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Costs, Benefits and Distributional Consequences of Inmate Labor

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Abstract

We estimate that permitting inmate labor would likely increase national output, but by less than 0.2 percent of Gross Domestic Product. The largest social benefits from inmate labor are likely to come about from decreased recidivism, although the effect of inmate labor on subsequent crime and recidivism rates has not been adequately studied. The potential inmate workforce is low skilled. We estimate that permitting inmate labor could reduce wages of high school dropouts in the private workforce by 5 percent. To improve the economic contribution of inmate labor, we propose that private firms be allowed to bid for inmate labor, and that inmate workers be subject to all relevant labor legislation, including the right to collective representation. Alternative strategies for reducing recidivism and integrating offenders into mainstream society upon release, such as education and training, should also be considered, perhaps in conjunction with inmate labor.

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This paper addresses three main questions regarding inmate labor force participation. First, we assess the likely impact on national output. Second, we outline the principal issues to be considered in a broader analysis of the costs and benefits. Third, we discuss some steps that could enhance the contribution of inmate labor to society.

Are Bans on Inmate Labor Force Participation "Good" or "Bad" for the U.S. Economy?

Our answer to this question, subject to qualifications discussed below, is that a ban on prison labor is probably 'bad' for the economy in the narrow sense that it slightly reduces the total output of goods and services in the domestic economy as officially measured by figures for the Gross Domestic Product (GDP). As the following calculation suggests, however, the potential effect of permitting prison labor on GDP is likely to be quite small. To derive an upper bound estimate of the effect of encouraging prison labor on GDP, suppose that all inmates work full time, year round (i.e., 2,000 hours per year), and produce output per hour equivalent to the minimum wage ($5.15). Under these assumptions, inmate labor would produce $19 billion of output. In 1998, total GDP was $8.5 trillion in the U.S., so the potential addition of inmate labor to GDP is only 0.2 percent of total U.S. GDP.[1] This figure is less than the typical magnitude of "statistical discrepancy" in the National Income Accounts; it is barely noticeable.

We should stress that our calculation probably provides a substantial overestimate for several reasons. First, labor force participation of inmates is likely to be well under 100 percent even if employment of inmates is encouraged since relatively few inmates work when they are not incarcerated. Second, the average inmate may produce less output per hour than the minimum wage, especially once possible additional security costs or prison modifications are taken into account.[2] Third, prison industries already produce goods worth about $1.6 billion, so

time used to produce this output should be deducted from total potential available hours.[3] Finally, inmates already perform a great deal of uncompensated general work assignments in and around prisons (e.g., cleaning the facilities and preparing food) which are not included in GDP, so this time would also have to be deducted from potential available hours.[4]

Even if prison industries contribute a small amount to total output, they are not necessarily 'good' for the economy. For example, in a traditional government-operated industry, if extra security and supervision costs are required to create an environment that permits work compared to the costs of maintaining an environment in which inmates are not working, then these extra security costs might exceed the value of the output from the industry. In this case where the industry is not profitable for the government, it should be shut down even though some output was being produced, and total GDP raised. Moreover, if prison labor is not voluntary, than economic output can increase despite a decrease in welfare.

Do the Economic and Social Benefits of Inmate Labor Exceed Their Costs to Society?

An exclusive focus on GDP is not very informative. If the social costs outweigh the benefits, then the government should ban inmate labor. Conversely, as long as the social benefits are greater than the costs, then the government should encourage inmate labor. We believe it is critical to focus on social costs and benefits and not on GDP, because many of the most economically significant aspects of inmate labor are not captured by the dollar value of the goods produced by inmates.

What do we mean by social benefits and costs? The answer is that policy-makers need to estimate as well as possible the dollar value of the various consequences of allowing inmate labor. Some of these values are easily observed, such as the wages that private firms are willing

to pay workers. Other values are less easily observed, but verifiable in principle, such as the net change in the cost of security to the prison for inmates who are working in comparison to those who are not working. Still others must be estimated. Most importantly, if permitting prisoners to engage in prison labor reduces the subsequent recidivism rate of participants by even a small amount, it could have a great social impact in terms of reducing the pain and suffering of those who are spared being the victim of future crimes. It is quite possible that permitting prison labor could reduce subsequent crimes and recidivism because released prisoners who have work experience could fare better in the non-institutional economy. Despite the difficulty of precisely quantifying these effects, it would be a mistake ignore these non-directly verifiable values (i.e., implicitly assuming they are zero) so there have been many studies that try to obtain rough estimates of these values.

We specifically refer to "social" benefits and costs because some consequences of inmate labor may affect society-at-large even though they do not directly affect the inmate laborers or the employer. These benefits may be realized at the time the labor takes place, or in the future. If the experience of inmate labor decreases criminal activity *after* release, then there would be future benefits from the reduction of pain and suffering associated with crime, and these benefits should be discounted to present values for purposes of a cost-benefit analysis.

The information required to make an economic calculation of the benefits of prison labor is less stringent if the government allows private employers to bid for the services of inmate laborers. In this instance, the private employers would reveal information about their expected profitability from producing with inmate labor. Even when the employer is a private firm, the government still needs to assess whether there are important social benefits and costs that go beyond those taken into account by the employer that suggest whether the production should be

subsidized or taxed because of the government's interest in other consequences of the employment of inmate labor. It is also important that any changes in security costs that would result from prison labor be factored into such a decision.

We would emphasize two types of social consequences from inmate labor. First, partial equilibrium consequences can be thought of as due to one small enterprise that would not have been undertaken if inmate labor were not available. Second, general equilibrium consequences may occur if there were many enterprises using inmate labor, cumulatively large enough to affect the product and labor markets in which they compete.

We suspect the most important partial equilibrium social benefits are crime reduction, earnings by inmate laborers, and possible security cost reductions, which are discussed below.

Possible reduction in the number of crimes committed by offenders after release. Research suggests that offenders commit 12-15 crimes per year after release -- which obviously imposes large economic costs on society (for example, see Levitt, 1996). There is some evidence that participation in inmate labor provides skills and experience that help former prisoners to forego crime. For example, the recidivism rate appears to be 3-8% lower for former inmate laborers than for those with similar characteristics who were not inmate laborers.[5] The economic value of this crime reduction could be quite substantial. For example, if just five percent of released prisoners were induced to commit no crimes after being released, compared to a situation in which they would commit an average level of crime (say, costing $35,000 in the first year after release and gradually declining to zero after fifteen years), the net present value that could be saved over the 15 year period would be about $11,000 *per released inmate*.[6] Moreover, if five percent of released prisoners avoided a two-year prison term after participating in inmate labor, the present value of future incarceration costs would be reduced by about $2,800 *per*

released inmate.[7]

It may also be true, however, that the 3-8 percent estimate does not represent a causal effect of inmate labor on recidivism. Instead, those who choose to participate in inmate labor could possibly have had a lower propensity to engage in criminal activity even if they had not worked. Further study of the effect of inmate labor on recidivism should be a high priority. If there were a waiting list of inmates who wanted to work, then a random lottery for participation would be both equitable and facilitate study of the issue since the group not chosen in the lottery would be a natural control group. Alternatively, the opportunity for inmate labor could be made available at some prisons, and researchers could compare the experiences of these inmates to that at otherwise similar prisons.

Wages paid to inmate labor. Benefits accrue to inmates, who have savings to draw upon after release, and to their dependents in the form of support payments. Transfers can also be made to victim compensation programs and to the government through taxes and payments for room and board. In the past two decades, prison industry enhancement programs have been operating in which $84 million dollars were paid in wages, of which 8% were contributed to victims programs, 6% to family support deductions, 12% to withheld taxes, and 22% to room and board (Correctional Industries Association, 1998). There may also be an increase in employment and earnings in the legitimate labor market after release that would have many of the same benefits, as suggested by research on offenders released from federal prisons.[8] As noted above, further study to determine the causal effect of inmate work programs on later outcomes is a high priority for future research.

Possible reduced security provision by prisons for inmate laborers. Employing firms may have to provide special security when inmates are working. Another aspect of the security

issue, however, is that the operating costs of corrections facilities could be lower when firms are occupying 6-8 hours per day of inmates' time. Furthermore, even when inmates are not at work, their morale and behavior may have improved so that the costs of security are reduced, as suggested by research in New York (Maguire, 1996).[9] The quantitative magnitude of costs savings from this reduced need for security have yet to be assessed.

In partial equilibrium, we do not believe there are important social costs. The real question for the viability of small prison enterprises in a partial equilibrium analysis is whether enough private firms will choose to employ inmate labor at prevailing wages. The combination of paying prevailing wages for low skills with extra security costs in the workplace may not be attractive to employers relative to alternatives. The social benefits provided from reduced future crime and redistribution of inmate wages suggest that there could be under-provision of inmate employment, and that society could be better off if the government provides a subsidy to employment.[10]

We believe the most important general equilibrium social benefit in the long run involves the efficiency of production. Benefits accrue to consumers in the form of lower prices and to employing firms who have a larger supply of less-skilled labor willing to work at low wages. As pointed out earlier, however, this effect of permitting prison labor on the overall economy is likely to be quite small.

It is also our opinion that there are important potential social and distributional costs from encouraging prison labor, due to an outward labor supply shift of (mainly) unskilled inmate workers that will have consequences for less-skilled civilian workers. The first two columns of Table 1 compare the education distribution of the jail and prison inmates to the general population in 1991. Inmates are 2.4 times more likely to lack a high school diploma or GED

than are those in the non-institutional U.S. population (U.S. Dept. of Justice, 1994). In the third column, we use the education distribution of inmates in 1991 to infer the education levels of the 1.72 million men in jail or prison in 1998 (U.S. Dept. of Justice, 1999), and then report the ratio of the number of inmates at each education level relative to the number of men in the civilian labor force in the same education category (U.S. Dept. of Labor, 1999). These figures provide an indication of the potential magnitude of the labor supply shift due to prison labor by education class. Clearly, because so many inmates have a low level of education, the supply shift due to permitting prison labor will be greatest for the least skilled non-institutional workers.

Table 1

	Education Distribution:		Inmates as a Proportion of the
	Inmates	Population	Civilian Male Labor Force, 1998
Less than High School Graduate	.47	.21	.105
GED or High School graduate	.38	.36	.033
At least some college	.16	.43	.008

We estimate that if inmates join the labor force, the number of high school dropouts in the labor force will expand by 10.5 percent. In the long run, this increase in supply will probably have a greater effect on wages for less-educated workers in the non-institutional workforce, than on their employment (except, of course, for those who voluntarily chose to withdraw from the workforce because of the decline in wages). If the labor demand elasticity for this group of workers is -0.5, then wages could fall by as much as 5 percent for workers with less than a high school degree if all prisoners join the workforce.[11] This is likely an upper bound for several reasons: (1) the relevant labor market also includes women; (2) inmates probably have less skill than non-institutional workers with the same level of education; (3) only a proportion of prison inmates will work, and hardly any of those would work while in jail; (4) some fraction of civilian

workers may chose to withdraw from the labor force rather take a job that pays 5 percent less; (5) the minimum wage provides a floor below which wages cannot fall in many companies. Despite these caveats, this back-of-the-envelope calculation provides a rough estimate of the potential impact of prison labor on the less-skilled non-institutional labor force. Moreover, if civilian workers who withdraw from the formal labor market because of deteriorating wages are pushed into a life of crime, the social costs could be substantial.

Overall, however, despite the large increase in incarceration in the U.S., inmates still would be a small fraction of the labor force even if many of them were working. While the proportion of the population in prison or jail has doubled since 1985, the number of adult men in prison or jail equaled 2.3 percent of the number in the male labor force (U.S. Dept. of Justice, 1998). For workers with some college, that ratio is under 1 percent. The 1998 overall employment-to-population rate is predicted to be 70.6 percent had the prison population been included in the estimates, compared to the Bureau of Labor Statistics estimate of 70.9 percent for the non-institutional population in the hypothetical situation in which all incarcerated individuals were added to the civilian, non-institutional population, and 35 percent were employed.[12]

In assessing the economic value of the social costs and benefits, the government also must consider the distributional consequences. In this case, the less-skilled labor adversely affected by the presence of inmate labor may also as a group be the recipient of some of the social benefits. The reason for this is that they are the same group that is most likely to benefit from any reduction in criminal victimization that would arise if participation in inmate labor programs lowers criminal activity after release. Some members of this group will also benefit from the family support payments made by inmate laborers. A concrete recommendation about the decision the government should make would be based on the magnitude of these costs and

benefits, and a social welfare function that places weights on the welfare of the various distributional groups. It would also be important to investigate the relative cost effectiveness of alternatives such as education and training for prisoners, which could in principle provide some of the same benefits without the adverse distributional consequences for other less-skilled workers who would compete with inmate laborers. Any serious recommendation would require much further research on these issues.

What Steps are Essential to Improve the Economic Contribution of the Incarcerated Labor Force?

As we noted above, we see no theoretical rationale for the government to be the employer of inmate labor. We suspect the contribution of inmate labor to economic output would be greater if they were employed by the private sector. Shifting to an open system of private sector employers could also have the benefit of placing all prospective employers on a level playing field, without preferences for particular employers or for the purchase of prison-made goods. *In concert with privatization, we suggest that inmate workers be covered by all relevant labor legislation that applies to private sector firms: including the right to form a union, fair labor standards, and workplace safety regulations.*

Because inmate laborers do not have the option to "vote with their feet" or shop around for alternative, better paying jobs, the potential for inmate labor to be exploited is great. In this situation, unionization may also provide important benefits and protections. In order to maximize their economic contribution, inmate labor needs a negotiating agent aligned with its interests, and a union-like organization could serve as that agent. This organization could take responsibility for handling outreach to employers and specialize in handling additional security

arrangements for inmate labor that would be unfamiliar and costly for each private sector employer to undertake. A union-like organization may also be more effective in convincing inmates to participate in educational programs that would raise their wages, since inmates may (accurately) perceive that this advice is coming from a party that has their self-interest in mind.

One final point is that, since the economic contribution of inmate labor is likely to be a very small addition to GDP, and since the main economic effect of inmate labor would follow from a possible reduction in recidivism rates, the government should consider whether there are more efficient and effective means than inmate labor to reduce future recidivism rates. For this reason, we would reiterate that other strategies for reducing recidivism rates and integrating inmates into mainstream society after release should also be considered and studied. Some of these strategies may complement inmate labor – such as requiring employers to provide specific on-the-job-skills training – and others may be a substitute for inmate labor because they take time that diverts inmates away from work – such as requiring general classroom courses in basic reading or the control of aggression. Identifying ways to integrate inmates into mainstream, law-abiding society upon release should be a priority from an economic as well as social perspective.

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ENDNOTES

[1] 1998 GDP is reported by the U.S. Department of Commerce in "National Income and Product Accounts Tables," *Survey of Current Business*. Miller et al. (1998) make essentially the same point concerning a relatively small increase in output due to prison.

[2] Inmates worked for wages that averaged 78 cents per hour in prison industries in 1997, so the minimum wage may overstate the average productivity of inmates. This figure is derived from the ratio of total inmate wages paid in 1997 (Miller et al., 1998, Figure 12) to total inmate labor hours (Correctional Industries Association, 1998, p. 108).

[3] Gross sales are reported in Correctional Industries Association (1998).

[4] A more accurate measure of GDP would include the value of the service performed by inmates engaged in general work assignments. In principle, general work assignments in prison are services that would require performance by at least some non-inmate workers if there were a ban on general work by inmates. It appears to us that a ban on general work by inmates combined with performance of exactly the same activities by non-inmate labor that received wages would increase measured GDP, but this is a flaw in the measurement of GDP because the output of economic activity is unchanged regardless of whom performs the work.

[5] A study of the federal PREP program (for work experience, vocational and apprenticeship training) found that participants had a recidivism rate of 6.6%, in comparison to 10.1% for comparison group with similar demographics and criminal history (and 20% overall rate for all prison inmates). See Saylor and Gaes (1997).

[6] The dollar value estimate of $35,000 per year is conservative in the sense that it is

somewhat lower than the $43,100 estimate of the average dollar value of the cost of crimes excluding murder committed by released inmates from Levitt (1996). This illustrative calculation assumes straightline depreciation in the dollar value of crime over 15 years, and a discount rate of four percent.

[7] For this calculation, the annual cost of incarceration is assumed to be $30,000. See Levitt (1996) for citations to estimates ranging from $23,500 to $35,000. Five percent of prisoners are assumed to be released for one year, and then in prison for two years, with a four percent discount rate.

[8] Saylor and Gaes (1997) find that PREP program participants had an employment rate of 72% one year after release while non-participating inmates with similar background characteristics had an employment rate of 63%.

[9] The study compares inmates above the 80th percentile in their number of institutional infractions prior to participating in inmate labor to a sample of inmates with a similar number of infractions during that time period. In a follow-up, the group that participated in inmate labor had incurred 3.3 infractions while working and those who did not work incurred 5.0 infractions. While the results for this high infraction subgroup were statistically significant, there were not significant changes for those with a lower number of infractions prior to the inmate labor experience.

[10] One type of subsidy that may be feasible here is a simple wage subsidy. In general, the wage subsidy is thought to be an unattractive policy instrument because it can be easily extorted

by an employer who reports fraudulently low hours and a high wage -- since usually information on hours is difficult to verify. In the case of inmate labor, there is directly accounting for the time the inmate spends with the employer, so this usual issue can be resolved.

[11] An elasticity of –0.5 for total labor demand was the median estimate in a survey of 65 labor economists. See Fuchs et al., 1998.

[12] This analysis is based on Katz and Krueger (1999). The original analysis considered what would have happened to employment if inmates had been released. Here we consider the implications of including inmate laborers in the labor force statistics. We focus on men because about 90 percent of those in prison or jail are men. Administrative earnings data collected by the California Employment Development Department show that 35 percent of individuals who served 1-2 year sentences in California for federal crimes were employed prior to being arrested. This figure is similar to the employment rate those convicted but not sentenced to prison time, two years after their case was filed. Consequently, we assume that 35 percent of those in prison or jail would be working if given the opportunity. See Kling (1999). For U.S. employment and population figures, see the Bureau of Labor Statistics website at www.bls.gov.