



The Price We Pay: Economic Costs of Barriers to Employment for Former Prisoners and People Convicted of Felonies

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Executive Summary

Despite modest declines in recent years, the large and decades-long blossoming of the prison population ensure that it will take many years before the United States sees a corresponding decrease in the number of former prisoners. Using data from the Bureau of Justice Statistics (BJS), this report estimates that there were between 14 and 15.8 million working-age people with felony convictions in 2014, of whom between 6.1 and 6.9 million were former prisoners.¹

Prior research has shown the adverse impact that time in prison or a felony conviction can have on a person's employment prospects. In addition to the stigma attached to a criminal record, these impacts can include the erosion of basic job skills, disruption of formal education, and the loss of social networks that can improve job-finding prospects. Those with felony convictions also face legal restrictions that lock them out of many government jobs and licensed professions.

Assuming a mid-range 12 percentage-point employment penalty for this population, this report finds that there was a 0.9 to 1.0 percentage-point reduction in the overall employment rate in 2014, equivalent to the loss of 1.7 to 1.9 million workers. In terms of the cost to the economy as a whole, this suggests a loss of about \$78 to \$87 billion in annual GDP.

Some highlights of this study include:

- Between 6.0 and 6.7 percent of the male working-age population were former prisoners, while between 13.6 and 15.3 percent were people with felony convictions.
- Employment effects were larger for men than women, with a 1.6 to 1.8 percentage-point decline in the employment rate of men and a 0.12 to 0.14 decline for women.
- Among men, those with less than a high school degree experienced much larger employment rate declines than their college-educated peers, with a drop of 7.3 to 8.2 percentage points in the employment rates of those without a high school degree and a decline of 0.4 to 0.5 percentage points for those with college experience.
- Black men suffered a 4.7 to 5.4 percentage-point reduction in their employment rate, while the equivalent for Latino men was between 1.4 and 1.6 percentage points, and for white men it was 1.1 to 1.3 percentage points.

This paper updates earlier CEPR research that also examined the impact of former prisoners and those with felony convictions on the economy.²

1 The working-age population refers to adults between the ages of 18 and 64.

2 Schmitt and Warner (2010).

Introduction

The number of prisoners in the United States has grown dramatically over the past 40 years. In 1980, there were 503,600 people in prisons or jails at the federal, state and local level.³ By the end of 2014, this number had ballooned to 2,224,400, and an additional 4,708,100 people were on parole or probation at that time.⁴ These figures translate to about 1 in 110 adults behind bars and about 1 in 52 adults on parole or probation. Despite small decreases in the share of people in prison or jail in recent years, the United States still has one of the highest incarceration rates in the world, second only to Seychelles.⁵

While this growth in the overall number of prisoners, parolees, and probationers has been documented over time, estimates of the total number of former prisoners and people with felony convictions have been rare. This report builds off of prior CEPR research examining the population of former prisoners and people with felony convictions. It estimates both the size (see **Figure 1**) and impact of this population on the U.S. labor market.

Time in prison, jail, or even a felony conviction can have a tremendous impact on the lives of former prisoners and people with felony convictions. A criminal record can negatively affect prospects for employment, education, public assistance, and even civic participation by making many people with felony convictions ineligible to vote.⁶ Often it is not just the former prisoner or person with felony convictions impacted; the well-being of their families is often threatened.⁷ This analysis focuses on the negative effect on the employment prospects of former prisoners and people with felony convictions and the implications for the labor market.⁸

The calculations in this paper indicate that in 2014, the year for which there is the latest available data, the impediments to employment faced by former prisoners and people with felony convictions

3 Bureau of Justice Statistics (2015a).

4 Data on prison and jail inmates for 2014 from Kaeble, Glaze, Tsoutis, and Minton (2015). Prisons are state and federal facilities, usually run by the government, but sometimes on a contract basis by private companies, that usually hold convicted criminals with sentences of a year or longer; jails are local facilities, usually run by local governments, but sometimes by contractors, that usually hold convicted criminals with sentences of less than one year or unconvicted individuals awaiting trial. Data for probation and parole for 2014 from Kaeble, Maruschak, and Bonczar (2015). “Probation is a court-ordered period of correctional supervision in the community generally as an alternative to incarceration. In some cases probation can be a combined sentence of incarceration followed by a period of community supervision. Parole is a period of conditional supervised release in the community following a prison term...” (p. 2).

5 Walmsley, Roy (2016).

6 Gottschalk (2015).

7 Vallas et al. (2015).

8 The number of people with felony convictions is larger than the number of former prisoners because only about 44 percent of felons are sentenced to prison.

meant a loss of about 1.7 to 1.9 million workers. This was equal to a roughly 0.9 to 1.0 percentage-point reduction in the overall employment rate, and a loss of between \$78 and \$87 billion in GDP.

The uptick in the U.S. incarceration rate and the number of former prisoners and people with felony convictions in the U.S. are a reflection not of a crime rate spiraling out of control, but of significant and often unnecessary changes in the criminal justice system. For example, both violent and property crime rates are much lower today than they were in the 1980s when the incarceration rate began to increase rapidly.⁹ Rather, much of the increase in incarceration is due to strict and often harsh sentencing probabilities and sentence lengths.¹⁰ This explosion in the number of people in U.S. prisons and jails has rightly been characterized by Gottschalk as the metastasizing carceral state.¹¹

In recent years, there has been broad acknowledgement of the need for reform of the criminal justice system, due in part to the ways in which it has directly contributed to the increase in mass incarceration and the collateral costs that have resulted. Calls to address the severity of policies such as the War on Drugs and the Violent Crime Control and Law Enforcement Act of 1994 have become louder and more critical, from the vocal protests of Black Lives Matter and others to executive orders and legislation from President Obama as well as both Democrats and Republicans in Congress.¹² Estimates of the population of former prisoners and people with felony convictions like the one offered here can play a role in this discussion by demonstrating the negative impact of aggressive and often ineffective incarceration policies on the overall economy.

⁹ For violent and property crime rates, see the Federal Bureau of Investigation's Uniform Crime Reporting Program, <https://www.fbi.gov/about-us/cjis/ucr>, Federal Bureau of Investigation Uniform Crime Reporting Program (2016).

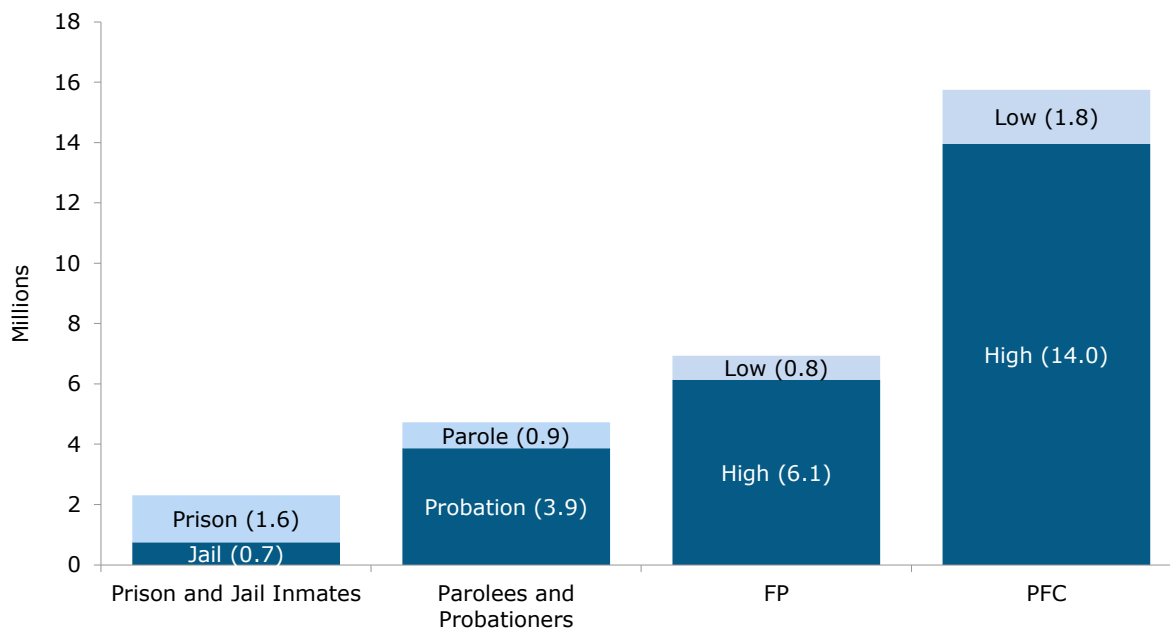
¹⁰ See Schmitt, Warner, and Gupta (2010), pp. 7–9.

¹¹ Gottschalk (2015).

¹² Harte (2016).

FIGURE 1

Estimates of Correctional Populations, 2014



Source and notes: Authors' analysis of BJS data. High and low estimates for former prisoners (FP) and people with felony convictions (PFC) vary according to assumptions about recidivism.

Estimating the Number of Former Prisoners and People with Felony Convictions

There are no publicly available data on the exact size or composition of the population of former prisoners and people with felony convictions. In lieu of that, this paper provides an indirect estimate of the former prisoners population, and uses it to estimate the size and composition of the population of people with felony convictions.

Table 1 displays estimates of the number of former prisoners and people with felony convictions in 2014. These estimates are based on an analysis of Bureau of Justice Statistics data that count the number of prisoners released each year from 1968 to 2014. Assuming that the age and gender distributions of released prisoners are the same as the overall prison population, this report “tracks” each yearly cohort of released prisoners over time. As it is only concerned with the working-age population (ages 18 to 64), it allows former prisoners to age out once they reach age 65. Then, age-group-specific return-to-prison recidivism rates are applied to isolate the former prisoners who do

not return to prison.¹³ Here, there is use of both a low and a high measure of the recidivism rate to account for returns that occur after three years.

Next, an estimate of age-specific death rates are applied, adjusting up accordingly, to account for the high-risk population of this study.¹⁴ The first two columns of Table 1 imply that the former prisoner population in the U.S. in 2014 was between 6.1 million (using a high recidivism rate) and 6.9 million (using a low recidivism rate). See the **Appendix** for further details on this estimation technique.

TABLE 1
Estimated Number of FP and PFC, 2014
 (thousands)

FP Release data Recidivism		PFC Release data Recidivism	
Low	High	Low	High
6,931	6,138	15,752	13,950

Source and notes: Authors' analysis of BJS data, 1968–2014, see text for details. Number of people with felony convictions population estimated from FP, assuming: 90 percent of prisoners are state prisoners, 10 percent are federal prisoners, 42 percent of felons convicted in state courts are sentenced to prison, 62 percent of felons convicted in federal courts are sentenced to prison. Sample is restricted to the working-age population (ages 18–64). FP refers to former prisoners. PFC refers to people with felony convictions.

In the past, researchers have attempted to estimate the former prisoner population. This paper uses the same methods of Schmitt and Warner (2010). Their report focused on the population of former prisoners and people with felony convictions in 2008, and their results showed that there were between 5.4 and 6.1 million former prisoners of working age in 2008. Forecasts made by Bonczar (2003) imply that there would be about 5.7 million former prisoners in 2008 and 6.2 million former prisoners in 2010. Extending the methods from this report back to 2010, there were approximately between 5.6 and 6.3 million former prisoners in 2010.¹⁵ To the best of the authors' knowledge, there have not been any attempts to estimate the size or characteristics of the former prisoners population since 2010. However, the methods used in this paper are the same as those used by Schmitt and Warner (2010), which had results that were broadly consistent with the other estimates mentioned.

The final two columns of Table 1 show estimates of the number of people with felony convictions. Again, there are no direct estimates of this population, but this report uses administrative data on the percent of felons sentenced to prison, in addition to the estimates of the former prisoner

13 About 50 percent of prisoners return to prison within 3 years.

14 Mortality rates for 2014 have yet to be released, so data from 2013 is used (CDC 2016).

15 Uggen, Manza, and Thompson (2006) estimated that there were about 4.0 million former prisoners in 2004. Using the same methods, Shannon et al. (2011) estimated that there were 5.2 million former prisoners in 2010. These estimates only include those who are no longer under correctional supervision. Estimates include all former prisoners, including those who are out of prison but still under correctional supervision (probation or parole).

population presented in this paper to arrive at estimates of the number of people with felony convictions. About 44 percent of felons are sentenced to prison. The approach used in this paper estimates that there were between 14.0 million and 15.8 million people with felony convictions in 2014. In their earlier report using the same methods, Schmitt and Warner (2010) estimated that there were between 12.3 million and 13.9 million people with felony convictions in 2008.

In addition to estimates of the number of former prisoners and people with felony convictions, another goal of this paper is to determine their demographic characteristics. To estimate these characteristics, this report first uses the demographic characteristics of current prisoners for selected years and applies these estimates to the population of former prisoners and people with felony convictions. **Table 2** shows various characteristics of the prisoner population for selected years from 1960 to 2014. For all years, the male prisoner population greatly outnumbered the female prisoner population, with men making up at least 93 percent of the population in all years displayed. In 2014, men made up 93.0 percent of the prison population, and this percentage has remained mostly steady since 2000.

Education level, race, and age breakdowns are also displayed for the male prison population. Male prisoners are considerably less educated than the overall male working-age population, with over 85 percent having a high school degree or less. In 2014, about 43 percent of the overall working-age male population had a high school degree or less.¹⁶ During the same year, 97.4 percent of male prisoners were of working age, and 31.9 percent were between the ages of 25 and 34. Also in 2014 36.9 percent of male prisoners were Black, 32.3 percent were white, and 22.0 percent were Latino.

TABLE 2
Estimated Prisoner Demographics, 1960–2014

¹⁶ Authors' analysis of 2014 Current Population Survey Outgoing Rotation Group (CPS ORG) data.

(percent)	1960	c. 1980	c. 2000	c. 2008	c.2014
Female	3.8	4.0	6.7	6.8	7.0
Male	96.2	96.0	93.3	93.2	93.0
Men only					
<i>Less than high school</i>	85.5	51.0	39.6	36.6	36.6
<i>High school</i>	10.6	35.0	49.3	52.0	52.0
<i>Any college</i>	3.9	14.0	11.1	11.4	11.4
<i>White</i>	62.3	42.9	35.3	33.3	32.3
<i>Black</i>	36.1	42.5	46.3	39.2	36.9
<i>Latino</i>	–	12.3	16.7	20.6	22.0
<i>Other</i>	1.6	2.2	1.7	6.9	8.8
<i>18–19</i>	6.3	4.9	2.7	1.7	1.0
<i>20–24</i>	19.7	22.7	16.1	14.5	11.4
<i>25–29</i>	18.2	19.7	18.8	17.2	15.4
<i>30–34</i>	16.2	15.6	18.9	16.6	16.5
<i>35–39</i>	12.7	12.9	17.2	15.8	14.2
<i>40–44</i>	8.6	9.6	12.1	14.1	12.2
<i>45–49</i>	6.2	5.8	6.7	9.5	10.4
<i>50–54</i>	4.2	3.4	3.7	5.3	8.5
<i>55–59</i>	2.8	1.9	1.8	2.7	5.2
<i>60–64</i>	1.4	1.0	0.9	1.3	2.7
<i>18–64</i>	96.4	97.6	98.9	98.7	97.4

Source and notes: In 1960, Latino was not treated as a separate category; all 1960 data from Tables 4 and 25 of U.S. Bureau of the Census (1961); for 1980, race is for jail and prison inmates (Ewert, Sykes, and Pettit Table 3, 2014); 1980 gender is from BJS (1982); all education data is for state prisoners only, federal prisoners (10 percent of all prisoners) are slightly more educated; 1980 education is for 1979 (Pettit and Western, Table 2, 2004); 2000 education is for 1997 (Harlow, Table 6, 2003); 2008 and 2014 education is for 2004 (Glaze and Maruschak, 2008, Appendix Table 16.); 1980 age groups interpolated from 1970 and 1991 data (U.S. Bureau of the Census, 1972 and Gilliard and Beck, 1998); remaining data for 2000 from Harrison and Beck (2001), with age groups 45–49 and 50–54 estimated from the 45–54 age group, age groups 55–59 and 60–64 estimated from the 55+ age group, based on proportions from closest year available (2007, from West and Sabol, 2008); remaining data for 2008 from Sabol, West, and Cooper (2009); remaining data for 2014 from Carson (2015).

Using the data from Table 2 on the prisoner population, estimates of the demographic characteristics of the entire population of former prisoners and people with felony convictions were created, adjusting for racial differences in recidivism rates and imprisonment rates conditional on felony conviction.¹⁷ **Table 3** displays these estimates.¹⁸ According to this data, in 2014 between 448,000 and 506,000 former prisoners were women, and between 1.0 and 1.2 million people with felony convictions were women. Between 5.7 and 6.4 million former prisoners were men, and between 12.9 and 14.6 million people with felony convictions were men. Among male former prisoners, between 2.6 and 2.9 million had less than a high school degree.

¹⁷ For a more detailed explanation, see Schmitt and Warner (2010), p. 7.

¹⁸ Given data constraints, estimates for race and education categories have a higher degree of uncertainty than estimates of the overall population of former prisoners and people with felony convictions and the male population of former prisoners and people with felony convictions, and should be viewed as broadly suggestive and not exact estimates.

There were notable differences in the racial composition of the population of male former prisoners and people with felony convictions. There were more Blacks than whites in the former prisoners population, but there were over 1 million more whites than Blacks in the population of people with felony convictions. This is the result of disparate sentencing rates between the two races. About 49 percent of Black felons are sentenced to prison, while only about 38 percent of white felons are sentenced to prison.¹⁹ In 2014, there were approximately between 2.1 and 2.4 million white male former prisoners and between 5.6 and 6.4 million white males with felony convictions. During the same year, there were between 2.2 and 2.5 million Black male former prisoners, and between 4.5 and 5.1 million Black males with felony convictions in the United States.

TABLE 3
Estimated Number of FP and PFC, by Education and Race or Ethnicity, 2014
 (thousands)

	FP Release data Recidivism		PWC Release data Recidivism	
	Low	High	Low	High
All	6,931	6,138	15,752	13,950
<i>Female</i>	506	448	1,150	1,018
Male	6,425	5,690	14,602	12,932
<i>Less than high school</i>	2,928	2,593	6,654	5,893
<i>High school</i>	2,556	2,264	5,810	5,145
<i>Any college</i>	941	833	2,138	1,894
<i>White</i>	2,424	2,147	6,378	5,649
<i>Black</i>	2,510	2,223	5,123	4,537
<i>Latino</i>	1,083	959	2,210	1,957

Source and notes: Authors' analysis, using data in Tables 1 and 2. Race and ethnicity categories exclude the "other" category in Table 2. Sample restricted to the working-age population (ages 18–64). FP refers to former prisoners. PFC refers to people with felony convictions.

The Effects of Imprisonment and Felony Conviction on Subsequent Employment

A large body of evidence demonstrates that prison time and felony convictions can have a lasting and profound effect on future prospects for employment. In addition to the stigma attached to a criminal record, these impacts include the erosion of basic job skills, disruption of formal education, loss of networks that can improve job-finding prospects, or deterioration of "people skills." Schmitt and Warner's review of longitudinal surveys, employer surveys, audit studies, aggregated geographic

¹⁹ BJS "State Court Sentencing of Convicted Felons" for 1992, 1994, 1996, 1998, 2000, 2002, 2004, and 2006.

data, and administrative data suggests that time behind bars can have a significant effect on the employment of those with prison experience or felony convictions.²⁰ Similarly, a recent review of the literature by Travis, Western and Redburn (2014) discussed the potential supply-side effects and added that “repeated encounters with rejection may lead to cynicism and withdrawal from formal labor market activity.”²¹ And while much of the literature on the effects of incarceration focuses on men, Decker, Spohn, Ortiz and Hedberg (2014) find in their study that incarceration has a negative impact on employment for women as well.²² These hurdles to employment can create an unfortunate cycle as Berg and Huebner (2011) note that post-incarceration employment significantly lowers the chances of recidivism.²³

Assessment of Employment Effects

The employment effects of incarceration or a felony conviction vary based on the research techniques used, the population researched, and the metrics that describe the employment impact. For the most part, the research shows a moderate to large impact on the employment levels of former prisoners and people with felony convictions. However, this report is concerned with an estimate of the impact of the population of former prisoners and people with felony convictions on the employment levels of all working-age adults, which is somewhat outside the scope of much of the research on incarceration and employment. Longitudinal surveys of individuals capture much of the data necessary for the analysis in this paper and typically yield moderate to large effects on employment levels. Employer surveys and audit studies also show a large impact on employment levels but are less useful for this present analysis. Aggregate state-level data, though less-directly applicable, show small to moderate effects. Administrative studies, while more in line methodologically with longitudinal studies, have technical difficulties and produce results that are inconsistent with other available data.

To better estimate the impact on employment levels while considering these methodological differences, this paper uses the three separate estimates employed by Schmitt and Warner (2010). The estimates examine low-, medium-, and high-effects scenarios to develop estimates of the employment effects of incarceration. Like Schmitt and Warner:

“In the low-effects scenario, we assume that ex-prisoners or ex-felons pay an employment penalty of five percentage points (roughly consistent with the largest effects estimated using administrative data

20 For a thorough examination of research related to the barriers faced by former prisoners and people with felony convictions through 2010 see Schmitt and Warner (2010), p. 8–12.

21 Travis, Western, and Redburn (2014), p. 239.

22 Decker, Spohn, Ortiz, Hedberg (2014).

23 Berg and Huebner (2011), p. 397.

and the lower range of effects estimated using the aggregate data and survey data). In the medium-effects scenario, we assume that the employment penalty faced by ex-prisoners and ex-felons is 12 percentage points, which is consistent with the bulk of the survey-based studies. In the high-effects scenario, we assume that the employment penalty is 20 percentage points, which is consistent with the largest effects estimated in the survey-based studies, as well as, arguably, the findings of the employer surveys and audit studies.”²⁴

Estimating the Impact of Former Prisoners and People with Felony Convictions on Total Employment and Output

Here, this report estimates the effect of the population of former prisoners and people with felony convictions on total employment and output. To do so, this report uses the estimates of the population of former prisoners and people with felony convictions and the outside estimates of the employment penalty faced by those with prison experience or a felony conviction from the previous two sections of this paper.

First, the size and demographic characteristics of the population of former prisoners and people with felony convictions from Table 3 are compared to the overall civilian, non-institutional working-age population.²⁵ **Table 4** displays estimates of the population of former prisoners and people with felony convictions as a share of the total working-age population in 2014. Overall, former prisoners were between 3.2 and 3.6 percent of the non-institutional working-age population. People with felony convictions were between 7.2 and 8.1 percent. As with those currently behind bars, former prisoners and people with felony convictions are much more likely to be men than women. In 2014, an estimated 6.0 to 6.7 percent of the working-age male population were former prisoners, and between 13.6 and 15.3 percent were people with felony convictions. On the other hand, between 0.45 and 0.51 percent of working-age women were former prisoners, and between 1.0 and 1.2 percent were people with felony convictions.

There were also notable differences by education level and race, although these estimates are less precise than those above. Between 26.6 and 30.1 percent of men with less than a high school degree were former prisoners, and between 60.5 and 68.3 percent were people with felony convictions. By

²⁴ Schmitt and Warner (2010), p. 12.

²⁵ Total population ages 18–64 from the 2014 Current Population Survey Outgoing Rotation Group (CPS ORG).

contrast, only between 1.5 and 1.7 percent of men with any college experience were former prisoners and between 3.5 and 3.9 percent were people with felony convictions. Black men were more likely than their white or Latino counterparts to be former prisoners or people with felony convictions. Between 19.4 and 21.9 percent of Black men were former prisoners, and between 39.5 and 44.6 percent were people with felony convictions.

TABLE 4
Estimated Population of FP and PFC, 2014
 (percent)

	FP Release data Recidivism		PFC Release data Recidivism	
	Low	High	Low	High
All	3.6	3.2	8.1	7.2
<i>Female</i>	0.5	0.5	1.2	1.0
Male	6.7	6.0	15.3	13.6
<i>Less than high school</i>	30.1	26.6	68.3	60.5
<i>High school</i>	8.2	7.3	18.7	16.5
<i>Any college</i>	1.7	1.5	3.9	3.5
<i>White</i>	4.0	3.6	10.6	9.4
<i>Black</i>	21.9	19.4	44.6	39.5
<i>Latino</i>	6.5	5.7	13.2	11.7

Source and notes: Authors' analysis of Table 3 and Current Population Survey data for population. Sample restricted to the working-age population (ages 18–64). FP refers to former prisoners. PFC refers to people with felony convictions.

The calculations in Table 4 are then used to determine the reduction in the overall employment rate that occurs as a result of the employment penalty for former prisoners and people with felony convictions. **Table 5** shows the results of this exercise for men. Three separate sets of measures are displayed. The first assumes a low, 5 percentage-point employment penalty compared to a similar worker with no prison experience or felony conviction. The second set of measures assumes a medium, 12 percentage-point employment penalty, and the last set assumes a high, 20 percentage-point employment penalty.

Assuming a low employment penalty of 5 percentage points, the population of former prisoners and people with felony convictions lowered the employment rate of men by between 0.3 and 0.8 percentage points in 2014. Assuming a medium, 12 percentage-point employment penalty, the population of former prisoners and people with felony convictions lowered the employment rate of men by between 0.7 and 1.8 percentage points. With a high employment penalty of 20 percentage points, this population lowered the employment rate of men by between 1.2 and 3.1 percentage points.

TABLE 5**Estimated Reduction in Employment-to-Population Rate, All Males 2014**

(percent)

	FP Release data Recidivism		PFC Release data Recidivism	
	Low	High	Low	High
(a) Assuming 5-percentage-point employment penalty for FP and PFC	0.3	0.3	0.8	0.7
(b) Assuming 12-percentage-point employment penalty for FP and PFC	0.8	0.7	1.8	1.6
(c) Assuming 20-percentage-point employment penalty for FP and PFC	1.3	1.2	3.1	2.7

Source and notes: Authors' analysis of Table 4. Sample restricted to the working-age population (ages 18–64). FP refers to former prisoners. PFC refers to people with felony convictions.

Table 6 displays the estimated decline in overall employment rates in 2014, with various demographic breakdowns. These estimates assume a medium, 12 percentage-point employment penalty for former prisoners and people with felony convictions. They show that the population of former prisoners and people with felony convictions reduced the overall employment of the working-age population by between 0.4 and 1.0 percentage points. The impact was particularly large for Black men and men with less than a high school degree. The population of former prisoners and people with felony convictions lowered the employment rates of Black men by between 2.3 and 5.4 percentage points. This population also lowered the employment rates of men with less than a high school degree by between 3.2 and 8.2 percentage points.

TABLE 6**Estimated Decline in Employment Rates in 2014**

(percentage points; assuming 12 percentage-point Employment Penalty)

FP Release data	PFC Release data
--------------------	---------------------

	Recidivism		Recidivism	
	Low	High	Low	High
All	0.4	0.4	1.0	0.9
<i>Female</i>	0.1	0.1	0.1	0.1
Male	0.8	0.7	1.8	1.6
<i>Less than high school</i>	3.6	3.2	8.2	7.3
<i>High school</i>	1.0	0.9	2.2	2.0
<i>Any college</i>	0.2	0.2	0.5	0.4
<i>White</i>	0.5	0.4	1.3	1.1
<i>Black</i>	2.6	2.3	5.4	4.7
<i>Latino</i>	0.8	0.7	1.6	1.4

Source and notes: Authors' analysis of Tables 4 and 5. Sample restricted to the working-age population (ages 18–64). FP refers to former prisoners. PFC refers to people with felony convictions.

The results presented in this paper show how contact with the criminal justice system in the form of a felony conviction or imprisonment can affect the future employment prospects of former prisoners and people with felony convictions. In addition to the likely large reductions in personal earnings as a result of these employment penalties, the economy as a whole suffers from a reduction in output. More specifically, this report estimates that the population of former prisoners and people with felony convictions cost the U.S. about 0.45 to 0.5 percentage points of GDP in 2014, or about \$78.1 to \$86.7 billion.²⁶

Conclusion

This paper examines the labor market impact of the growing number of individuals who have been imprisoned or have felony convictions. The findings presented in this paper show that, in 2014, overall employment rates were 0.9 to 1.0 percentage points lower as a result of the employment penalty faced by the large population of former prisoners and people with felony convictions. For men, their employment rate was 1.6 to 1.8 percentage points lower and for men with less than a high school degree, their employment rate was 7.3 to 8.2 percentage points lower.

However, it is not just the individual that suffers; the impact is felt across the U.S. labor market. In terms of GDP, the calculations in this report suggest that the population of former prisoners and people with felony convictions led to a loss of \$78 to \$87 billion in GDP in 2014. While there has recently been a push from advocates and policy-makers alike to re-examine sentencing policy and practice, the negative impacts on former prisoners and people with felony convictions themselves

²⁶ This estimate uses an estimate of a 0.9 to 1.0 percentage-point reduction in overall employment rates and assumes former prisoners and people with felony convictions produce one-half of the output of an average worker.

and the economy as a whole will grow in scale unless the burgeoning reform trend continues and accelerates.

Appendix

To arrive at estimates of the number of former prisoners and people with felony convictions, this paper uses annual reports of state and federal prisoners in the United States produced by the Bureau of Justice Statistics. These reports cover the number of prisoners admitted and released, as well as age-group-specific recidivism rates.

Releases

This report first uses administrative data on the total number of prisoners, number admitted, and starting with 1977, the number of prisoners released each year. Releases prior to 1977 are estimated using data on the total number of prisoners and number of admitted prisoners. For example, to determine the number of prisoners released in 1976, add the total number of admissions (146,388) to the total number of prisoners in 1975 (240,593), to get 386,981 in 1976. However, in 1976, the total number of prisoners was 262,833, which suggests that approximately 124,148 prisoners were released that year. This method is used for all years going back to 1968 (the first year considered because this paper only covers the working-age population and 64 year-olds in 2014 would have been 18 years old in 1968). (See **Appendix Table 1**).

APPENDIX TABLE 1

Total, Admitted, and Released Prisoners, 1967–2014

Year	Total	Admissions	Releases	Year	Total	Admissions	Releases
1967	194,896	N/A	N/A	1991	789,610	466,285	421,687
1968	187,914	72,058	79,040	1992	846,277	480,676	430,198
1969	196,007	75,277	67,184	1993	932,074	500,335	436,684
1970	196,429	79,351	78,929	1994	1,016,691	523,577	437,777
1971	198,061	89,395	87,763	1995	1,085,022	549,313	477,654
1972	196,092	99,440	101,409	1996	1,137,722	542,863	492,069
1973	204,211	109,484	101,365	1997	1,194,334	572,281	517,432
1974	218,466	119,529	105,274	1998	1,248,370	603,510	549,634
1975	240,593	129,573	107,446	1999	1,304,188	611,676	574,624
1976	262,833	146,388	124,148	2000	1,334,174	654,534	635,094
1977	285,456	163,203	147,895	2001	1,345,217	638,978	628,626
1978	294,396	152,039	142,665	2002	1,380,516	660,576	633,947
1979	301,470	161,280	154,958	2003	1,408,361	686,471	656,574
1980	315,956	171,956	158,331	2004	1,433,728	697,066	672,202
1981	353,673	199,943	163,085	2005	1,462,866	730,141	701,632
1982	395,516	218,087	175,607	2006	1,504,598	747,031	709,874
1983	419,346	237,925	213,198	2007	1,532,851	742,875	721,161
1984	443,398	234,293	209,655	2008	1,547,742	738,649	735,651
1985	480,568	258,514	220,485	2009	1,553,574	728,686	729,749
1986	522,084	291,903	248,909	2010	1,552,669	703,798	708,677
1987	560,812	326,228	290,301	2011	1,538,847	671,551	691,072
1988	603,732	365,724	320,460	2012	1,512,430	608,442	636,716
1989	680,907	447,388	369,032	2013	1,520,403	629,962	623,990
1990	739,980	460,769	405,374	2014	1,508,636	626,644	636,346

Source and notes: 1967–1976 total from Cahalan (1986), p. 35; 1968–1970, 1975 admissions from Cahalan p. 36 (data for missing years were interpolated from adjacent years); 1977–2014 total, admissions, and releases from BJS National Prisoner Statistics Program.

Next, prison releases are separated into the following age groups: 18–19, 20–24, 25–29, 30–34, 35–

39, 40–44, 45–49, 50–54, 55–59, and 60–64. This paper assumes that the age distribution of released prisoners is the same as the age distribution of prisoners in each year (see the estimates in Table 2). For the years in which direct estimates of the age structure were unavailable, linear interpolation is used. This paper also assumes that released prisoners are evenly distributed within each age group, so that, for example, one-fifth of the 60–64 year old age group is assumed to be 60, another one-fifth is assumed to be 62, and so on. The result of this process is displayed in **Appendix Table 2**.

APPENDIX TABLE 2

Released Prisoners by Age Group, 1968–2014

Year	18–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59
1968	4,856	19,559	15,641	11,367	8,690	6,625	4,380	2,710	1,693
1969	4,114	17,058	13,426	9,501	7,243	5,610	3,666	2,242	1,381
1970	4,816	20,548	15,927	10,972	8,339	6,567	4,241	2,560	1,555
1971	5,222	22,487	17,853	12,509	9,433	7,335	4,685	2,818	1,722
1972	5,879	25,567	20,794	14,812	11,085	8,513	5,379	3,223	1,982
1973	5,722	25,139	20,950	15,162	11,265	8,547	5,341	3,188	1,973
1974	5,782	25,675	21,930	16,118	11,892	8,916	5,511	3,276	2,041
1975	5,737	25,763	22,557	16,829	12,333	9,140	5,587	3,309	2,075
1976	6,440	29,258	26,266	19,883	14,477	10,606	6,413	3,782	2,388
1977	7,446	34,246	31,531	24,207	17,516	12,690	7,589	4,457	2,833
1978	6,965	32,449	30,648	23,853	17,157	12,294	7,271	4,252	2,721
1979	7,329	34,608	33,541	26,455	18,919	13,411	7,844	4,567	2,944
1980	7,247	34,710	34,529	27,588	19,620	13,762	7,960	4,615	2,995
1981	7,216	35,082	35,832	28,991	20,507	14,235	8,143	4,699	3,073
1982	7,503	37,053	38,869	31,836	22,402	15,394	8,708	5,002	3,295
1983	8,783	44,109	47,537	39,402	27,586	18,768	10,498	6,003	3,983
1984	8,318	42,514	47,088	39,486	27,511	18,534	10,251	5,834	3,901
1985	8,411	43,803	49,880	42,302	29,334	19,573	10,704	6,063	4,085
1986	9,116	48,427	56,715	48,633	33,571	22,189	11,999	6,763	4,592
1987	10,189	55,286	66,620	57,743	39,683	25,986	13,894	7,792	5,333
1988	10,759	59,713	74,063	64,871	44,391	28,805	15,226	8,495	5,862
1989	11,827	67,246	85,889	76,003	51,793	33,308	17,407	9,662	6,722
1990	12,374	72,202	95,008	84,916	57,634	36,739	18,981	10,480	7,353
1991	12,229	73,374	99,518	89,819	60,723	38,374	19,599	10,762	7,615
1992	12,332	73,707	98,013	90,126	64,171	41,299	21,430	11,767	7,731
1993	12,371	73,830	96,516	90,250	67,015	43,723	22,974	12,616	7,819
1994	12,252	73,171	94,270	89,481	68,746	45,319	24,060	13,212	7,817
1995	13,219	79,027	100,591	96,726	76,420	50,823	27,210	14,942	8,522
1996	13,599	81,452	102,032	98,879	79,824	53,146	28,588	15,699	8,619
1997	13,971	81,754	96,760	99,347	90,551	62,609	34,404	18,892	9,070
1998	14,641	86,705	102,759	105,817	96,156	66,368	36,605	20,101	9,659
1999	15,099	90,504	107,407	110,928	100,496	69,242	38,333	21,049	10,124
2000	16,585	99,701	118,689	122,583	110,998	76,723	42,544	23,363	11,285
2001	17,253	104,310	120,160	121,423	108,986	72,938	40,080	22,011	9,984
2002	17,314	104,344	121,382	122,989	110,222	73,895	40,233	22,089	9,956
2003	12,253	102,217	114,284	110,976	106,317	92,200	57,397	31,496	14,921
2004	11,533	104,454	118,613	110,690	107,877	93,484	59,406	32,577	17,397
2005	13,206	110,736	124,902	116,018	108,815	96,858	63,140	34,631	16,964
2006	10,916	98,764	123,384	115,729	110,153	101,836	71,083	38,976	20,135
2007	11,621	103,272	123,267	120,256	115,693	103,413	68,644	37,639	19,149
2008	11,846	105,038	125,339	122,569	118,222	105,277	70,217	38,595	19,680
2009	11,686	103,900	123,690	121,805	117,376	104,512	69,785	38,450	19,696
2010	9,918	84,140	115,630	115,675	98,354	90,264	80,758	55,621	29,799
2011	10,114	85,405	113,320	114,533	95,429	86,844	76,550	52,996	28,409
2012	8,277	77,043	100,601	106,332	87,230	79,590	69,402	50,937	28,652
2013	6,240	71,135	95,470	104,206	86,735	77,999	67,391	52,415	30,576
2014	6,074	71,791	98,660	105,661	90,477	77,823	66,518	53,822	32,690

Source and notes: Authors' analysis of Appendix Table 1. 1960: U.S. Bureau of the Census (1961), Table 4; 1970: U.S. Bureau of the Census (1972), Table 3; 1991, 1997, 1999-2014: BJS National Prisoner Statistics Program. For years where no data are available for prisoners' ages, data are interpolated from adjacent years. 1991, 1997, and 1999–2006 age groups 45–49 and 50–54 are estimated from the 45–54 age group, 55–59 and 60–64 are estimated from the 55+ age group, all based on 2007 proportions.

Recidivism

To arrive at the estimates of the number of former prisoners and people with felony convictions, this paper also relies on administrative data on three year return-to-prison recidivism rates. Data on recidivism are available for years 1983, 1994, and 2005. 1983 data are used for years before 1983, and linear interpolation is used for years between 1983 and 1994. Data from 1994 are used from 1994 to 2004. Return-to-prison rates by age group are not available in the 2005 update, but re-arrest rates by age group are available. To estimate the return-to-prison rate for each age group, the ratio of re-arrest to return-to-prison rates for each age group in 1994 was applied to the 2005 data. **Appendix Table 3** shows estimates of age-group-specific recidivism rates from 1968 to 2014. There are two sets of recidivism rates, a high and a low estimate which account for recidivism beyond three years after release.

APPENDIX TABLE 3

Age-Group-Specific Recidivism Rates, 1968–2014										
Year	18–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64
(a) 3-year Recidivism Rate plus 10 percentage points (high recidivism estimate)										
1968–1983	54.9	54.9	53.2	53.0	46.5	40.7	35.7	35.7	35.7	35.7
1984	55.5	55.5	54.0	54.1	47.9	42.5	37.1	37.1	37.1	37.1
1985	56.2	56.2	54.9	55.1	49.3	44.2	38.5	38.5	38.5	38.5
1986	56.8	56.8	55.7	56.2	50.7	46.0	39.8	39.8	39.8	39.8
1987	57.5	57.5	56.6	57.3	52.1	47.7	41.2	41.2	41.2	41.2
1988	58.1	58.1	57.4	58.4	53.5	49.5	42.6	42.6	42.6	42.6
1989	58.8	58.8	58.3	59.4	55.0	51.2	44.0	44.0	44.0	44.0
1990	59.4	59.4	59.1	60.5	56.4	53.0	45.4	45.4	45.4	45.4
1991	60.1	60.1	60.0	61.6	57.8	54.7	46.8	46.8	46.8	46.8
1992	60.7	60.7	60.8	62.7	59.2	56.5	48.1	48.1	48.1	48.1
1993	61.4	61.4	61.7	63.7	60.6	58.2	49.5	49.5	49.5	49.5
1994–2004	62.0	62.0	62.5	64.8	62.0	60.0	50.9	50.9	50.9	50.9
2005–2014	62.3	62.3	62.9	64.2	64.8	61.6	61.6	61.6	61.6	61.6
(b) 3-year Recidivism Rate plus 5 percentage points (low recidivism estimate)										
1968–1983	49.9	49.9	48.2	48.0	41.5	35.7	30.7	30.7	30.7	30.7
1984	50.5	50.5	49.0	49.1	42.9	37.5	32.1	32.1	32.1	32.1
1985	51.2	51.2	49.9	50.1	44.3	39.2	33.5	33.5	33.5	33.5
1986	51.8	51.8	50.7	51.2	45.7	41.0	34.8	34.8	34.8	34.8
1987	52.5	52.5	51.6	52.3	47.1	42.7	36.2	36.2	36.2	36.2
1988	53.1	53.1	52.4	53.4	48.5	44.5	37.6	37.6	37.6	37.6
1989	53.8	53.8	53.3	54.4	50.0	46.2	39.0	39.0	39.0	39.0
1990	54.4	54.4	54.1	55.5	51.4	48.0	40.4	40.4	40.4	40.4
1991	55.1	55.1	55.0	56.6	52.8	49.7	41.8	41.8	41.8	41.8
1992	55.7	55.7	55.8	57.7	54.2	51.5	43.1	43.1	43.1	43.1
1993	56.4	56.4	56.7	58.7	55.6	53.2	44.5	44.5	44.5	44.5
1994–2004	57.0	57.0	57.5	59.8	57.0	55.0	45.9	45.9	45.9	45.9
2005–2014	57.3	57.3	57.9	59.2	59.8	56.6	56.6	56.6	56.6	56.6

Source and notes: Beck and Shipley (1989), Langan and Levin (2002), and Durose, Cooper, and Snyder (2014). Data on recidivism are only available for years 1983, 1994, and 2005. For years before 1983, the rate in 1983 was used; for years 1994–2004, the rate in 1994 was used; for years between these two, data were estimated by interpolation. For years 2005–2014, recidivism rates were estimated by applying the ratio of re-arrest to return-to-prison rates for each group from 1994.

In addition, age-group-specific mortality rates are applied, adjusting up by 20 percent to account for the high-risk population of former prisoners and people with felony convictions.²⁷

27 Mortality rates for 2014 are not yet available, so data from 2013 is used (CDC 2016).

The final estimates of the number of former prisoners by age-group in 2014 are displayed in Appendix Table 4. These estimates exclude those who were in prison in 2014.

APPENDIX TABLE 4

FP in 2014, by Age Group, Estimated from Releases											
	18–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	Total
	High Recidivism Rate										
Number	3,462	103,482	313,719	561,470	729,788	862,169	1,000,498	1,017,025	871,744	674,755	6,138,112
% of total	0.1	1.7	5.1	9.1	11.9	14.0	16.3	16.6	14.2	11.0	100
	Low Recidivism Rate										
Number	3,921	117,223	355,611	637,129	829,082	979,384	1,132,947	1,147,083	977,343	750,990	6,930,712
% of total	0.1	1.7	5.1	9.2	12.0	14.1	16.3	16.6	14.1	10.8	100

Source and notes: Authors' analysis of Appendix Tables 1, 2, and 3. FP refers to former prisoners.

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