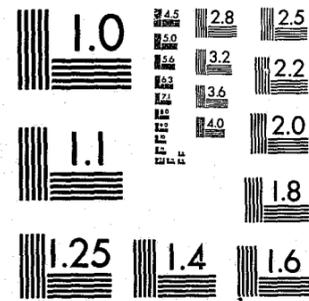


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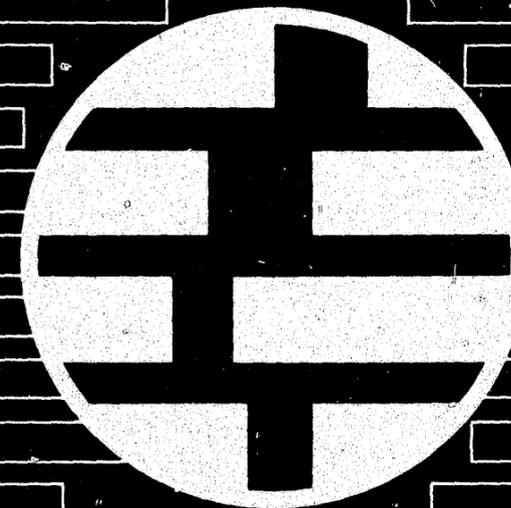
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Estimating the Number of Persons  
with Records of Arrest  
in the Illinois Labor Force

April 1982

STATISTICAL ANALYSIS CENTER

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Estimating the Number of Persons  
with Records of Arrest  
in the Illinois Labor Force

April 1982

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Introduction

Recently, a number of articles have appeared which are concerned with the development of a national computerized criminal history system (CCH), <sup>1/</sup> recommended by the Attorney General's Task Force on Violent Crime. The purpose of such a system, known as the Interstate Identification Index (III), is to make criminal history records, or "rap sheets", more accessible to criminal justice agencies, and to reduce the number of duplicate records held at the state and local levels. <sup>2/</sup>

These articles and the research upon which they are based, conclude that between 25% and 33% of the U.S. labor force would be labelled as criminal by such a system. <sup>3/</sup> Such estimates have been employed in arguments against the development of the III. For the most part, the figures reported in these articles are based on the work of Neal Miller (1975;1979).

The purpose of this paper is to investigate the way in which Miller's estimates were obtained. This requires an examination of the assumptions he employed when calculating these estimates. As will become evident, the methodological assumptions used have a major effect on the conclusions one derives from the estimates. Therefore, this paper will: 1) replicate Miller's procedures for estimating the number of persons in the

<sup>1/</sup>Kenneth Laudon, "A Risky Index of Crime", The New York Times, September, 1981; Jake Kirchner, "Study Sees FBI's CCH Alternative in Jeopardy", Computerworld, September 7, 1981; Jake Kirchner, "FBI Encouraged by Crime File Decentralization", Computerworld, November 9, 1981.

<sup>2/</sup>The SEARCH Group's The American Criminal History Record (1976:27) estimates that there are approximately 195 million records in existence. About 52% of these are held by local agencies.

<sup>3/</sup>It is worth noting that this 25-33% estimate is based on Miller's (1975) earlier work; in his later work (Miller, 1979) he calculated this range to be about 25-28%.

<sup>4/</sup>"Labor force" is defined by the Department of Labor, Bureau of Labor Statistics, as being comprised of all individuals 16 years of age or older, who are currently employed or are actively seeking employment (U.S. Department of Labor, (1978)).

labor force 4/ with records of arrest; 2) review the assumptions used to generate such estimates; and 3) improve these estimates where assumptions are found to be weak or unfounded.

#### A Brief History of Criminal History Records

The American criminal history record chronicles each contact an individual has with the criminal justice process by documenting such events as arrests, charges, dispositions, sentences, and correctional commitments. A record is established when an individual is arrested for the first time. As the individual is processed through the system, entries concerning charges, dispositions and sentences are made. If an individual is arrested more than once, additional entries are appended to the same record. A criminal record, if complete, 5/ will contain an individual's entire criminal past, describing the consequence of every arrest. 6/

A major program, System for Electronic Analysis and Retrieval of Criminal Histories (SEARCH), a consortium of states, was launched in 1969. It was designed to explore the potentialities and feasibility of an on-line system which would permit the interstate exchange of offender history files, as maintained by state and local levels. In 1970, the U.S. Attorney General authorized the FBI to manage the interstate exchange portion of the project. It was in this same year that the FBI began converting offender records to computer form for the operational computerized criminal history (CCH) file of the National Crime Information Center (NCIC).

Concerning the development of CCH, the SEARCH Group Inc. (1976:1) reported that of the 28.5 million criminal histories maintained at the state level, 3.9 million had been computerized. Nonetheless, not all states participated in this exchange program. More recently, the Attorney General's Task Force on Violent Crime has recommended the development of the Interstate Identification Index Program. The III is a decentralized system. Records are to be maintained by the states, while states would exchange records through telecommunications network.

5/Miller (1975; 1979) found that only 45% of the criminal history records held by the FBI were complete.

6/Minor offenses, such as disorderly conduct and vagrancy, usually are not included in Illinois. Only felonies and class A and B misdemeanor arrests are recorded at the state level. Records concerning the violation of local municipal ordinances are maintained only at the local level.

Locally, the state of Illinois began collecting criminal history records in 1931. In 1976, the Illinois Bureau of Identification began automating these files--i.e., creating a CCH system. As can be seen from table 1, better than 50% of these files had computerized segments by December 1, 1980. According to the Bureau of Identification, there were still some 700,000 manual files at that time (see table 1).

It is estimated that, in Illinois, by the end of 1980, the total number of subjects on file was approximately 1.57 million. 7/ The state of Illinois requires all those 17 years of age and older, who have been arrested in Illinois for a felony or class A or B misdemeanor, to be fingerprinted. 8/ This 1.57 million figure will serve as the base figure from which all subsequent extrapolations and estimates will be derived.

#### Previous Estimates of the Number of Persons with Records of Arrest

In 1974, the Federal Bureau of Investigation reported that it held the arrest records of approximately 21 million individuals on file (FBI, 1974a). This was one of the major findings of the FBI's (1974b) "Careers in Crime" program. Prior to this study, there were no estimates of the number of persons with criminal history records in the U.S. 9/

Miller (1975;1979) examined some of the possible shortcomings of this FBI estimate. He (1975:3; 1979:3-4) noted two major caveats in the FBI estimate.

- Miller (1975:3) noted that on the basis of FBI congressional testimony it became apparent that the FBI had two fingerprint files. The first file contains 21 million people. A second set of records exists which is comprised of the fingerprints of persons arrested prior to 1970,

7/This figure is based on a linear interpolation of the total number of subjects on file on June 1, 1980 and December 1, 1980. The Bureau of Identification reports having 1,566,900 subjects on file as of December 1, 1980. It was estimated that about 6,100 subjects are added to the file each month, therefore 6,100 was added to the 1,566,900, giving 1,573,000 as the estimated number of subjects on file at the end of 1980.

8/This is the first step in the establishment of a criminal history record.

9/Ronald Christensen (1967) carried out some projection modeling, which attempted to predict the number of persons arrested and convicted for future years.

Table 1

Breakdown of Number of Subjects on File for the State of Illinois

	Number	Per Cent
	-----	-----
Computerized Files	846,254	53.1%
-----		
Manual Files	720,646	46.9%
-----		
-----		
Total Subjects on File	1,566,900*	

\* Based on estimates provided by the Illinois Bureau of Identification as of December 1, 1980.

and for whom the FBI had only one arrest record. It was estimated that this second file contained an additional 9 million individuals.

- Congressional testimony on the part of both the FBI and the Law Enforcement Assistance Administration (LEAA) that not all individuals with state and local arrest records are contained in the FBI files (Miller, 1979:4). It was estimated that the FBI holds records for approximately 67% of all persons who have criminal records at the state and local level.

Miller (1975) attempted to improve the FBI estimate. He (1975:3;49) estimated that between 31.5 and 45 million persons in the U.S. have criminal records. <sup>10/</sup> After correcting for mortality rates and labor force participation rates (Miller, 1975:3;50), he estimated that between approximately 26 and 38 million persons in the U.S. labor force have records of arrest.

In 1979, Miller attempted to further refine these estimates, and establish the reliability of these figures, by deriving his estimates from three independent data bases. In order to obtain a range within which the actual number of persons in the labor force with records of arrest was likely to fall, Miller (1979) calculated estimates based on these three different data sources. If such estimates do not differ greatly, then one can be more confident in the reliability of these estimates. The three data bases from which Miller derived his estimates are listed below.

- (1) FBI estimate of the number of subjects held in their files.
- (2) Data from the Philadelphia Cohort Study (see Wolfgang et al.(1972) for a description of this study).
- (3) State criminal history record files for the states of California, New Jersey and New York.

Table 2 shows Miller's (1979) estimates of the number of persons with records of arrest in the U.S.

<sup>10/</sup>Miller took the FBI's 21 million figure as the lower limit, and added the additional 9 million persons in the second file to this 21 million to get an upper limit of 30 million. Each of these figures was multiplied by 1.5 (to correct for the 67% reporting rate), which yields the estimates of 31.5 and 45 million.

Table 2

Estimates of the Number of Persons with Arrest Records in the United States\*

Source of Data	Number of Persons with Arrest Records
New York	46.5 million
FBI	41.0 million
Philadelphia Cohort Study-High Estimate	41.0 million
New Jersey	40.6 million
California	38.8 million
Philadelphia Cohort Study-Low Estimate	32.5 million

\* These are the estimates reported in Miller (1979).

These estimates range from a low of 32.5 million, based on the Philadelphia Cohort Study, to a high of 46.5 million, based on New York state data. As was the case with his earlier study (Miller, 1975), he adjusted for mortality rates, underreporting rates, as well as, deletion and expungements. <sup>11/</sup>

After adjusting for labor force participation of those with records, <sup>12/</sup> Miller (1979:21) concluded that no less than 25.9 million, and no greater than 28.8 million persons in the labor force have records of arrest. This constitutes between 26 and 28% of the labor force in 1977.

Though Miller seems to have employed a reasonable methodology for obtaining his estimates, we must remain cognizant of several issues with regard to the methods used by Miller (1979). As Miller (1979:18) himself has noted, the figures obtained are based on substantial "estimated" adjustments. That is, since the actual mortality rate, labor force participation rates, or underreporting rates are not known, estimates of such rates must be used in order to adjust base figures. Nonetheless, Miller seems to have employed reasonable estimates of these adjustments.

Two other shortcomings, concerning the data rather than the estimation procedures themselves, are worth mentioning. Both have to do with how representative his estimates are of the actual population of persons with records of arrest. First, the estimates based on the Philadelphia Cohort study are rife with assumptions. Even considering the adjustments which have been made, one must remain aware of the fact that this cohort was comprised solely of urban males, born in 1945. Despite Miller's attempts to adjust for these shortcomings, an estimate based on these data would appear to be questionable with regard to representativeness.

<sup>11/</sup>According to Miller (1979:6), an 18% mortality rate is used which is based on an FBI 1978 study, which is not cited. The underreporting rates are as follows: 10% for California, 25% for New York, 50% for New Jersey, and 33% for the FBI.

<sup>12/</sup>Miller (1979) uses a labor force participation rate of 90% for record holders. However, there is evidence to suggest that such a rate is too high. Many of those who have been convicted, and subsequently sentenced, have a high rate of unemployment. If such individuals remain unemployed for a long period of time they are likely to become discouraged and stop seeking potential employment.

Second, although Miller notes that the states chosen for analysis were randomly selected, he does not describe how this was done. Indeed, it may be unreasonable to assume these states are representative of the nation as a whole, since they represent fairly populous states, and therefore may overestimate the national number. <sup>13/</sup>

Methodology Employed

One of the major purposes of this paper is to replicate Miller's (1979) estimation procedures to obtain similar figures for the state of Illinois, rather than a national figure. Thus, the main methodological procedure utilized is an extrapolation procedure for deriving estimates of the number of persons in the Illinois labor force with records of arrest. Following Miller (1975;1979), different assumptions, and therefore adjustments, will be employed. For example, one can vary the underreporting, mortality, and labor force participation rates. As a result, different estimates are obtained by varying the underlying assumptions or adjustments.

The extrapolation procedure is a fairly straightforward three step process.

- (1) The number of persons with records of arrest must be ascertained. The estimated 1,573,00 subjects on file with the Illinois Bureau of Identification serves as this base figure.
- (2) This figure must be adjusted for a number of factors such as mortality rates, underreporting, and expungements.
- (3) The estimates obtained in the second step, will be adjusted for labor force participation rates for various social groupings, as well as those who are incarcerated.

By varying these adjustments, a range is obtained, within which one can be fairly certain the actual number

<sup>13/</sup>Harries (1974) has shown there is significant regional variation with regard to both the types of crimes committed and crime rates themselves. These states may therefore be unrepresentative since they represent only two regions in the United States.

<sup>14/</sup>The idea of obtaining a range of estimates within which the actual figure is likely to fall is quite similar to the statistical notion of a "confidence interval." The difference being that the lower and upper limits are constrained by logical assumptions, rather than statistical probability.

of persons with records of arrest will fall. <sup>14/</sup>

The Number of Persons in Illinois with Arrest Records

When using Illinois criminal history record information, or any criminal history data base, several points must be kept in mind. These represent caveats which are common in criminal history data bases for many states (Miller, 1979:12-15), and which will be examined and adjusted for in the case of Illinois.

• Individuals Who Are Deceased

The records of deceased persons have not been systematically deleted from the files. According to the Bureau of Identification, 2,000-3,000 files were deleted each year for subjects who were reported deceased. <sup>15/</sup> Although the Bureau was unable to tell us the exact number of persons whose records have been deleted in this manner, they noted that the records of deceased subjects have not been deleted since 1978. If one does not correct for the mortality rate, the estimate of the number of persons with criminal records will be inflated.

• Expungements

The Bureau of Identification reports that about 2,000-3,000 records are expunged each year. That is, persons who are acquitted of a charge may have their records expunged by court order.

• Those with Records Unreported to the State

It is reasonable to assume that there is less than 100% reporting by local agencies to the Department of Law Enforcement. <sup>16/</sup> Although such records remain unreported to the state, they are likely to exist at the local level. Unless some correction is made for underreporting, one is likely to underestimate the number of persons with records of arrest.

<sup>15/</sup>This information is based on a personal communication, October 13, 1981, with the the Assistant Bureau Chief, John Loverude.

<sup>16/</sup>One way of obtaining an estimate of the per cent of arrests which are reported is to compare the number of fingerprint cards received by the Bureau of Identification in 1980-- about 240,000, according to the Bureau's monthly activity reports---with the number of arrests in Illinois for 1980-- about 303,000 based on UCR data. This yields a reporting rate of about 79%.

The reasons for these adjustments should be apparent. The record of a deceased person is unlikely to have an impact, while an individual who has no record at the state level, but does at the local level, can be greatly affected. In essence, one must consider how representative the pool of criminal histories on file with the Bureau of Identification is of the actual Illinois criminal history record universe.

Three estimates of the number of persons in Illinois with records of arrest are presented in table 3. The highest estimate of 1.93 million has been adjusted for both underreporting and expungements. This is tantamount to assuming a 100% reporting rate, plus the number of records which have been expunged. This provides the upper limit of the interval or range within which the actual number of persons with arrest records is likely to fall. The second estimate of 1.57 million is simply the Bureau of Identification's estimate of the number of subjects on file, with no adjustments. The third estimate of 1.29 million constitutes the lower limit of this range. This figure has been adjusted for an 18% mortality rate. <sup>17/</sup>

These estimates give us an idea of the implication of various assumptions/adjustments on these estimates. It is being maintained that there are between 1.29 and 1.93 million persons in Illinois with records of arrest.

Number of Persons in the Illinois Labor Force with Arrest Records

The estimates obtained in table 3 must be further adjusted to obtain estimates of the number of persons in the Illinois labor force with records of arrest.

• Incarcerated Adults

If these data are to provide a reasonable estimate of the number of persons in the labor force with records of arrest, it must be comparable to the Bureau of Labor Statistics' labor force estimates. Incarcerated individuals must be excluded since they are excluded from the labor force by the Bureau of Labor Statistics' definition. <sup>18/</sup>

<sup>17/</sup>This is the same correction factor that was used by Miller (1979:6). According to Miller this is based on a study done by the FBI in 1978, which is not cited.

<sup>18/</sup>This is a simplifying assumption, since there are a number of incarcerated individuals who participate in work release during the week, or on weekends. This represents about 3,000.

Table 3

Estimates of the Number of Persons in Illinois with Records of Arrest

Upper Limit

1,573,000	The upper limit or highest estimate of our range is obtained by taking the Bureau of Identifications's estimate of subjects on file (1,573,000).
+327,000	To this we add a correction factor for underreporting (.207 x 1,573,000 = 327,000).
+30,000	Finally, another additional 30,000 individuals are added to this figure to correct for expungements.
-----	
<u>1,930,060</u>	This yields an estimate of 1,930,060 as the upper limit of the range within which we would expect the actual number of persons with records of arrest in Illinois to fall.

Intermediate Estimate

<u>1,573,000</u>	For our intermediate estimate we simply use the Bureau of Identification's estimate of the number of persons with records of arrest, with no adjustments.
------------------	---

Lower Limit

1,573,000	For the lower limit of this range, again we begin with the BOI's estimate of the number of persons with arrest records.
-283,140	From this figure we subtract the number of persons who are thought to be deceased. We use the same 18% mortality rate as Miller (1975;1979) (.18 x 1,573,000 = 283,140).
-----	
<u>1,289,860</u>	Thus, we obtain the lower limit of our range.

• Labor Force Participation

It is reasonable to assume that not all record holders participate in the labor force. If no adjustment is made, the implication is that 100% of Illinois record holders are participating in the labor force. We shall adjust our estimates for the participation rates of white males, black males, and females, in Illinois. <sup>19/</sup>

In table 4, the estimates presented have been adjusted for the number of persons incarcerated (11,900) as well as the Illinois labor force participation rate (about 72.25%; see appendix for more exact calculations). That is, following the Bureau of Labor Statistics, incarcerated individuals are excluded by definition from the labor force. Second, it is assumed that not all persons with arrest records are employed or actively seeking employment, therefore we use the labor force participation rate for the state of Illinois as an adjustment.

The estimates in table 4 range from a low of .92 million, to a high of 1.39 million. These constitute, respectively, 16.9% and 25.4% of the Illinois labor force. Thus, while it is possible that the actual number of persons in the labor force with records of arrest could fall outside this range, this seems unlikely. Therefore, it is maintained that approximately 17% and 25% of the Illinois labor force have records of arrest.

Discussion

Aside from the methodological issues mentioned earlier, concerning the estimation procedures and representativeness of data used by Miller, caution must be exercised when using these estimates. If such figures are to be used in policy decisions, one must remain cognizant of the assumptions upon which these estimates are based before using them to support an argument for or against the establishment of a national CCH.

<sup>19/</sup>These rates for various groups are provided in the appendix. One can question this rate as too high. That is, there is no reason to assume that record holders have a labor force participation rate as high as the general population. In fact, since ex-offenders are among the group of record holders, one would expect their labor force participation rate to be lower than that of the general population. According to a personal communication with Ken Klimusko, Department of Corrections, it was learned that the unemployment of rate of ex-offenders is usually 5 to 6 times higher than that of the general population.

Table 4

Estimates of the Number of Persons in the Illinois Labor Force with Records of Arrest.

Upper Limit

1,930,00	The upper limit of this range is obtained by taking the highest estimate in table 3.
-11,900	From this we subtract the number of persons who were incarcerated in Illinois Prisons in 1980.
1,918,100	Subtracting the number of individuals incarcerated yields the following figure.
x .7225	This figure is then corrected for the labor participation rate in Illinois in 1980 for various social groups. Thus, we adjust our estimate for a labor force participation rate of about .72 (see appendix for a more detailed description of how this figure was calculated.)
1,385,827	This results in an estimate of the number of persons in the Illinois labor force with records of arrest, which about 25.4% of the Illinois labor force.

Intermediate Estimate

1,573,000	Using the same procedure as above we obtain the following intermediate estimate of the number of persons in the Illinois labor force in 1980.
-11,900	Intermediate estimate from table 3.
1,561,100	Number of incarcerated individuals.
x .7225	Figure corrected for incarcerated persons.
1,127,895	Labor force participation rate.
	Estimated number of persons with records of arrest in the Illinois labor force, or 20.7% of the labor force.

Table 4 (continued)

Lower Limit

1,289,860	Lower limit from table 3.
-11,900	Number of incarcerated individuals.
-----	
1,277,960	
x .7225	Labor force participation rate.
-----	
<u>923,326</u>	Lowest estimate of the number of persons in the Illinois labor force with records of arrest, or about 16.9% of the labor force.

Some of the following adjustments made by Miller (1975;1979), and in our own estimates, would not seem valid if these figures are used as an argument for or against the establishment of a national CCH.

• Juveniles

In several of his state extrapolations, Miller (1979) made adjustments for the number of juveniles with records. However, in a number of states, including New York and Illinois, these records are not easily accessible, if not totally inaccessible, to non-criminal justice agencies (e.g., employers). These records are held by the courts rather than a central repository. In Illinois, these records are unavailable to non-law enforcement agencies once the juvenile has reached the age of 17. Thus, for all practical purposes, such information is inaccessible, and cannot be used to deny an individual a job.

• Underreporting

Miller made adjustments to state data to correct for underreporting. However, it seems reasonable that if such records have not been reported to the state, then no one can get the unreported information from the state. <sup>20/</sup> Since the III represents a decentralized system which simply acts to connect existing state repositories, there is no reason to assume that reporting rates would be any higher than they are currently. Therefore, if one adjusts for underreporting, one overestimates the number of persons who could be labelled "criminal" by the III.

• Deletion and Expungement

Arguments concerning the adjustments for deletions and expungements are similar to that for underreporting. That is, since the individual is not on the system, such information cannot be

<sup>20/</sup>This does not speak to the issue of whether such information may be obtained at the local level.

<sup>21/</sup>It is especially important to keep in mind that the terms "deletion" and "expungement" do not mean the same thing in all states. As the SEARCH Group (1981) has indicated, there is a wide variety of policies concerning the sealing and purging of criminal history record information. This makes it extremely difficult to correct for such aspects when calculating a national average, as did Miller (1979).

used for employment checks, etc. 21/

If Miller's estimates are accepted at face value, it is tantamount to assuming the following: (1) 100% of all arrests are reported; (2) juveniles' records are accessible; and (3) no files have been deleted/expunged from the system.

This brings us to the issue of what population we wish to make generalizations about. One must decide which universe or population one wants to make inferences about. If the opponents of the III are going to argue that such a system would label a large portion of the labor force as criminal, they cannot use Miller's estimates as the basis for such an argument. These estimates are more likely to reflect the status of state rather than national or local criminal history systems.

Perhaps the crux of the matter has to do with which level of government will have the greatest impact on employment of record holders. For example, the SEARCH Group Inc. (1976:27-28) estimated that of the approximate 68 million requests for criminal history information made in 1975, 54 million (79.4%) of these requests were made to local law enforcement agencies, while about 3 million (4.4%) were made to state agencies. Therefore, it would appear that local criminal history files are more likely to play a key role than state files, since they account for 52% of all criminal history files in the U.S., and 80% of the requests.

Indeed, the Interstate Identification Index may be a much better alternative to a centralized national CCH system. First, since a level of bureaucracy can be omitted if the states maintain the records, the III information should be more complete and up to date. Second, it should prove less costly to operate and maintain since state repositories already exist, the only additional cost should be the communication network. 22/ Moreover, such a system might well eliminate a good deal of the duplication which now exists--i.e., records for the same individuals at both the state and federal level.

#### Conclusion

By using a method of extrapolation similar to that employed by Miller (1975;1979), it was estimated that in 1980, between .92 and 1.39 million persons in the

22/This cost might be further reduced because of the existence of the National Law Enforcement Telecommunication System (NLETS).

Illinois labor force had records of arrest (i.e., approximately 17% and 25%).

This is considerably less than the 25 to 33% figure which had been mentioned earlier in a number of newspaper articles.

While this estimate appears to be based on reasonable assumptions, we must remain cognizant of several limitations. (a) We have only one source of data to extrapolate from (namely the BOI figure), and therefore no figure to validate it with. (b) Many of the adjustments or corrections which have been made during our extrapolation procedure, are estimates themselves. For example, at present, we have no way of knowing if the labor force participation rate is the same for record holders as for non-record holders.

There are a number of questions which could not be answered in this study, but are nonetheless crucial.

- Is the labor force participation rate the same for record and non-record holders?
- How many individuals are refused employment because they have an arrest record?
- What proportion of record holders have been convicted/ incarcerated?
- What proportion of record holders have committed particular types of crime?

In order to better address some of the questions which gave rise to these estimation procedures, it would be useful to obtain answers to the above questions.

Indeed, if we are concerned about the impact of CCH on the employment opportunities for record holders, we may question the use of the labor force definition in these estimation procedures. As mentioned earlier, unemployment rates are much higher for ex-offenders than for the general population.

There are two main points to be kept in mind regardless of the reason for calculating the estimates. First, any estimate, no matter how sophisticated, is only as good as the data on which it is based. Poor data is unlikely to yield reliable estimates. Second, the accuracy and reliability of an estimate depend on the assumptions which underlie it. One must remain aware of the assumptions on which they are based. By carefully following the logic involved in such estimation

procedures, one can tell whether the underlying assumptions are valid for the question being addressed.

Thus, while Miller's (1975;1979) method of estimation seems reasonable, some of the adjustments made are not valid if one is addressing the issue of the III. The assumptions he uses when deriving his estimates must be kept in mind when one is evaluating the utility of such estimates in terms of the problem being addressed.

Appendix

In this appendix the procedure used to adjust estimates for labor force participation rates is described. Basically, this consists of an adjustment of the figures in table 3 to obtain the estimates in table 4. Estimates of the labor force participation rate for white males, black males, and females in the state of Illinois for 1980 are given below. These were provided by the Bureau of Labor Statistics.

Illinois Labor Force Participation Rates

<u>Group</u>	<u>Rate</u>
White Males	.813
Black Males	.683
Females	.526

To obtain the refined estimates in table 4, we start with the estimates in table 3. These estimates are broken down into their respective proportions of white males, black males, and females. Each of these components is in turn multiplied by its respective labor force participation rates, which are summed to obtain an estimate of the number persons with records of arrest who are likely to be members of the labor force. An example is provided below.

We begin with a base figure from table 3. Suppose we take the Bureau of Identification's 1,573,000 estimate, and subtract from it 11,900, which is the number of incarcerated adults. Then, we calculate the proportion of this figure which is likely to be white males, black males, and females. Miller (1979:21) estimated that 85% of all records holders are male, and 30% are black. Based on Crime in Illinois, 1980 (Illinois Department of Law Enforcement, 1981) it was found that about 81% of the arrestees were males, and about 34% were black. From these two percentages one can calculate the proportion of records holders who are white males, black males, and females. The step-by-step calculations are provided below.

(1) Number of Male Record Holders

1,561,100 x .808 = 1,261,369 <sup>23/</sup>

In step 1 we have taken the Bureau of Identification's estimate of the number of persons with records, and multiplied it by the proportion of persons who are likely to be males (.81).

(2) Number of Black Males with Arrest Records

1,261,369 X .337 = 425,081

In step 2 the total number of male record holders is multiplied by the proportion of persons who are likely to be black (.34) to obtain an estimate of the number of black males with records of arrest.

(3) Number of White Males with Arrest Records

1,261,369 - 425,081 = 836,288

Step 3 subtracts the number of black males with records (425,081) the total number of males with records (1,261,369) to obtain the number of white males with records (836,288)

(4) Number of Females with Arrest Records

1,561,100 - 1,261,369 = 299,731

In this step the total number of males with records (1,270,984) is subtracted from the total number of persons with records (1,61,1000) to obtain the number of females with records (299,731).

(5) Number of Black Males with Records in the Labor Force

425,081 X .683 = 290,332

Step 5 adjusts for the labor force participation rate. In this case the number of black males with records (425,081) is multiplied by the labor force participation rate for black males in Illinois for 1980 (.683) to obtain an estimate of the number of black male record holders who are participating in the Illinois labor force (290,332).

(6) Number of White Males with Records in the Labor Force

836,288 X .813 = 679,904

<sup>23/</sup>All figures have been rounded to whole numbers.

Here the number of white males with records (836,288) is multiplied by the labor force participation rate for white males (.813) to obtain an estimate of the number of white males in the Illinois labor force with records (679,904).

(7) Number of Females with Records in the Labor Force

299,731 X .526 = 157,659

In step 7 the number of females with records (299,731) is multiplied by the labor force participation rate for females in Illinois for 1980 (.526) to obtain an estimate of the number of females in the Illinois labor force with records (157,659).

(8) Total Number of Persons with Records in the Labor Force

290,332 + 679,904 + 157,659 = 1,127,895

In the final step, the number of black males in the labor force with records (290,332), the number of white males in the labor force with records (679,904), and the number of females in the labor force with records (157,659) are summed to obtain an estimate of the total number of persons with records in the Illinois labor force in 1980 (1,127,895).

It can be seen that this last figure is the same as the second estimate given in table 4. Other estimates in table 4 were calculated in the same manner. It should be noted that approximately the same result can be obtained by multiplying the number of persons with records of arrest (estimates in table 3) by an overall labor force participation rate of 72.25%.

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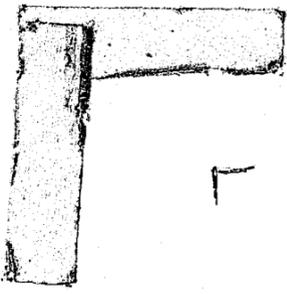
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