

# Economic Freedom and Recidivism: Evidence from US States

Joshua Hall · Kaitlyn Harger · Dean Stansel

Published online: 16 February 2015  
© International Atlantic Economic Society 2015

**Abstract** This paper provides an exploratory analysis into factors contributing to differences across states in recidivism rates. We provide the first such examination that incorporates differences in economic freedom. Using a panel data set from 1998 to 2010, we find that higher levels of economic freedom within a state are associated with lower recidivism rates within that state. A one percent increase in state economic freedom is associated with a 0.47 % decrease in parolee recidivism. The relationship is stronger and more statistically significant for labor market freedom, with a one percent increase in labor market freedom being associated with a 0.67 % decline in recidivism.

**Keywords** Recidivism · Institutions · Prison · Parole

**JEL Classification** D02 · K14 · K42 · Z13

## Introduction

In 2011, 6.98 million people in the United States were supervised by a federal, state, or local government correctional office jurisdiction via probation, parole, or incarceration (Glaze and Parks 2012). This amounts to government correctional supervision of some type for one in every 34 adults in the United States. Additionally, at year-end 2011, federal, state, and local correctional facilities in the United States housed 2.2 million people (Glaze and Parks 2012). Although this number was a slight decline from the

---

J. Hall (✉) · K. Harger  
College of Business and Economics, West Virginia University, 1601 University Ave, PO BOX 6025,  
Morgantown, WV 26506-6025, USA  
e-mail: joshua.c.hall@gmail.com

K. Harger  
e-mail: Kaitlyn.Harger@gmail.com

D. Stansel  
Lutgert College of Business, Florida Gulf Coast University, 10501 FGCU Blvd. South,  
Fort Myers, FL 33965, USA  
e-mail: dstansel@fgcu.edu

previous year, the US incarceration rate still overshadows the rest of the world (D'Amico and Williamson 2014).

Given this high rate of incarceration, US communities face the release of thousands of prisoners back into their communities each year. In 2011, the US released roughly 700,000 prisoners from federal and state correctional facilities combined (Glaze and Parks 2012). The level of rehabilitation achieved while in prison is thus an important concern for public safety as so many prisoners are released into American communities each year.

Despite high populations in facilities aimed at correction, it is unclear whether incarcerated individuals truly receive any correction while in prison as recidivism rates remain high. The Bureau of Justice Statistics (2002) found that 67.5 % of prisoners released in 15 states during 1994 recidivated within three years of release. A 2004 report on recidivism in Illinois similarly found that the three year recidivism rate of prisoners was 66 % on average (Olson et al. 2004). A 2007 report on recidivism rates in Alaska found that within three years of their 1999 release, 66 % of all offenders returned to incarceration at least once (Carns et al. 2007). Taken together, these studies suggest stability in the national recidivism rate over time. The large amount of individuals incarcerated in the United States coupled with stability in high recidivism rates over time point to an ongoing public safety issue. Research into which factors contribute to recidivism rates is thus important for decreasing the prison population and decreasing crime rates in US communities.

Although longitudinal stability exists in the national recidivism rate, cross-sectional differences across state-level recidivism rates remain. A Pew Center on the States (2011) report examining prisoners released in 2004 found that Minnesota had the highest three-year recidivism rate of 61.2 % and Oregon the lowest at 22.8 %. It is possible that some states' institutions provide better opportunities for ex-offenders than others and as a result recidivism rates are lower in some states than others. Studies that help to pinpoint which types of institutions contribute to lower recidivism rates improve efficiency in the penal system through promotion of the use of policies that effectively rehabilitate prisoners. Correspondingly, studies that identify which institutional structures contribute to higher recidivism rates provide important information on what may hinder the likelihood of rehabilitation into society post-release.

Despite the overwhelming size of the correctional system in the United States, the high recidivism rates associated with this system, and stark differences across states' recidivism rates, relatively little work has examined the factors related to differences in recidivism rates across states. Instead, much of the previous research on recidivism examines the impact of different institutional structures on recidivism rates of prisoners within a single state (Olson et al. 2004; Hjalmarsson 2009; Kuziemko 2013). Other work in this area analyzes institutional features of the federal jurisdiction in the United States (Chen and Shapiro 2007) as well as federal jurisdictions in both Italy (Drago et al. 2009, 2011) and France (Maurin and Ouss 2009). The current literature on recidivism rates focuses on single-jurisdiction analyses of specific policies and their relationship to inmate-level recidivism solely within that jurisdiction (Olson et al. 2004; Carns et al. 2007; Chen and Shapiro 2007; Drago et al. 2009; Hjalmarsson 2009; Maurin and Ouss 2009; and Kuziemko 2013). Departing from future research, our analysis is a first step in filling this gap within the literature by examining differences in recidivism rates across US states.

Using data from the Bureau of Justice Statistics' Annual Parole Survey as well as the *Economic Freedom of North America's* subnational measure of economic freedom to capture institutional quality, we construct a panel data set of all 50 US states from 1994 to 2010. Next, we examine the relationship between state-level institutional quality and the recidivism rate within each state. The results suggest a negative relationship between higher levels of economic freedom and state-level recidivism rates of parolees. This finding suggests that institutional differences across states may be contributing to differences in recidivism rates across states. In particular, states with more labor market freedom appear to have lower recidivism rates, presumably because parolees find it easier to find legitimate employment in states with fewer labor market barriers.

### Previous Findings on Recidivism

Economic research on the penal system and recidivism rates can be separated into four main categories. The first examines how differences in types of crime translate into different recidivism rates, the second focuses on how the deterrent effect of prison affects recidivism rates, the third analyzes how differences in incentive structures faced by prisoners translate into differences in recidivism rates, and the fourth examines institutional factors in the environments to which ex-offenders return that may impact the likelihood of recidivism.

#### Recidivism Rates by Type of Crime

Recidivism rates across the 15 US states in 1994 were highest for robbery (70.2 %), burglary (74.0 %), larceny (74.6 %), motor vehicle theft (78.8 %), possessors/sellers of stolen property (77.4 %), and possessors/sellers of illegal weapons (70.2 %) (Bureau of Justice Statistics 2002). All of these crimes are financially motivated and this may suggest that upon exit from prison ex-offenders may recidivate for financial reasons. This financial motivation for committing crimes may suggest that there are institutional issues facing ex-offenders in the communities into which they are released.

If it is true that ex-offenders recidivate for financial reasons, this highlights the importance of education related rehabilitative programs while in prison to improve the job prospects facing ex-offenders post-release. Many jurisdictions have begun using work-first programs for ex-offenders in an effort to reduce recidivism rates. Programs of this type focus on finding offenders work immediately after release, instead of focusing on job training, drug treatment, or finding housing (Husock 2012).

Recently, Newark, New Jersey received national attention for the use of a work-first program as a way to dramatically reduce recidivism within the city. Of the ex-offenders who have participated in this program since its inception, 60 % have found work (The Economist 2011). Additionally, of those that found work, only 10 % have recidivated. Similarly, Exodus, an organization in Harlem, New York, strives to provide recently released ex-offenders with internships and work-related experience after release from prison. Of the ex-offenders who opt into working with Exodus, only 3 % recidivate (The Economist 2011). This suggests that states with less labor market freedom might find it more difficult to integrate former prisoners into the workforce.

## Deterrent Effect

Following Becker (1968), several studies examine the relationship between the potential deterrent effect of a prison sentence and recidivism rates. Previous work has argued that harsh crime laws/sentencing or harsher prison conditions may be useful in that it may deter crime from occurring. For example, it is possible that potential crime may be deterred due to the harshness of the conditions within the prison system. Findings from these studies suggest that harsher prison conditions do not reduce recidivism rates and instead may increase the likelihood of recidivism (Chen and Shapiro 2007; Drago et al. 2011). Although harsher prison conditions may serve as a deterrent for individuals who have never been to prison, empirical evidence suggests these conditions do not deter ex-offenders from recidivating (Drago et al. 2011).

Additional research analyses the deterrent effect of an increased probability of receiving a prison sentence. Utilizing a discontinuity in Washington state sentencing laws for juveniles, Hjalmarsson (2009) presents evidence of a causal relationship between an increased probability of juvenile incarceration and a reduced likelihood of post-release recidivism. Using a similar approach, Drago et al. (2009) exploit the discontinuity in a unique sentencing law in Italy that allowed for a three year sentence reduction for all inmates who committed a crime prior to May 2, 2006. This sentence reduction came with the stipulation that if the ex-offender was reconvicted within five years of release the sentence reduction granted would have to be served in addition to any new sentence. This study shows how a direct link between post-release criminal behavior and future sentence length served as a deterrent for recidivism.

Instead of examining the direct deterrent effect of the prison system, Maurin and Ouss (2009) examine the impact of a policy which may encourage recidivism. They look at a natural experiment in France where the government mandated a collective sentence reduction for incarcerated individuals between one week and four months, depending on the residual sentence length. Their results suggest that this collective release policy increased recidivism rates in later years, possibly due to the lack of a direct connection between an individual's crime and their sentence.

Overall, these studies suggest that the deterrent effects of prison presented in theory by Becker (1968) may not empirically exist for individuals who have already spent time in prison. Although the threat of a prison sentence may deter non-crime committing citizens from committing crimes, the same cannot be said for ex-offenders and recidivism.

## Differences in Incentive Structures

Another section of the literature focuses on the incentive structures faced by individuals during incarceration. In prisons where early release via a parole board is not an option, individuals may have less of an incentive to rehabilitate themselves while incarcerated (Kuziemko 2013). However, when parole boards have discretionary power over release, prisoners are more likely to take measures offered by the correctional facility to prove that they have been rehabilitated and thus should be released (Kuziemko 2013). This has been presented and tested via Kuziemko (2013) for Georgia but has not been tested in a cross-state framework.

## Institutional Differences in Communities

Institutional issues within the communities into which ex-offenders are released may also be responsible for high recidivism rates. Olson et al. (2004) find that gang members are more likely to recidivate than their non-gang counterparts. Thus, areas with higher gang membership rates may have higher recidivism rates. They also find that gang members are more likely to recidivate due to their increased likelihood of returning to a criminal lifestyle post-release. It is possible that the relationship between gang membership and recidivism is related to the quality of formal institutions in place in the community in which the gang operates.

We build upon this last point by focusing on state-level policies consistent with market exchange. For example, states with fewer labor market restrictions might have lower recidivism rates because parolees find it easier to locate employment. More generally, however, states with less government involvement in the economic affairs of citizens might result in an environment where parolees find it easier to not engage in criminal activities.

## Data and Empirical Approach

Departing from previous research, the goal of our analysis is to examine the relationship between recidivism rates and formal institutions across the entire United States. There has yet to be a United States based cross-country analysis of the institutional factors that may be related to recidivism rates. This paper fills this gap and examines the relationship between recidivism rates and quality of formal institutions across states. Our hope is that by engaging in an exploratory analysis of the relationship between economic freedom and recidivism we will open up avenues for future research.

Data on state-level institutional quality comes from the *Economic Freedom of North America* (EFNA) report. This annual report provides a state-level score for the level of economic freedom present within a state based on three subcomponents: first, size of government, second, takings and discriminatory taxation, and third, labor market freedom (Stansel et al. 2014). This measure of institutions has been used in a large number of studies to help explain differences across states in factors such as income inequality (Ashby and Sobel 2008), housing prices (Campbell et al. 2008), service industry growth (Gohmann et al. 2008), entrepreneurship (Hall and Sobel 2008), equity prices (Lawson and Roychoudhury 2008), female labor force participation (Cebula and Alexander 2014), and income (Wiseman and Young 2013).

The EFNA presents two overall scores per state, a subnational score and an all-government score. The subnational score accounts for restrictions on economic freedom by state and local governments, whereas the all-government score encompasses restrictions on economic freedom by federal, state, and local governments (included to facilitate comparisons across subnational jurisdictions in different countries). The subnational score is the most appropriate measure for making comparisons across states within the same country. Since the goal of this paper is to analyze differences in institutions across states within the United States, the subnational score is used to measure institutional quality of each state, separate from the influence of the federal government. Additionally, prisoners released from federal correctional facilities are not

included in our analysis, so the all-government measure is inappropriate. Since labor market freedom is likely to be the mechanism through which recidivism rates may be affected, we run separate regressions using that individual component in addition to those using the overall index.

Data on parolee characteristics is taken from various issues of *Annual Parole Surveys* (APS). Each year the Bureau of Justice Statistics (BJS) (various years) surveys administrative data from each state on their parole population in that year. The APS, sent annually to each state, asks the state parole agency a survey of questions about their parole population that year. These surveys provide state-level information about the number of individuals supervised under parole each year. All non-institutional variables in the analysis are created using data from these surveys.

Within our analysis, the recidivism rate is defined as the percentage of the released prison population in a given year which exited parole to return to incarceration that year. The state-level recidivism rate used in our analysis is calculated using the number of individuals on parole per year that exited parole supervision because they were returned to incarceration. To calculate the number of parolees who left parole in a given year to serve a new prison sentence, we combine three questions from the APS. The first measures the number of parolees that left parole to return to incarceration for a new crime throughout the entire year. The second survey question measures the number of parolees throughout the year who returned to incarceration due to revocation of parole. The third measure counts the number of parolees returned to incarceration for reasons unknown to the parole supervisor in that state. The sum of these three measures is taken as the number of individuals in each state that returned to incarceration throughout a given year. This number of individuals returned to incarceration is then divided by the total number of prisoners released into the state throughout that year, to account for differences in prisoner population across states. Thus, the recidivism rate ( $RR$ ) is a short-term measure of the number of parolees in a state that returned to incarceration during that year, compared to the total number of prisoners released into the state that year.  $RR$  can be interpreted as the percentage of released prisoners each year that left parole to return to incarceration.

We also construct control variables by weighting them relative to the prison population at the time of measurement. Previous studies suggest that men are more likely than women to recidivate and these studies include controls for gender in their analysis (Carns et al. 2007; Hjalmarsson 2009; Kuziemko 2013). Specifically, the Bureau of Justice Statistics (2002) found that 68.4 % of male inmates in their sample returned to prison within three years, whereas only 57.6 % of females returned to prison within three years. Other studies examine samples of all-male inmates (Maurin and Ouss 2009). In order to control for the impact of gender on recidivism within the APS data, we construct a variable ( $MALE$ ), which measures the proportion of the parole population listed as male, annually for each state. The APS asks the state parole agency how many parolees under their supervision were male as of December 31st in each year of the survey. To control for larger parole populations in larger states, we divide the number of male parolees in each state on December 31st in each year by the total number of parolees under that state's supervision on December 31st in the same year.

Sentence length may also be related to recidivism. Previous research suggests that sentence length may have an impact on recidivism, although the direction of this impact is mixed. Drago et al. (2009) find a positive relationship between recidivism and

sentence length when sentence length is directly related to post-release behavior. Alternatively, Owens (2009) finds that longer sentences deter future crimes. The *MAXMORE* variable measures the percent of the parole population in a state that had a maximum sentence greater than one year, and measures the impact of incarceration length on recidivism rates.

We also control for the proportion of the parole population in the state that is supervised under a discretionary parole release (*DISCR\_REL*). Kuziemko (2013) finds that prisoners released under discretionary parole boards are less likely to recidivate given that they are required to demonstrate evidence of rehabilitation to a parole board in order to be released. The APS asks the state parole board, “Between January 1st and December 31st, how many adults entered parole by discretionary release from prison?” The number of adult parolees entered into parole via discretionary release is divided by the number of adults who entered parole that year to calculate *DISCR\_REL*.

Evidence also suggests that criminals committing financially motivated crimes are the most likely to recidivate upon release (Bureau of Justice Statistics 2002) and so a control variable for this is also constructed. This control variable, *MONEY*, is a measure of the percentage of parolees in a state whose serious offense was a property crime.

Regression analysis is used to explore the relationship between state-level recidivism rates and economic freedom. Due to the nature of our data and the construction of the variables used in our analysis, all variables, except for *EFNA*, are bounded between zero and one. We take the natural log of all variables constructed from the APS, in order to transform them into non-bounded variables. Given the independent and dependent variables are both natural logs, the parameter estimates can be interpreted as elasticities (Kennedy 2008). We also use the natural log of the *EFNA* so that interpretation as an elasticity is consistent with the other variables. Equation (1) presents the complete OLS specification used in our analysis when controls are included.

$$\ln RR_{it} = \beta_0 + \beta_1 \ln EFREE_{it} + \beta_2 Z_{it} + \varepsilon_{it} \quad (1)$$

$EFREE_{it}$  is the subnational economic freedom score,  $Z_{it}$  is a vector of control variables which includes the natural log of the following variables: *MALE*, *MAXMORE*, *DISCR\_REL*, and *MONEY*. We also run separate regressions using the labor market freedom component (*LMFREE*) instead of *EFREE*, with all other variables remaining the same as in Eq. (1).

There are numerous factors that could potentially affect the recidivism rate over time that we are unable to observe, such as improvements in policing technology or changes in what constitutes criminal behavior as in the case of marijuana legalization. To account for such unobserved factors we use period fixed effects. Equation (2) shows the same specification when period fixed effects are included.

$$\ln RR_{it} = \beta_0 + \beta_1 \ln EFREE_{it} + \beta_2 Z_{it} + \lambda_t + \varepsilon_{it} \quad (2)$$

$\lambda_t$  represents period fixed effects. Table 1 presents summary statistics, sources, and descriptions of all variables included in our analysis.

**Table 1** Descriptions, sources, and summary statistics for variables

| Variable         | Description  | Source       | Min  | Max  | Mean | Std. Dev. | Obs |
|------------------|--|--------------|------|------|------|-----------|-----|
| <i>RR</i>        | Parolees returned to prison/<br>Prisoners released | BJS APS      | 0    | 0.87 | 0.21 | 0.16      | 650 |
| <i>EFREE</i>     | Economic freedom                                   | Fraser Inst. | 4.43 | 8.30 | 6.70 | 0.72      | 650 |
| <i>LMFREE</i>    | Labor market freedom                               | Fraser Inst. | 5.11 | 8.34 | 6.74 | 0.63      | 650 |
| <i>MALE</i>      | % of parole pop. Male                              | BJS APS      | 0.11 | 0.97 | 0.88 | 0.06      | 630 |
| <i>MAXMORE</i>   | % of parole pop. sentence >1 year                  | BJS APS      | 0    | 1    | 0.93 | 0.18      | 486 |
| <i>DISCR_REL</i> | % of parole pop. under discretionary<br>release    | BJS APS      | 0    | 1    | 0.62 | 0.40      | 574 |
| <i>MONEY</i>     | % of parole pop. most serious<br>crime financial   | BJS APS      | 0    | 0.56 | 0.23 | 0.11      | 367 |

## Empirical Results and Discussion

Pooled OLS regressions with robust standard errors are presented in Table 2. Columns (3) and (4) present the preferred specification, while columns (1) and (2) present the baseline specification of the regression between recidivism rate and economic freedom. The results suggest that both economic freedom and its component labor market freedom are negatively related to the likelihood of recidivism, but those relationships are not statistically significant.

Table 3 presents results for OLS regressions using period fixed effects and robust standard errors in all specifications. We use period fixed effects to control for unobserved factors related to changes in the recidivism rate over time. The first two columns in Table 3 present the baseline regressions between economic freedom (and its component labor market freedom) and recidivism. Here again we see no statistically significant relationship. However, when we include all of our control variables (gender, sentence length, discretionary release, and financial motivation for crime) we see the expected negative coefficients for both overall economic freedom and labor market freedom, and they are statistically significant at conventional levels. Columns (3) and (4), show those results.

The estimate from column (3) suggests that a 1 % increase in overall economic freedom is associated with a 0.476 % decrease in the likelihood of recidivism of individuals on parole as compared to the entire set of released prisoners in that year. For example, if West Virginia, currently one of the least economically free states, became as economically free as Delaware, currently one of the most economically free states, that increase in economic freedom would be associated with a 17.3 % decrease in parolee recidivism rates, based on these results.

The results for labor market freedom are even stronger. Specifically, under this specification a 1 % increase in labor market freedom is associated with a 0.668 % decrease in the state-level recidivism rate of parolees. Again, if West Virginia were to become as economically free as Delaware, this would be associated with a 25.3 % decrease in recidivism in West Virginia according to our results.

**Table 2** Pooled OLS regressions of economic freedom on annual recidivism rate of parolees, 1998–2010

|                  | (1)                  | (2)                  | (3)                   | (4)                   |
|------------------|----------------------|----------------------|-----------------------|-----------------------|
| <i>EFREE</i>     | 0.152<br>(0.272)     |                      | -0.304<br>(0.328)     |                       |
| <i>LMFREE</i>    |                      | 0.130<br>(0.332)     |                       | -0.447<br>(0.479)     |
| <i>MALE</i>      |                      |                      | -0.494***<br>(0.105)  | -0.491***<br>(0.104)  |
| <i>MAXMORE</i>   |                      |                      | -0.0105<br>(0.0823)   | -0.0148<br>(0.0815)   |
| <i>DISCR_REL</i> |                      |                      | -0.113***<br>(0.0111) | -0.114***<br>(0.0114) |
| <i>MONEY</i>     |                      |                      | 0.0888<br>(0.0778)    | 0.0809<br>(0.0788)    |
| <i>CONSTANT</i>  | -1.947***<br>(0.515) | -1.908***<br>(0.627) | -1.181*<br>(0.614)    | -0.910<br>(0.881)     |
| Observations     | 575                  | 575                  | 256                   | 256                   |
| R-squared        | 0.000                | 0.000                | 0.127                 | 0.128                 |

Note: \* and \*\*\* denote significance at the 10 and 1 % level, respectively. Dependent variable is RR, which is the recidivism rate of parolees by state in each year. Robust standard errors are in parentheses. All variables appear in their natural log form in the regression

All four of our fully-specified models indicate a significant and negative relationship between discretionary release and recidivism rate. The coefficients are slightly higher in absolute value when we include labor market freedom instead of the overall measure. This relationship is consistent with the findings of Kuziemko (2013), who argues that the recidivism rate for prisoners released under discretionary parole is lower than the recidivism rate for prisoners who were not subject to discretionary parole release. We see the same thing for percent male, a significant negative relationship with recidivism that gets slightly stronger in the labor market freedom regressions. It is possible that states which have a large proportion of men released into society, use additional reentry services to offset the potential for increased recidivism. This finding, however, calls for further study.

The goal of our analysis was to provide an exploratory examination of the relationship between institutions and parolee recidivism rates for states in the United States. Using a panel data set from 1998 to 2010, our results suggest that a significant negative relationship exists between economic freedom by state and the state-level recidivism rate of parolees. That relationship appears to be driven by labor market freedom, although further research needs to be conducted given the limitations of our work. In particular, the nature of our measure of recidivism allows us to only focus on the short-term flow of individuals into prison from parole. Data limitations prevent us from looking at the effect of labor market freedom on the likelihood of specific individuals' recidivating. In addition, our results do not control for overall labor market conditions. If labor market freedom is correlated with other labor market conditions that increase

**Table 3** Period fixed effects regressions of economic freedom on annual recidivism rate of parolees, 1998–2010

|                  | (1)                  | (2)                  | (3)                    | (4)                    |
|------------------|----------------------|----------------------|------------------------|------------------------|
| <i>EFREE</i>     | 0.0698<br>(0.234)    |                      | -0.476*<br>(0.239)     |                        |
| <i>LMFREE</i>    |                      | 0.185<br>(0.184)     |                        | -0.668**<br>(0.238)    |
| <i>MALE</i>      |                      |                      | -0.500***<br>(0.0748)  | -0.491***<br>(0.0641)  |
| <i>MAXMORE</i>   |                      |                      | -0.00227<br>(0.0627)   | -0.00755<br>(0.0592)   |
| <i>DISCR_REL</i> |                      |                      | -0.117***<br>(0.00453) | -0.118***<br>(0.00450) |
| <i>MONEY</i>     |                      |                      | 0.0668<br>(0.0456)     | 0.0551<br>(0.0441)     |
| <i>CONSTANT</i>  | -1.792***<br>(0.443) | -2.013***<br>(0.350) | -0.896*<br>(0.480)     | -0.533<br>(0.491)      |
| Observations     | 575                  | 575                  | 256                    | 256                    |
| R-squared        | 0.000                | 0.000                | 0.134                  | 0.135                  |
| Number of years  | 13                   | 13                   | 9                      | 9                      |

Note: \*, \*\*, and \*\*\* denote, significance at the 10, 5, and 1 % levels, respectively. Dependent variable is RR, which is the recidivism rate of parolees by state in each year. Robust standard errors are in parentheses. All variables appear in their natural log form in the regression

the likelihood of returning to prison from parole than any policy inference from our results would be inappropriate.

For the moment, however, these results provide the first evidence that differences in recidivism rates across states may be due to differences in state-level institutions such as labor market freedom. If found to be robust in future studies, the implications of our findings for policy are straightforward if the goal is to reduce recidivism. More labor market restrictions lead to an increase in the state-level recidivism rate increase. In particular, it is likely that the labor market restrictions measured in the EFNA such as minimum wage laws, reduce the ability of released offenders to make themselves attractive to potential employers.

**Acknowledgments** The authors would like to thank James Barth, Richard Cebula, and David Sorenson for their helpful comments at the 2014 meetings of the International Atlantic Economic Society in Savannah, GA.

## References

- Ashby, N., & Sobel, R. (2008). Income inequality and economic freedom in US states. *Public Choice*, 134(3–4), 329–346.
- Becker, G. (1968). Crime and punishment: an economic approach. *Journal of Political Economy*, 76(2), 169–217.

- Bureau of Justice Statistics. (2002). *Recidivism of prisoners released in 1994*. Washington: US Department of Justice.
- Bureau of Justice Statistics. (Various years). *Annual parole surveys*. Washington: US Department of Justice.
- Campbell, N., Heriot, K., & Jauregui, A. (2008). Housing prices and economic freedom. *Journal of Private Enterprise*, 23(2), 1–17.
- Carns, T., McKelvie, S., Cohn, L., & Martin, S. (2007). *Criminal recidivism in Alaska*. Anchorage: Alaska Judicial Council.
- Cebula, R., & Alexander, G. (2014). An exploratory empirical note on the impact of labour market freedom on the female labour force participation rate in the US. *Applied Economics Letters*, in press.
- Chen, K., & Shapiro, J. (2007). Do harsher prison conditions reduce recidivism? A discontinuity-based approach. *American Law and Economics Review*, 9(1), 1–29.
- D'Amico, D., & Williamson, C. (2014). Do legal origins affect cross-country incarceration rates? *Journal of Comparative Economics*, in press.
- Drago, F., Galbiati, R., & Vertova, P. (2009). The deterrent effects of prison: evidence from a natural experiment. *Journal of Political Economy*, 117(2), 257–280.
- Drago, F., Galbiati, R., & Vertova, P. (2011). Prison conditions and recidivism. *American Law and Economics Review*, 13(1), 103–130.
- Glaze, L., & Parks, E. (2012). *Correctional populations in the United States, 2011*. Washington: Bureau of Justice Statistics.
- Gohmann, S., Hobbs, B., & McCrickard, M. (2008). Economic freedom and service industry growth in the United States. *Entrepreneurship: Theory and Practice*, 32(5), 855–874.
- Hall, J., & Sobel, R. (2008). Institutions, entrepreneurship and regional differences in economic growth. *Southern Journal of Entrepreneurship*, 1(1), 70–96.
- Hjalmarsson, R. (2009). Juvenile jails: a path to the straight and narrow or to hardened criminality? *Journal of Law and Economics*, 52(4), 779–809.
- Husock, H. (2012). From prison to a paycheck. *Wall Street Journal*.
- Kennedy, P. (2008). *A guide to econometrics*. Cambridge: Wiley-Blackwell.
- Kuziemko, I. (2013). How should inmates be released from prison? An assessment of parole versus fixed-sentence regimes. *Quarterly Journal of Economics*, 128(1), 371–424.
- Lawson, R., & Roychoudhury, S. (2008). Economic freedom and equity prices among US states. *Credit and Financial Management Review*, 14(4), 25–35.
- Maurin, E., & Ouss, A. (2009). Sentence reductions and recidivism: lessons from the Bastille Day quasi experiment. IZA Discussion Paper 3990.
- Olson, D., Dooley, B., & Kane, C. (2004). The relationship between gang membership and inmate recidivism. *Research Bulletin*, 2(12), 1–12.
- Owens, E. (2009). More time, less crime? Estimating the incapacitative effect of sentence enhancements. *Journal of Law and Economics*, 52(3), 551–579.
- Pew Center on the States. (2011). *State of recidivism: The revolving door of America's prisons*. Washington: Pew Charitable Trusts.
- Stansel, D., Torra, J., & McMahon, F. (2014). *Economic freedom of North America 2014*. Vancouver: Fraser Institute.
- The Economist. (2011). Tackling recidivism: they all come home. *The Economist*, 20 April.
- Wiseman, T., & Young, A. (2013). Economic freedom, entrepreneurship and income levels: some US state-level empirics. *American Journal of Entrepreneurship*, 6(1), 104–124.