. Our results suggest that such effect should be taken into account when calculating welfare costs and benefit. Less crime also lessens the need for police and other resources, bringing also benefits to the community in general.

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