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A COMPARISON OF PRISON USE IN ENGLAND, CANADA, WEST GERMANY, AND THE UNITED STATES: A LIMITED TEST OF THE PUNITIVE HYPOTHESIS*

JAMES P. LYNCH**

Cross-national comparisons of crime and criminal justice practices have potential for defining limits of change in criminal justice systems. Unfortunately, the requisites for good cross-national comparisons are quite stringent. Too often such comparisons misrepresent differences in practices or account for observed differences in terms that are too general to serve as a guide for policy. A specific case in point is cross-national comparisons of incarceration rates. A number of studies have concluded that the United States is the most punitive of industrialized nations. Those studies have based their conclusions on the fact that the United States has the highest prison population per thousand.¹ In fact, although the United States has

* This research was conducted under a grant from the Bureau of Justice Statistics (BJS). The opinions expressed in this paper are those of the author and do not necessarily reflect the position of BJS.

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¹ Doleschal, *Rate and Length of Imprisonment: How does the U.S. Compare with the Netherlands, Denmark and Sweden?*, 23 CRIME & DELINQ. 51 (1977); Doleschal, *Fact Sheet on Crime and Criminal Justice in the United States, the Netherlands, Denmark, Sweden, and Great Britain*, Nat'l Council on Crime and Delinq. Info. Center; Waller & Chan, *Prison Use: A Canadian and International Comparison*, 3 CRIM. L. Q. 47 (1975).

the largest per capita prison population, that statistic does not necessarily result from a more punitive policy on the part of its courts. Other factors may more readily explain differences in prison populations.

One such factor is the greater extent to which the United States tends to legislate morality, as seen, for example, in its more comprehensive laws on the criminalization of prostitution, drug use, and other victimless crimes.² Also, the United States has a much higher crime rate than other countries.³ Crimes in the United States are violent or otherwise serious in greater proportion than in other nations. The isolation of these and other competing explanations of observed differences in prison populations and the systematic examination of these alternatives present in other countries provide information specific enough to serve as a guide to policy-making.

This Article is intended to be a model for such specificity. It will reexamine the use of incarceration in several countries, including the United States, and, by introducing a more precise methodology than has been employed in the past, it will control for several of the most obvious competing explanations. The first section of this Article reviews earlier approaches and describes the methodological modifications introduced. The second section presents the new data and the conclusions that they support.

I. REVIEW OF PREVIOUS WORK

Authors of cross-national studies of incarceration too eagerly conclude that a punitive orientation of the courts explains observed differences in the size of prison populations.⁴ Although they were aware of other reasons for variation in the sizes of these prison populations, these authors have not had ready access to the information necessary to test competing explanations.⁵ Even when the necessary information has been available, however, problems in the design of these studies have often resulted in inaccurate characteri-

² See, e.g., N. MORRIS & G. HAWKINS, *THE HONEST POLITICIAN'S GUIDE TO LAW ENFORCEMENT* (1970).

³ BUREAU OF JUSTICE STATISTICS, U.S. DEP'T. OF JUSTICE, *CRIMINAL VICTIMIZATION IN THE UNITED STATES, 1982* (1984); U.S. FED. BUREAU OF INVESTIGATION, *UNIFORM CRIME REPORTS FOR THE UNITED STATES* (1983).

⁴ See Doleschal, *Rate and Length of Imprisonment*, *supra* note 1, at 56; Waller & Chan, *supra* note 1.

⁵ Young, *Influences Upon the Use of Imprisonment: A Review of the Literature*, 25 *HOW. J. CRIM. JUST.* 125, 133 (1986).

In many countries, the comprehensive, representative and detailed statistics on crime and criminal justice required for rigorous comparisons are simply not available routinely. Statistics for many decision points, e.g., sentencing, are often inadequate. Simply obtaining this information is a daunting experience.

zations of differences among countries and the spurious attribution of causality.

Specifically, studies of cross-national incarceration rates have suffered from at least three flaws in research design. First, these studies have confounded the rate of imprisonment with the level of crime in a given country by using the total population rather than the true population at risk of imprisonment, namely, the offenders, in calculating rates. Second, the concept of punitiveness is often vaguely defined, with the result that observed differences in incarceration rates are spuriously attributed to differences in punitiveness. This ambiguity in definition also complicates the identification of specific punitive policies. Third, by using "stock" rather than "flow" designs, the length of sentence has been confounded with rates of imprisonment.

A. THE POPULATION AT RISK

Previous cross-national studies of incarceration have often acknowledged, but have failed to account for, the influence of crime rate on the rate of imprisonment.⁶ The incarceration rate is computed as a simple ratio of prisoners to the total population or to the adult population of the country. This standardizes the rates for variation in the size of populations across countries, but it does not account for the relative propensity of the population to engage in criminal behavior and thereby become eligible for imprisonment. For example, the incarceration rate of England, which has a serious violent crime rate of 219 per 100,000 would be compared to that of the United States, which has a much higher violent crime rate of 555 per 100,000, and where, subsequently, there is a much greater probability that a citizen will be brought before a court and sentenced to some form of incarceration.⁷ One would assume that nations with such radically different crime problems would have quite different incarceration rates even if their sentencing practices were very similar.

B. THE DEFINITION OF PUNITIVENESS

Differences in punitiveness imply more severe responses to similar acts. Studies that attribute differences in the size of prison populations to greater or lesser punitiveness, however, seldom con-

⁶ See Doleschal, *supra* note 1; Waller & Chan, *supra* note 1.

⁷ U.S. FED. BUREAU OF INVESTIGATION, CRIME IN THE U.S. DEPT. OF JUSTICE 43 (1982); GREAT BRITAIN HOME OFFICE, CRIMINAL STATISTICS IN ENGLAND AND WALES, 1983 Her Majesty's Stationery Office, London 32 (1984).

trol for differences in the seriousness of crime or sanctions in each country.⁸ The concept of severity of sanctions is particularly in need of definition in order to delimit the scope of a given comparative study. Severity has many dimensions. At minimum, a distinction should be made between incarceration and other sanctions that do not deprive citizens of their liberty. Incarceration, is a more severe sanction than non-custodial alternatives. The length of the custodial sentence served is also a useful distinction because longer sentences are more severe than shorter ones. The degree of deprivation involved in custodial sentences must also be included as a dimension of severity of sanction because five years in a maximum security institution is more arduous than the same sentence in a minimum security institution.

Most studies of punitiveness do not distinguish the various dimensions of severity.⁹ These distinctions are important, however, for providing specific guidance for reform. It is useful to know, for example, that it is the length of the sentence imposed and not the use of incarceration that distinguishes one country from another. Although it may be impossible to investigate empirically each dimension of severity, keeping these dimensions separate facilitates a clearer analysis of both policy differences among countries and a specific policy's effect on punitiveness. Failing to identify the dimensions of severity in sanctions also contributes to problems in rate estimation discussed below.¹⁰

In assessing punitiveness, it is equally important to standardize for differences in the severity of crimes committed. Countries may have very similar crime rates, although the nature of the crimes committed varies. It would seem inappropriate, for example, to compare the United States with Sweden or the Netherlands because serious violent crimes, particularly weapons offenses, constitute a higher proportion of all registered crimes in the United States than in either Sweden or the Netherlands.¹¹ Therefore, to attribute differences in incarceration rates to punitiveness, one must control for differences in the seriousness of crimes across countries.

C. THE "FLOW" DESIGN

Static or stock studies of incarceration measure the use of imprisonment by the number of prisoners in custody on a given day.

⁸ See Doleschal, *supra* note 4.

⁹ *Id.* See Waller & Chan, *supra* note 1.

¹⁰ See *infra* text accompanying note 6.

¹¹ Steenhuis, Tigges, & Essers, *The Penal Climate in the Netherlands: Sunny or Cloudy?* 23 BRIT. J. OF CRIMINOLOGY 3 (1982).

Flow designs use the number of admissions to prison over a particular unit of time. The static approach is preferred largely because data for prisoners in custody are believed to be more accurate and are certainly more readily available than are admissions or release data in many countries. However, because the probability of an offender being in prison on a given day is a function of the length of his sentence, stock statistics tend to overrepresent more serious offenders with longer sentences. Serious offenders with long sentences also accumulate in prison populations. Therefore, stock studies overestimate the propensity to incarcerate in those countries with higher rates of serious crime. In contrast, flow studies using annual admissions are not affected by the accumulation of more serious offenders. This is not to say that length of sentence is not an important dimension of punitiveness, but, as noted above, it should be treated separately for reasons of clarity. Flow designs permit the separation of the propensity to incarcerate from the length of sentence served and thereby provide a clearer picture of both dimensions of punishment.

In reexamining the relative use of imprisonment cross-nationally, this Article attempts to avoid the pitfalls of earlier studies by focusing on one dimension of punitiveness, by adjusting incarceration rates for the incidence of crime, by restricting the comparisons to incarceration rates for reasonably comparable classes of crime, and by using a flow rather than a stock design.

D. IMPORTANT CONSIDERATIONS IN MAKING CROSS-NATIONAL COMPARISONS

This Article compares the use of incarceration in four industrialized democracies: England, Canada, the Federal Republic of Germany, and the United States. The focus of this Article is the propensity to use incarceration, not other dimensions of punitiveness such as length of stay or degree of deprivation. Comparisons are restricted to a narrow range of serious and reasonably comparable crime classes. Incarceration rates represent the ratio of persons admitted to prison for a particular offense in a given year to the number of persons arrested for that offense in the same year.

1. Focusing on the Propensity to Incarcerate

The analysis in this Article is limited almost exclusively to the investigations of differences in the relative frequency with which countries use incarceration as a sentencing option. Other dimensions of severity of sanction or punitiveness are equally important,

but it is difficult to entertain all of these dimensions simultaneously. Moreover, at the present time, it is easier to measure the propensity to incarcerate than it is to measure other aspects of punitiveness. Subsequent studies will compare countries in terms of the length of custodial sentences served.

2. *Restricting the Range of Criminal Behavior*

The analysis in this Article is limited to classes of crime similar to the index crimes used by the Federal Bureau of Investigation's (FBI): homicide, rape, robbery, aggravated assault, burglary, larceny, and motor vehicle theft.¹² The rates were computed separately for each class of index crime to ensure that the range of behaviors included in the study were comparable across countries.¹³ A listing of the specific offenses included under each category of index crime for each country is presented in Appendix A. Differences in the format of routine statistical reports in the countries studied prohibited comparisons of all types of index crimes across all countries. In some cases, no data were available for specific index crimes in particular countries.¹⁴ In others, several categories were collapsed to conform to the routinely reported classes of crime in a specific country.¹⁵ The comparisons made below employ the most disaggregated crime classes possible.

The restriction of the range of offenses in this way reduces the effects of differences in crime seriousness across countries. It also raises some questions about the generalizability of these findings. It is possible that the findings comparing incarceration for index crimes may not be the same for comparisons of non-index crimes. This concern is reduced somewhat by the fact that, although these

¹² See U.S. FED. BUREAU OF INVESTIGATION, *supra* note 3.

¹³ The crime classes chosen have similar defining characteristics, but the classes' differences in terms of aggravating and mitigating circumstances could affect judgments concerning the seriousness of the crime. The crime class of "robbery," for example, has the same defining characteristics in all of the countries studied. Events in that class must include: theft and violence, or the threat of violence. In this sense, robbery is comparable cross-nationally. Robberies in Germany or the United States, however, may routinely involve greater degrees of threat or violence than robberies in other countries. This kind of intra-class variation in the seriousness of crimes cross-nationally is not assessed in this study.

¹⁴ Police statistics on rape are not routinely published for England and Wales. GREAT BRITAIN HOME OFFICE, CRIME STATISTICS ENGLAND AND WALES 1983 195 (1985). There are no data on persons admitted to Canadian prisons for homicide. DEPT. OF JUSTICE, CANADA, SENTENCING PRACTICES AND TRENDS 37 (1983).

¹⁵ The Federal Republic of Germany does not distinguish burglary from larceny. Consequently, burglary, larceny and motor vehicle theft in England, the United States and Canada were collapsed to form a "Burglary/Theft Category." BUNDESKRIMINAL-STATISTISCHE, POLICTISCHE STATISTISCHE 95-119.

offenses constitute only a small proportion of criminal offenses, they account for a large proportion of the prison population in the countries under study.¹⁶ This factor increases the likelihood that the findings will be an accurate reflection of the differences in incarceration use across countries generally.

3. *Adjusting the Incarceration Rate for Differences in Crime Rates*

Controlling for the effects of the incidence of crime on the incarceration rate is problematic largely because accurate measures of the level of crime are not readily available. More importantly, errors in the estimates of crime rates are not constant across countries. Victimization surveys provide an inclusive estimate of crime, but the variability of surveys across countries complicates their use in comparative studies.¹⁷

The number of persons convicted is the most desirable base for an incarceration rate because it excludes innocent persons. The absence of court data of uniformly high quality cross-nationally, however, precludes the use of convicted persons as a rate base. An incarceration rate based on the number of arrested persons, therefore, appears to be the best means of controlling for crime while minimizing bias for comparative purposes.

Victimization surveys provide the most inclusive estimate of criminal behavior. All of the countries under consideration have a recurring victimization survey.¹⁸ The instrumentation and procedures used by each are very different, however, and these differences can bias cross-national comparisons. For example, the National Crime Survey (NCS), which provides victimization estimates for the United States, differs from the British Crime Survey (BCS) in many ways that affect the estimates of the crime rate in each country.¹⁹ The NCS interviews every member of the household twelve or older, while the BCS is administered to one adult member of the household. Studies have shown that the two interview procedures result in substantially different rates.²⁰ Respondents in the BCS are asked to report crimes that occurred in the past

¹⁶ Inmates admitted for index crimes comprise approximately 72% of the population of state prisons in the United States on any given day. BUREAU OF JUSTICE STATISTICS, U.S. DEP'T OF JUSTICE, *supra* note 3.

¹⁷ *Id.*

¹⁸ See P. MAYHEW, *RESIDENTIAL BURGLARY: A COMPARISON OF THE UNITED STATES, CANADA, AND ENGLAND AND WALES* (1986).

¹⁹ *Id.*

²⁰ Biderman, Cantor & Reiss, *A Quasi-Experimental Analysis of Personal Victimization Reporting by Household Respondents in the National Crime Survey*, PROC. OF AM. STATISTICAL ASS'N. Survey Research Methods Section 516-21 (1982).

twelve months, while the NCS employs a six-month recounting period. Studies have shown that reporting becomes less complete as time passes and that longer reference periods will result in less complete reporting of victimizations.²¹ These and other procedural differences between the surveys make accurate comparisons of crime rates extremely difficult.

The use of victimization surveys to standardize incarceration rates for the incidence of crime is further complicated by the fact that the surveys register victimizations and incidents and the criminal justice system sentences persons. One person can be responsible for many crimes, yet he may be sentenced only once. This can complicate the interpretation of an incarceration rate that has victimizations or victim-reported incidents as a base. Finally, victimization-based rates confound ineffectiveness with punitiveness. Victimization counts include crime incidents in which the offender is never identified and is made the subject of criminal justice proceedings. Consequently, systems that apprehend few criminals but frequently sentence them to incarceration have the same rate as those that apprehend a larger proportion of offenders and sentence fewer to prison. For these reasons, victimization-based incarceration rates are difficult to estimate and are ultimately misleading.

The number of persons convicted for each type of index crime is the most desirable base for an incarceration rate, because it includes only those persons who have been found guilty. Such data provide the most interpretable measure of the relative punitiveness of sentencing practices cross-nationally. Defining the particular point at which conviction occurs in each country, however, is complicated due to the differences in the structure of the criminal justice process. In the United States, for example, prosecutors can decide not to proceed with a case for reasons other than evidentiary strength. Indeed, there is strong evidence to suggest that less serious crimes are less likely to be prosecuted regardless of the evidentiary strength of the case.²² By deciding not to proceed, the prosecutor makes the decision not to incarcerate. In systems such as that of the Federal Republic of Germany, in which prosecutors do not have the same discretion to decline to prosecute, the judge may be confronted with a higher proportion of less serious cases, which

²¹ For discussion of recency bias, see Biderman & Lynch, *Recency Bias in Self-Report Surveys of Victimization*, PROC. OF AM. STATISTICAL ASS'N, Social Statistics Section 31-40 (1981).

²² J. JACOBY, L. MELLON, E. RATLEDGE & S. TURNER, PROSECUTORIAL DECISION-MAKING: A NATIONAL STUDY, U.S. DEPARTMENT OF JUSTICE 38-43 (1982).

results in fewer incarcerations.²³ If the two systems were compared using an incarceration rate based on convicted persons, then Germany would appear less punitive than the United States when, in fact, the two systems may be quite similar if some decisions not to prosecute are viewed as decisions not to incarcerate. Because different actors make the same decisions in different countries, there is no unambiguous choice of decision point for assessing the punitiveness of sentencing practices cross-nationally. Convicted persons may be the most appropriate base for an incarceration rate, but the determination of when conviction occurs in each system is problematic.

For present purposes, an incarceration rate based upon convicted persons cannot presently be computed because there are no comprehensive and routinely collected data on sentencing decisions in either the United States or Canada. In the past five years, the United States Department of Justice's Bureau of Justice Statistics has initiated several programs to build statistical systems for state courts,²⁴ but these programs are in their infancy and do not include a large number of state jurisdictions.²⁵ Although these data are useful, they may not be representative of practices in the nation as a whole. The situation in Canada is very similar to that of the United States. There are also no comprehensive and routinely produced court conviction and sentencing data for Canada as a whole.²⁶ Although individual provinces have good information systems, not all provinces have such systems and there is no uniformity in definitions and procedures.²⁷

²³ Langbien, *Land Without Plea Bargaining: How the Germans Do It*, 78 MICH. L. REV. 204, 210 (1979).

²⁴ K. BROSI, A CROSS-CITY COMPARISON OF FELONY CASE PROCESSING (1979); BUREAU OF JUSTICE STATISTICS, *supra* note 3; M. CUNIFF, FELONY SENTENCING IN 18 LOCAL JURISDICTIONS, (1985)(Special Report, U.S. Bureau of Justice Statistics).

²⁵ In 1984, the Offender-Based Transaction System (OBTS), the largest of the court data bases, included only eight states and one territory. The Prosecutors Management Information System (PROMIS) includes thirty-six jurisdictions, most of which are large urban counties. The National Association of Criminal Justice Planners (NACJP) routinely collects samples of court dispositions in eighteen large urban counties. Although these data sets provide extensive information on court processing, the participating jurisdictions are not a representative sample of the nation. Consequently, these data cannot be used to estimate national trends without substantial adjustment, if at all. BUREAU OF JUSTICE STATISTICS, OFFENDER BASED TRANSACTION STATISTICS 1982, ICPSR, Ann Arbor, Michigan, 1986; K. BROSI, A CROSS-CITY COMPARISON OF FELONY CASE PROCESSING, BUREAU OF JUSTICE STATISTICS (1979); M. CUNIFF, FELONY SENTENCING IN 18 LOCAL JURISDICTIONS, BUREAU OF JUSTICE STATISTICS (1985).

²⁶ DEP'T. OF JUSTICE CANADA, 1 SENTENCING PRACTICES AND TRENDS IN CANADA 2 (1983).

²⁷ At the time of this study, larger provinces such as Ontario and Quebec had very sophisticated information systems. Smaller provinces such as Newfoundland and Prince Edward Island used manual systems that are not very detailed or flexible.

For a variety of reasons, police arrest statistics are the most acceptable of the available means of standardizing incarceration rates for differences in the levels of crime. First, police arrests should vary according to the rate of criminal activity. Second, police arrest information is available for most jurisdictions in all of the countries under study. Third, if arrested persons are used as the base for the incarceration rate, then both the numerator and the denominator will be person-transactions. This component results in a much more straightforward interpretation than if victimization incidents were used. Fourth, an arrest produces a decision by the criminal justice system. Thus, the differences between the number of persons arrested and the number of persons incarcerated in a given time period will be partially a function of the decisions made by the system, rather than situations beyond the control of the system, such as the solvability of crimes.

The desirability of using arrested persons as the base for the incarceration rate rests in part on the assumption that arrest has a reasonably similar meaning cross-nationally. In the United States, for example, the police can arrest when they have probable cause to believe that an individual has committed a crime. In the case of minor offenses not occurring in the presence of the police, the police must present their evidence to the court in order to obtain an arrest warrant. For more serious offenses, the police may arrest without a warrant if there is probable cause. Thus, the police in the United States have considerable discretion not to use their arrest powers when the legal requisites for their use are present.²⁸ The legal limits of arrest are similar in both Britain²⁹ and Canada.³⁰

There does not seem to be a status exactly comparable to arrest in the Federal Republic of Germany. There are two arrest standards: suspects (*Tatverdachtige*) and charged persons (*Anklage*). Suspects are not taken into custody unless there is a clear indication that they will flee the jurisdiction or destroy evidence. The status of suspect indicates that the police have reason to believe that a person has committed a crime. Suspects may not even know that they are suspects. Consequently, the status of suspect in the Federal Republic of Germany is more inclusive than that of arrested persons in other countries.

The status of a charged person, however, is more restrictive than that of an arrested person in other countries. Charged persons

²⁸ D. BLACK, *THE MANNERS AND CUSTOMS OF THE POLICE* 56-59 (1980).

²⁹ L. LEIGH, *POLICE POWERS IN ENGLAND AND WALES* 60-62 (1975).

³⁰ C. GRIFFITHS, J. KLEIN & S. VERDUN-JONES, *CRIMINAL JUSTICE IN CANADA: AN INTRODUCTORY TEXT* 97 (1980).

are those persons who are charged with a crime in a formal judicial proceeding similar to the laying of formal charges by a prosecutor. The actual number of arrested persons lies somewhere in between the number of suspects and the number of charged persons. Although neither status is exactly comparable to arrest, they provide a high and a low estimate of arrested persons that permits the calculation of arrest-based incarceration rates.

II. DEVELOPMENT OF A FLOW DESIGN

As noted above, a flow design describes the sequential processing or flow of persons through the criminal justice system over a given period of time. The flow of persons through the system is usually characterized as a series of transitional probabilities. In this Article, the important considerations are the flow of persons from arrest to imprisonment, and the probability that a person arrested for an offense will be imprisoned. This probability will be used to indicate the relative punitiveness of the countries under study.

Although flow designs have a number of advantages over stock designs, the former also have a number of potential disadvantages. Rather than confounding the length of the sentence with the propensity to incarcerate as stock studies do, flow designs can confuse delay in court processing with the incarceration rate. One hundred percent of all persons arrested for murder, for example, may eventually be incarcerated, but, in a given year, perhaps only one-half of those arrested in that year may have completed court processing to the point of being sentenced. As a result, countries that process cases more slowly will appear to have an artificially low incarceration rate relative to those that are more efficient.

A second source of possible error in flow designs restricted to a subset of crimes results from changes in the charged offense during court processing. Offenders who are arrested for aggravated assault but plead guilty to and are sentenced for simple assault drop out of a flow study that is restricted to index crimes. Because the offender is arrested for an index crime, his arrest will be included in the denominator of the incarceration rate. As a result of his being admitted to prison for simple assault, his admission will be excluded from the numerator, thereby artificially reducing the incarceration rate. If charge reduction practices are reasonably similar across countries, then they should not affect the accuracy of the comparison.

The bias introduced by delay can be ignored if one of two assumptions can be made: that the bias is offsetting from year to year or that the delay in processing felony offenses is fairly constant

across countries. The data to support the latter assumption are not available on an international basis. There is some evidence, however, which suggests that delay effects may be reasonably constant and offsetting from year to year. A simple comparison of the ratio of prison admissions to arrests over time in England and the United States, for example, indicates that this ratio remained reasonably constant over short periods of time, such as five years.³¹ This result suggests a certain stability in the processing of suspects in the criminal justice system over time.

Reduction in charge, however, does present a problem in the use of flow designs. Because the incarceration rate is the ratio of persons admitted to prison for a particular offense to the number of persons arrested for that offense, changes in charge during court processing can radically affect rates. More importantly for comparative purposes, the available evidence on plea bargaining cross-nationally suggests that it cannot be assumed that charge reduction practices are similar in all countries under study.³² Plea bargaining is very prevalent in the United States,³³ is less so in Canada³⁴ and is virtually non-existent in England³⁵ and the Federal Republic of Germany.³⁶ Some adjustment must be made to the United States rates

³¹ In the United States, the ratio of persons admitted to prison for serious crimes to the number of persons arrested for serious crimes remained stable during the period 1970 to 1980. In 1970 the ratio was .17. In 1975, the ratio was .18 and in 1980, it was .195. More recently, the ratio has been less stable. See L. GREENFELD, PRISONERS IN 1986, BUREAU OF JUSTICE STATISTICS (1987). In England and Wales, the ratio of persons admitted to prison for indictable offenses to the number of persons either proceeded against at Magistrates Court or cautioned remained stable for the period 1975 to 1980. During that time it varied from .134 to .143, or about 9%. See GREAT BRITAIN HOME OFFICE, CRIMINAL STATISTICS—ENGLAND AND WALES 1983. Her Majesty's Stationery Office, 87, 110 (tables 5.3 and 6.3) (1984); GREAT BRITAIN HOME OFFICE, PRISONER STATISTICS—ENGLAND AND WALES 1984, Her Majesty's Stationery Office, 16-17 (1985).

³² C. GRIFFITHS, J. KLEIN, AND S. VERDUN-JONES, CRIMINAL JUSTICE IN CANADA: AN INTRODUCTORY TEXT 97 (1980); K. BROSI, *supra* note 24; Langbien, *supra* note 23.

³³ K. BROSI, *supra* note 24; VERA INSTITUTE OF JUSTICE, FELONY ARRESTS: THEIR PROSECUTION AND DISPOSITION IN NEW YORK CITY'S COURTS 13 (1978).

³⁴ See, e.g., C. GRIFFITHS, J. KLEIN & S. VERDUN-JONES, *supra* note 30, at 159-64. There is very little comprehensive data on plea bargaining in Canada. Several studies of local jurisdictions suggest that the rate of plea bargaining for indictable offenses is between twenty and thirty percent. There is no information presented in the quoted source on the proportion of the negotiations that involve charge reduction as opposed to count or sentence reduction. It would be very difficult to make an adjustment with the information on hand. Consequently, for purposes of this Article, it is assumed that there is virtually no charge reduction in Canada. This assumption causes an underestimation of the incarceration rate for most index offenses and is a conservative test of the assertion that the United States has higher incarceration rates than Canada.

³⁵ Sanders & Cole, *The Prosecution of Weak Cases in England and Wales*, 7 CRIM. JUST. REV. 23 (1982); Thomas, *Sentencing in England*, 42 MD. L. REV. 90 (1983).

³⁶ See, e.g., Langbien, *supra* note 23; Weigend, *Sentencing in Germany*, 42 MD. L. REV. 37 (1983).

in order to correct for the differences in the prevalence of charge reduction across countries.

A. COMPUTATION OF INCARCERATION RATES

The mechanics of computing incarceration rates is simple in countries such as the Federal Republic of Germany and England because statistics on crime and prison admissions for the entire nation are collected centrally. As a result, more jurisdictions report routinely and there is more uniformity in definitions and collection procedures. Rate computation is, therefore, simply a matter of locating the appropriate statistics. In highly decentralized systems, such as those in the United States and Canada, the responsibility for collecting crime and prison data is shared more evenly by the federal and state or provincial governments. Not all jurisdictions report routinely and definitions and procedures vary. It is often necessary to make adjustments to the data in order to correct for information gaps and non-uniformities in collection. Because of their importance to this investigation, the mechanics of rate computation for each country are described in great detail in Appendix B.

B. PRESENTATION OF THE DATA

The foregoing discussion describes several of the shortcomings of population-based stock incarceration rates and presents some of the advantages of arrest-based flow rates. Although stock rates can be misleading for assessing the relative punitiveness of sentencing practices, comparisons of various stock and flow rates can be useful in identifying the factors affecting the size of prison populations. The population-based stock rate, for example, can be helpful in comparing the use of incarceration while standardizing for differences in the size of the populations in the countries studied. A flow rate which divides admissions to prison in a given year by the population not only holds differences in the population constant, but does so also for the effects of differences in sentence length on the prison population.

Comparisons of stock and flow rates based upon population provide some indication of the contribution of sentence length to differences in the prison population across countries. Similarly, flow rates based upon arrest in a given year standardize for both the effects of sentence length and differences in crime across countries. Comparing population-based flow rates with arrest-based flow rates indicates the importance of differences in crime for determining the size of prison populations. Tables 1, 2 and 3 present stock and flow

rates for four countries and these offenses most comparably defined across countries.

On the basis of population-based stock rates, the United States is much more likely to incarcerate for violent offenses than either England or the Federal Republic of Germany. In the case of homicide, the United States incarcerates 7.5 times more frequently than England and 5.3 times more frequently than the Federal Republic of Germany. The relative propensity to incarcerate is similar for robbery; the rate for the United States is 8.7 times that of England and 4.7 times that of the Federal Republic of Germany. Differences in the rates are somewhat less for property crimes. For burglary, the rate in England is approximately 90% that of the United States. In the larceny/theft category, which combines burglary, larceny, and motor vehicle theft, the incarceration rate for the United States is roughly twice that of the Federal Republic Germany and England.

TABLE 1
POPULATION-BASED STOCK INCARCERATION RATES PER THOUSAND
BY COUNTRY AND OFFENSE

Offense	Country			
	1982 USA	1983 England*	1980 Canada	1984 West Germany
Homicide	.309	.041	NA**	.057
Robbery	.461	.051	NA**	.099
Burglary	.37	.21	NA**	NA***
Larceny/Theft	.565	.50	NA**	.267

* Includes Wales.

** National statistics on prisoners by admission charge are not available for Canada.

*** Germany does not have a crime class exactly comparable to burglary. Burglary is included in the Larceny/Theft category.

Little change occurs when population-based flow rates are used to compare countries. For homicide and robbery, the United States has incarceration rates many times greater than those of England or the Federal Republic of Germany. The incarceration rate for robbery in Canada, however, is not greatly different from that of the United States. Again, the differences in rates across countries are less for property crimes than for crimes of violence. The United States incarceration rate for burglary is 50% greater than that of England, but is quite similar to that of Canada. The incarceration rate for larceny/theft in the United States is about 65% greater than the rate in England. The rate in Canada is, again, very similar to the

United States incarceration rate. The Federal Republic of Germany's incarceration rate for larceny/theft is approximately 16% of the rate in the United States and 29% of the rate in England.

TABLE 2
POPULATION-BASED FLOW INCARCERATION RATES PER THOUSAND
BY COUNTRY AND OFFENSE

Offense	Country			
	1982 USA	1983 England	1980 Canada	1984 West Germany
Homicide	.070	.007	NA*	.012
Robbery	.268	.043	.181	.03
Burglary	.537	.369	.606	NA**
Larceny/Theft	1.17	.706	1.16	.210

* Data on admissions to provincial institutions were not available on a national basis.

** Germany does not report data on a class of crime exactly the same as burglary. Burglary is included in the Larceny/Theft class.

Flow rates based upon arrest show a somewhat different pattern. The probability of incarceration given arrest is roughly the same for violent offenses in the United States, England, and Canada, but England has a somewhat lower rate for homicide. Essentially the same is true for burglary and for larceny/theft, which is the more inclusive class of property crime. With the exception of homicide, the rates for both violent and property crime are still lower in the Federal Republic of Germany than they are in other countries. The rate for robbery is approximately one-half of that in the United States, England, and Canada. For the larceny/thefts, the incarceration rate in the Federal Republic of Germany is approximately one-third that of the United States and more than one-half that of England and Canada.

TABLE 3
ARREST-BASED INCARCERATION RATES BY COUNTRY AND OFFENSE

Offense	Country			
	1982 USA	1983 England	1980 Canada	1984 West Germany***
Homicide	.706	.636	NA*	.766
Robbery	.364	.388	.414	.215
Burglary	.213	.219	.140	NA**
Larceny/Theft	.118	.093	.095	.042

* Data on admissions to Provincial institutions was not readily available on a national basis.

** Germany does not report data on a class of crime exactly the same as burglary. Burglary is included in the Larceny/Theft class.

*** The rates reported here are the average of the high estimates that use charged persons as the base and the low estimates that have suspects as the denominator. The range for each offense is reported below:

	High Estimate	Low Estimate
Homicide	81.6	71.6
Robbery	30.5	12.5
Larceny/Theft	5.5	2.9

C. DISCUSSION

Cross-national studies of incarceration suggest the limits of reform. Countries that maintain social order with minimal use of severe punishments such as imprisonment can serve as models for more punitive countries. Comparative studies identify countries that incarcerate less frequently with other types of practices and begin to eliminate competing explanations for why this occurs. Eventually, the procedures and practices which affect the use of incarceration can be evaluated for their transferability across countries.

2. *Raising Some Questions*

To a large extent, perceptions of the relative punitiveness of sentencing practices in the United States are shaped by cross-national comparisons of stock incarceration rates that control for little else than differences in population size. These comparisons have led to the somewhat misguided likening of criminal justice practices in the United States to those of notoriously repressive countries such as South Africa and the Soviet Union.³⁷ On the basis of these stock rates, other industrialized democracies and especially coun-

³⁷ Doleschal, *supra* note 4, at 56; Waller & Chan *supra* note 1, at 18.

tries in Western Europe appear to use incarceration much less frequently than the United States. Subsequently, these countries have been viewed as examples of criminal justice policies that could be adopted in the United States.³⁸ Critics of these comparisons have objected that observed differences in stock rates are due to the greater prevalence of crime in the United States relative to the industrialized democratic European countries.³⁹ This Article supports such criticism. When the range of crimes examined is made more comparable in terms of seriousness and when the rates are standardized for differences in the level of crime cross-nationally, the extreme differences in the use of incarceration between the United States and several other Western democracies are lessened considerably and, in some cases, disappear. To a large extent, observed differences in stock incarceration rates cross-nationally are due to differences in the types and levels of crime across countries.

The findings presented above also raise some doubts about the advisability of trying to compare national criminal justice policies on a single dimension of seriousness. Countries appear to sentence offenders differently for different types of offenses, instead of consistently sentencing all offenders more or less harshly regardless of the presenting offense. Comparisons of sentencing practices cross-nationally should, therefore, specify the offenses for which the comparisons apply.

The analysis in this Article attempts to control for some of the most obvious alternatives to punitiveness in explaining the observed differences in prison populations. Subsequent tests of the punitiveness hypothesis should include other factors that could affect sentencing decisions. Specifically, some attention should be given to differences in aggravating and mitigating circumstances of crimes that are not distinguished in the broad and heterogeneous index crime classifications. There is good reason to believe, for example, that robberies in the United States involve firearms more frequently than robberies in other countries. Approximately 40% of the robberies known to the police in the United States involve firearms.⁴⁰

³⁸ Steenhuis, Tigges & Essers, *supra* note 11, at 1, 13; E.H. Johnson, Why Does Holland Avoid Imprisonment? Guide for a Roundtable Discussion (August 29, 1979)(American Sociological Association Meeting, Boston); D. Cohen, *Punishment: New Trends in Holland*, 2 MISDAD, STRAF EN HERVORMING; L.H.C. Hulsman, *The Relative Mildness of the Dutch Criminal Justice System: An Attempt at Analysis* in INTRODUCTION TO DUTCH LAW FOR FOREIGN LAWYERS, D.C. FOKKEMA, W. CHAUS, E. H. HANDIUS et. al 373-77 (1978).

³⁹ Steenhuis, Tigges & Essers, *supra* note 11.

⁴⁰ U.S. FED. BUREAU OF INVESTIGATION, *supra* note 3, at 18.

The rates in Canada (29%),⁴¹ the Federal Republic of Germany (12%),⁴² and England (9%)⁴³ are much lower. If this aggravating circumstance were held constant, the United States incarceration rate for robbery would perhaps be considerably lower than that of other countries for crimes of comparable seriousness.

Systematic differences in the criminal history of defendants across countries may also account for differences in prison use. If defendants in the United States generally have lengthier or more severe prior criminal histories than defendants in other countries, then differences in the use of incarceration may disappear or change direction if criminal histories are held constant. Subsequent explorations of cross-national differences in the use of incarceration should attempt to describe and perhaps control for each of these aggravating and mitigating circumstances that, in turn, could explain the observed differences.

The assumptions underlying this comparison of incarceration rates may overstate the use of incarceration in the United States relative to other countries. Specifically, this study assumes that charged offense reduction occurs only in the United States and not in the other countries studied. Consequently, the United States rates were adjusted—generally upward—for charge reduction; the rates for the other countries were not adjusted. There is good reason to believe that charge reduction is more prevalent in the United States than in the other countries,⁴⁴ but some charge reduction undoubtedly occurs in England, Canada, and the Federal Republic of Germany. Because the data necessary to make appropriate adjustments in each country are not readily available, the most conservative assumption, namely, that there is no charge reduction outside of the United States, was chosen. Given the findings, this conservative assumption strengthens the conclusion that sentencing practices in the United States are not more punitive than those of other industrialized democracies. This assumption, however, may result in an overestimate of incarceration rates for the United States, and it

⁴¹ CANADIAN CENTER FOR JUSTICE STATISTICS, *CANADIAN CRIME STATISTICS* 2-9 (1985).

⁴² R. Teske, *The Involvement of Firearms in Selected Crime Categories: The Federal Republic of Germany 1976-1985*, January 20, 1987 (unpublished table).

⁴³ England's greater propensity to use fines is demonstrated in GREAT BRITAIN HOME OFFICE, *CRIMINAL STATISTICS ENGLAND AND WALES, 1983* 158-59 (table 7.14) (1984)(command paper no. 9349). Approximately 45% of all persons sentenced for violations in England in 1983 were fined and not incarcerated.

⁴⁴ See VERA INSTITUTE OF JUSTICE, *supra* note 33, at 159-64; K. BROSI, *supra* note 24; C. GRIFFITHS, J. KLEIN & S. VERDUN-JONES, *supra* note 32; Thomas, *supra* note 35, at 90; Sanders & Cole, *supra* note 35; Langbien, *supra* note 23, at 205.

may be inappropriate to use these data to estimate the magnitude of the differences between countries.

3. *Explaining Persistent Differences in Prison Use*

Differences in the level of crime, however, do not entirely explain observed differences in the use of imprisonment. Germany appears to use incarceration much less frequently than the United States, even when the arrest-based rates are employed. This finding again raises the question of whether incarceration needs to be used as frequently as it is in the United States. It also gives direction to future research. The relative similarity of incarceration rates for countries with a common law legal tradition and the markedly lower rate for the only code country included in the analysis, suggests that future comparative studies should focus on the differences between these two types of systems to explain the radically different use of incarceration. Perhaps the differences observed in this study between common law and code countries are due to misinterpretations of the procedures, definitions, or statistics used in the code countries, rather than a real difference in practice. It is also possible that the differences are unique to Germany and are not generalizable to other code countries.

The similarities of arrest-based rates in common law countries also suggest that substantial and pervasive differences in incarceration rates across countries are probably not a result of minor differences in practice. England, for example, makes greater use of fines than does the United States, but this factor does not seem to contribute to an appreciably lower incarceration rate, at least not for violent crimes.⁴⁵

Large differences between the countries in the use of incarceration are more likely a result of major differences in the organization of the criminal justice system and the role that the justice system plays with respect to other institutions in the maintenance of social order. One could argue, for example, that the need for a response by the criminal justice system will be much less in countries that fill their need for marginal labor with guest workers as opposed to citizens. Guest workers can be deported rather than incarcerated. The ranks of guest workers can be thinned by deportation as the economy slows, and this fact may preempt both crime and a justice system response.

Future research exploring the differences in incarceration rates between countries with common law and criminal code traditions

⁴⁵ BUREAU OF JUSTICE STATISTICS, DEP'T. OF JUSTICE (1986).

should emphasize the relative contributions of several differences between the two traditions, such as the differences in the role that criminal justice systems play relative to other institutions in society; the differences in the major components of the justice process such as arrest, guilt determination, and sentencing; and the differences in definitions and statistics that may result in artificial differences in rates. By distinguishing these general classes of explanatory variables, researchers will be in a better position to identify differences in criminal justice policy that can reduce the size of prison populations and that can be easily transferred to a new cultural context.

4. *Facilitating Cross-National Research*

One of the major obstacles to useful cross-national research in crime and criminal justice is the lack of uniformity in definitions and statistics. Given the problems of ensuring uniformity in nations with federal systems such as the United States or Canada, it is foolish to immediately expect more uniformity in definitions and statistics cross-nationally. Uniformity flows from a perception of need. The perception of need may result from an increase in the volume of cross-national research.

In the short run, several modest steps would facilitate more and higher quality cross-national research on criminal justice practices. First, the assembling of some form of compendium of criminal justice and related statistics would reduce the time and effort required to do cross-national comparisons.⁴⁶ This compendium should include a brief description of the criminal justice system in the respective countries, a listing of major statistical sources, and a short bibliography containing explanations of these systems, as well as the substantive and methodological work done with the statistical data.

If the reception of this initial document indicates interest, a more elaborate version might include excerpts from these statistical reports in a format similar to that of the *Sourcebook of Criminal Justice*,⁴⁷ as well as a list of contacts who can give advice on the use of the data. Initially restricting the compendium to industrialized democracies would maximize comparability and minimize effort. Although this aid to research will not directly encourage uniformity

⁴⁶ There are a number of compendia of international statistics, but they emphasize economic indicators and give short shrift to crime and criminal justice. A collection that emphasizes crime and criminal justice statistics is required. United Nations, *Demographic Yearbook*, United Nations, UNESCO, *Statistical Yearbook*, International Monetary Fund, *Governmental Finance Statistics Yearbook*.

⁴⁷ BUREAU OF JUSTICE STATISTICS, U.S. DEP'T. OF JUSTICE (1986).

in definitions and statistics, it would encourage more researchers to identify those areas in which comparability may be a problem.

A second and more immediate step towards facilitating cross-national research would be the development of a functional, as opposed to an organizational or positional, description of national criminal justice systems. The similarity of functions across systems is greater than the similarity of actors who perform those functions. In countries that permit a great deal of prosecutorial discretion, for example, the prosecutor may perform a function more similar to that of a magistrate in systems that severely restrict prosecutorial discretion. Police who also direct prosecution may be more similar to prosecutors in systems in which there is a separation of prosecution and the police.

Researchers can spend a great deal of time establishing equivalency across systems, and their knowledge may never be circulated in a fashion that would help others interested in accurate cross-national comparisons. In the meantime, inappropriate comparisons will be made that contribute to confusion rather than understanding. A document detailing the functional equivalency of actors in criminal justice systems cross-nationally constitutes a useful first step in producing such a compendium.

Third, some immediate steps could be taken to obtain, at low cost, a reasonably comparable, but limited, set of indicators of crime and criminal justice practices. These steps would emphasize technologies that are least encumbered by bureaucratic and political restraints. Police, courts, and correctional agencies generally collect statistics as part of an on-going service system, the main purpose of which is not the gathering of statistical data. Consequently, gaining the cooperation of these systems in developing and adopting uniform procedures and definitions is possible only to the extent that such behavior facilitates, or at least does not disrupt, the main objectives of the organization.

Such propitious circumstances seldom occur. In contrast, the sole purpose of vehicles such as victimization surveys is the collection of statistical data. The political problems of gaining uniformity in definitions and procedures are less severe. Small-scale victimization surveys are relatively inexpensive, and a reasonably uniform instrument could be administered under the auspices of a multinational organization such as the United Nations. This survey could be conducted independently of the host country, but with its approval and support. The resulting data would give a limited but comparable picture of the level of crime and police reaction cross-nationally. This data would be useful in encouraging cross-national

research on crime and criminal justice. Disseminating this research may generate the interest necessary for more ambitious efforts toward building sets of comparable statistics for cross-national research.

Finally, highly decentralized countries like Canada and the United States should take some steps to improve nationally representative statistics. Countries with political and administrative decentralization have greater difficulty obtaining the cooperation of all jurisdictions in collecting criminal justice statistics. Some sub-national jurisdictions refuse to submit statistics,⁴⁸ and others refuse to conform to uniform procedures for collection and submission.⁴⁹ Recently, however, these countries have employed federally-sponsored data collections using systematic samples of jurisdictions in order to get high quality, nationally representative statistics. This approach has worked well. It tends, however, to be problem-specific or issue-specific rather than systemic, in its focus. As a result, there is information on only some parts of the criminal justice system. In some cases, the information from two or more of these sample-based data collections will be different, even contradictory. Greater coordination of these sample-based efforts would provide data on the criminal justice system as a whole.

A first step in this process involves the identification of sample-based systems and the comparison of them to the information needs of the system as a whole in order to find gaps and redundancies. Second, existing data collections could be coordinated and sources of inconsistency explained. The drawing of samples for data collection such that they overlap, and the comparing of the estimates from overlapping data collections could identify errors. If such inconsistencies appear, attempts should be made to explain them. With the appropriate level of coordination, a system of recurring sample-based data collections could provide internally consistent and nationally representative information on all aspects of the criminal justice system.

⁴⁸ For a brief period in the mid-seventies Canada published court statistics, but Alberta and Quebec did not contribute routinely. Ultimately, the collection of court statistics was suspended.

⁴⁹ The National Juvenile Court Data Archive collects data on cases in the juvenile courts throughout the nation. This longstanding data system only includes complete data on courts that serve about 61% of the juvenile population in the United States. Most of the courts that do not participate cannot provide the data in the format required. For a description of the Archive and its problems, see J. LYNCH, B. ALLEN-HAGAN & S. LINDGREN *JUVENILE JUSTICE STATISTICS: AN AGENDA FOR ACTION* 53-60 (1987).

APPENDIX A **CHARGES BY COUNTRY**

USA	England	Country Canada	West Germany
Murder	Murder	Murder	Mord (212)
Manslaughter	Manslaughter	Manslaughter	Totschlag (213,211,216)
	Infanticide	Infanticide	
Rape	Rape	Rape	Vergewaltigung (177)
Robbery	Robbery	Robbery with	Raub
	Assault with intent	Firearm	(249,250,252,255,316a)
	to rob	Robbery with other	
		weapon	
		Other Robbery	
Aggravated	Wounding or	Wounding	Korperverletzung
Assault	endangering	Bodily harm	(223a-224,225,227,229)
	Other wounding		
Burglary	Burglary in a	Breaking and	Diebstahl unter
	dwelling	entering	erschwerenden
	Aggravated		Umstanden (243,244)*
	burglary in a		
	dwelling		
	Burglary in othr.		
	bldg		
	Aggravated		
	burglary in other		
	bldg.		
Larceny	Theft from a	Theft > 200	Diebstahl ohne
	person	Theft < 200	erschwerende Umstanden
	Theft in a dwelling		(242,247,248a-c)*
	Theft by an		
	employee		
	Theft from mail		
	Shoplifting		
	Theft from a		
	machine		
	Theft from a		
	vehicle		
	Other theft		
Motor Vehicle	Theft or	Theft-motor vehicle	
theft	unauthorized taking		
	of a motor vehicle		

* The Federal Republic does not have classes of crime exactly comparable to burglary, larceny and motor vehicle theft. Other researchers have suggested using a broader category of larceny/theft which does not distinguish between the three subclasses.⁵⁰

⁵⁰ Teske & Arnold, *Comparison of the Criminal Statistics of the United States and the Federal Republic of Germany*, 10 J. CRIM. JUST. 359, 362 (1982).

APPENDIX B

THE MECHANICS OF RATE COMPUTATION

I. ARREST-BASED FLOW RATES

A. RATE COMPUTATION FOR THE UNITED STATES

Computing incarceration flow rates for the United States is complicated both by the decentralized nature of the government system and by the need to adjust for the prevalence of charge reduction. The responsibility for corrections in the United States is shared by the local, state, and federal governments. These three levels of government are not included in a single unified statistical reporting system. Consequently, the numerator of the incarceration rate must be adjusted to include admissions to local jails, as well as admissions to state and federal prisons. There is also a second set of adjustments to correct for charge-reduction bias. This Article presents the rate computation for the United States in three phases: the derivation of the simple incarceration rate, the correction of the rate for the inclusion of admissions to local jails, and the adjustment to correct for charge-reduction bias. Both adjustments have some error associated with them.

1. *The Simple Incarceration Rate*

The simple incarceration rate refers to the ratio of persons admitted to state prisons for a particular index offense in a given year to the number of persons arrested for that offense in that year. The denominator of this rate was obtained from Table 23 of *Crime in the United States*⁵¹ and represents an estimate of the number of persons arrested for specific crimes in the United States in a given year. This estimate is based on reports from departments serving 81% of the population that are weighted by size to reflect the total national population. The numerator was obtained from estimates of admissions to state prison⁵² and from estimates of the proportion of admissions to prison for a particular type of crime as indicated in *Prison Admissions and Releases, 1982*.⁵³ The estimates of total admissions were multiplied by the proportion of admissions for a particular type of crime to obtain an estimate of the number of admissions

⁵¹ FEDERAL BUREAU OF INVESTIGATION, DEP'T. OF JUSTICE, *CRIME IN THE U.S.* 167 (1982).

⁵² Admissions include only new court commitments and not persons readmitted to prison for parole violations and the like.

⁵³ BUREAU OF JUSTICE STATISTICS, U.S. DEP'T. OF JUSTICE, *PRISON ADMISSIONS AND RELEASES, 1982* 10 (1985).

for a particular year. Admissions to federal institutions for each index crime were added to this estimate of total admissions.⁵⁴

2. *The Jail Correction*

This simple incarceration rate is an underestimation of the probability that a person arrested for a specific offense will be imprisoned because it excludes persons admitted to serve sentences in jails, rather than state prisons. To correct for this, the number of persons serving sentences in jails for specific index offenses was estimated and was added to the numerator of the rates. The estimates were obtained in two steps. First, we estimated the proportion of admissions to jails constituted by admissions under sentence for each specific index crime. This was done with the *Survey of Jail Inmates*, which is a cross-sectional survey of a sample of inmates.⁵⁵ Because the probability of selection in a cross-sectional survey is a function of sentence length, the survey will overestimate the proportion of prisoners serving sentences for index crimes. To avoid this problem, the sample was separated into cohorts according to the time between admission and interview. The least biased estimate of the proportion serving a sentence for a particular crime can be obtained from the cohort with the shortest time period between admission and interview, namely, one day. This method is undesirable because it decreases bias at the expense of reliability. The number of persons interviewed one day or less after their admission is too small to afford a reliable estimate of the proportion of jail admissions under sentence for a particular crime.

In order to obtain higher reliability, estimates of the parameter were made using increasingly longer intervals between admission and interview. These estimates were plotted according to the length of the interval between admission and interview. A curve was fit according to these estimates and the curve was extrapolated to the point where the interval between admission and interview was equal to zero. The resulting parameter was used as an estimate of the proportion of admissions to serve sentences for a particular index crime.

The second step involved estimating the number of admissions to jails in a given year. This was done in two ways. The first method used the number of inmates interviewed within one day of their ad-

⁵⁴ The information on admissions to Federal prisons was taken from BUREAU OF JUSTICE STATISTICS, U. S. DEP'T. OF JUSTICE, *THE SOURCE BOOK OF CRIMINAL JUSTICE STATISTICS*, 1983 586 (table 6.40) (1984).

⁵⁵ These data are not published but are available from the Institute for Political and Social Research (ICPSR) at the University of Michigan.

mission in the *Survey of Jail Inmates*, weighted to be representative of the population of jail inmates. This number was multiplied by 365 to obtain an estimate of jail admissions for the year. A second method for estimating jail admissions was based upon the National Prisoners Statistics (NPS)⁵⁶ data on admissions and information from the Offender Based Transaction System (OBTS).⁵⁷ The latter was used to obtain an estimate of the ratio of persons admitted to jail as opposed to prison in a given year. The NPS estimate of admissions was multiplied by this ratio to obtain an estimate of persons admitted to jail for the relevant offenses. The *Survey*-based estimate was 1,350,856 admissions to jail annually for index crimes and the OBTS-based estimate was 2,000,000. Two sets of jail corrections were computed using these two different estimates of the jail population. In order to provide a more stringent test of the relative punitiveness of United States sentencing practices, the larger of the two estimates was used.

The estimate of the proportion of jail admissions serving a sentence for an index crime was multiplied by the estimates of the number of admissions to jails to obtain the jail correction that was added to the numerator of each rate. The jail correction factors are presented in Tables A and B by type of crime and estimation method.

TABLE A
ESTIMATED NUMBER OF PERSONS SERVING SENTENCES IN LOCAL
JAILS FOR INDEX CRIMES AND COMPONENTS OF THE ESTIMATES BY
OFFENSE: COMPUTED USING OBTS-BASED ESTIMATE OF JAIL
POPULATION.

<u>Offense</u>	<u>Component of the Estimate</u>		
	Proportion of Admissions Serving Sentence	Estimate of Admissions to Jail	Estimate of Jail Correction
Homicide	.00135	2000000	2715
Rape	.00057	2000000	1148
Robbery	.008	2000000	16084
Aggravated Assault	.011	2000000	22977
Burglary	.024	2000000	48043
Larceny	.065	2000000	131597
MVT	.0003	2000000	627

⁵⁶ BUREAU OF JUSTICE STATISTICS, ADMISSIONS AND RELEASES 5 (1985).

⁵⁷ The OBTS data are available at (ICPSR), *supra* note 55. A description of OBTS is available in *Offender-Based Transaction Statistics 1982*, (ICPSR) (1986).

TABLE B
ESTIMATED NUMBER OF PERSONS SERVING SENTENCES IN LOCAL
JAILS FOR INDEX CRIMES AND COMPONENTS OF THE ESTIMATES BY
OFFENSE: COMPUTED USING SURVEY OF JAIL INMATES-BASED
ESTIMATE OF JAIL POPULATION.

<u>Offense</u>	<u>Component of the Estimate</u>		
	Proportion of Admissions Serving Sentence	Estimate of Admissions to Jail	Estimate of Jail Correction
Homicide	.00135	1350000	1824
Rape	.00057	1350000	770
Robbery	.008	1350000	10807
Aggravated Assault	.011	1350000	14860
Burglary	.024	1350000	32421
Larceny	.065	1350000	87806
MVT	.0003	1350000	2702

3. The Charge Reduction Correction

Charge reduction refers to the practice of changing the original or arrest charge to a less serious charge for which the offender is prosecuted and ultimately sentenced. The charge may be reduced for a variety of reasons. First, the police may have arrested the offender on the wrong charge. Second, the evidence that was sufficient for arrest may not have been sufficient for prosecution. Third, the reductions in charge may have been exchanged for a guilty plea or for information that would help in other prosecutions. Whatever the reason, charges are changed routinely, and they are generally reduced; but, it is possible for charges to be changed to more serious crimes, as in the case in which a robbery victim dies and the robbery charge is changed to murder. Changes in charge, regardless of their direction, can affect the accuracy of the incarceration rates used here. If charges are reduced, then the ratio of admissions to arrests will understate the incarceration rate. For example, persons who are arrested for homicide and who are ultimately incarcerated for simple assault will figure into the denominator of the incarceration rate for homicide, but they will not enter into the numerator because they were imprisoned for another crime. Conversely, a person arrested for robbery who is ultimately sentenced for homicide will result in an overcount of admissions for homicide and an undercount for robbery. The net effect of changes in charge

will be the difference between charge increases and charge reductions.

The OBTS data for eight states were used to estimate the extent of charge reduction and to compute an adjustment factor.⁵⁸ OBTS data includes all cases that are disposed of in state courts in a given calendar year. The information collected on each case includes the arrest charge, the disposition charge, and the type of sentence imposed. With this information, it was possible to determine the proportion of persons arrested for a particular charge who were incarcerated for that charge or for any other charge. For purposes of adjusting the incarceration rate, the changes in charge that do not result in incarceration were not examined. Table C presents the proportion of persons incarcerated by arrest charge and disposition charge. It is clear that changes in charge are quite prevalent in United States criminal processing. Moreover, charge reductions are more frequent than increases in charge for the more serious crimes of homicide, rape, robbery, aggravated assault, and burglary. Charge increases are slightly more prevalent for larceny and motor vehicle theft. This result makes sense because charge reductions for these lesser crimes are less likely to result in incarceration of any sort.

The data in Table C can be combined with NPS and the jail correction information to estimate a charge reduction correction. The NPS data shows the number of admissions to prison occurring in a given year for each offense. The jail correction estimated above indicates the number of persons admitted under sentence for each index crime. Table C indicates the proportion of persons incarcerated for a given offense who were arrested for another. By multiplying this proportion by the sum of the NPS estimate and the jail correction estimate, the number of persons arrested for homicide who were ultimately incarcerated for robbery is obtained.

In situations in which persons have been incarcerated for a charge less serious than the arrest charge, the estimate of the number of persons so incarcerated should be subtracted from the numerator of the less serious charge and added to the numerator of the rate for the more serious charge. In the case of persons being incarcerated for a more serious charge than the arrest charge, the number of person should be subtracted from the numerator of the more serious charge and added to the numerator of the lesser

⁵⁸ At the time this Article was published, OBTS data was available for the following states: California, New York, Ohio, Pennsylvania, Utah, Virginia, and Rhode Island, as well as the Virgin Islands.

charge. The difference between the number of charge increases and the number of charge decreases constitutes the charge reduction correction that will be added to the numerator of the rate. The estimates of admissions to incarceration, as well as the jail and charge reduction corrections are presented in Table D.

TABLE C
ARREST OFFENSE BY DISPOSITION OFFENSE FOR PERSONS
SENTENCED TO INCARCERATION FROM OBTS DATA, 1982:
PROPORTION OF OFFENDERS SENTENCED ARRESTED FOR A SPECIFIC
CHARGE

Arrest Offense	Disposition Offense							Other Offense
	Homicide	Rape	Robbery	Aggravated Assault	Burglary	Larceny	MVT	
Homicide	.925	.004	.022	.04	.001	.0004	.001	.008
Rape	.001	.791	.006	.024	.003	.0006	.001	.009
Robbery	.007	.012	.919	.082	.016	.084	.029	.027
Aggravated Assault	.009	.007	.003	.665	.007	.005	.009	.059
Burglary	.002	.009	.008	.008	.927	.204	.045	.091
Larceny	.0003	.0009	.006	.001	.016	.595	.155	.039
MVT	.0	.0	.0007	.0002	.003	.013	.639	.009
Other	.053	.173	.034	.178	.026	.095	.11	.755
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

TABLE D
ESTIMATES OF ADMISSIONS TO INCARCERATION AND RATE
COMPONENTS BY OFFENSE: JAIL CORRECTION BASED ON OBTS
ESTIMATE OF TOTAL JAIL ADMISSIONS

Offense	Admissions to State and Federal Institutions 1982	Components of the Rate		Total Admissions
		Jail Correction	Charge Reduction Corrections	
Homicide	11447	2715	1945	16107
Rape	4303	1148	767	6218
Robbery	30077	16084	15904	62065
Aggravated Assault	11032	22977	- 2135	31874
Burglary	44889	48043	31479	124411
Larceny	18534	131597	-11737	138394
MVT	3228	4000	1914	9142

The total admissions presented in Table D and Table E were divided by the arrest data from the Uniform Crime Reports

referenced earlier⁵⁹ to obtain the arrest-based incarceration rates for each type of index crime. Because there was no evidence that the rates in Table D were superior to those in Table E or vice versa, the rates were averaged to produce an estimate of the arrest-based incarceration rate for each type of crime.

TABLE E
ESTIMATES OF ADMISSIONS TO INCARCERATION AND RATE
COMPONENTS BY OFFENSE FOR THE UNITED STATES: JAIL
CORRECTION BASED ON JAIL INMATE SURVEY ESTIMATE OF
TOTAL JAIL ADMISSIONS

Offense	Admissions to State and Federal Institutions 1982	Components of the Rate		Total Admissions
		Jail Correction	Charge Reduction Corrections	
Homicide	11447	1824	1455	14726
Rape	4304	770	539	5612
Robbery	30077	10807	11544	52428
Aggravated Assault	11032	14860	-985	24902
Burglary	44889	32421	23054	100364
Larceny	18534	87806	-7456	98884
MVT	3228	2702	1419	7349

B. RATE COMPUTATION FOR CANADA

The problems of computing incarceration rates for Canada are similar to those for the United States. Canada is a federal system in which the responsibility for criminal justice matters, including criminal statistics, are shared by the federal and provincial governments. The federal government can not guarantee provincial compliance with data collection initiatives. This situation results in information gaps, the most notable of which is the absence of systematic data on the courts. More importantly for this study, the required data on admission offense is not routinely tabulated by the provinces and it is not readily available. The Canadian Correctional Service maintains such data for federal prisoners,⁶⁰ but federal jurisdiction is limited to persons sentenced to two years or more. This limitation, in turn, excludes a large number of offenders sentenced to terms in provincial institutions. Without this information, we cannot com-

⁵⁹ See CRIME IN THE U.S., *supra* note 51.

⁶⁰ CENTER FOR JUSTICE STATISTICS, ADULT CORRECTIONAL SERVICES IN CANADA 1982/1983 172 (1984).

pute offense-specific incarceration rates. Fortunately, the Canadian government commissioned a study of sentencing practices in 1983 which included information on the charge at admission to prison.⁶¹ This study made possible the computation of offense-specific incarceration rates for Canada.

The numerator of the incarceration rate was computed by taking the proportion of total admissions for each index crime as indicated in Figure A8 of *Sentencing Practices and Trends in Canada, Vol. 1*,⁶² and multiplying it by the total number of admissions, excluding persons sentenced for failure to pay fines. The total number of admissions to prison was obtained from *Correctional Services in Canada, 1980/1981*.⁶³ Fine defaulters were removed from the total by multiplying the proportion of admissions for non-payment of fines present in Table 5 of *Correctional Services in Canada, 1980/1981* by the total number of sentenced admissions presented in Table 3 of that report.⁶⁴ The resulting number was subtracted from the total admissions figure. When estimates of the proportion of fine defaulters were not available for the period 1980-81, estimates of that proportion were taken from Table 16 of *Adult Correctional Services in Canada, 1982/1983*.⁶⁵ The data included in *Sentencing Practices* is based upon a systematic sampling of records from nine of the twelve major provincial/territorial jurisdictions in Canada and the Federal Correctional Service of Canada. Alberta, the Northwest Territory, and the Yukon were not included. Nonetheless, the jurisdictions studied include approximately 85% of the Canadian population and serve as a reasonable basis for making statements about the nation as a whole. The number of persons charged by the police for each type of index crime was used as the denominator of the rate. These data were made available in special tabulations done by the Canadian Center for Justice Statistics. Only persons arrested in the jurisdictions included in *Sentencing Practices* were included in the denominator of the rate.

C. RATE COMPUTATION FOR ENGLAND AND WALES

The computation of incarceration rates for England and Wales was reasonably straightforward because of the administrative centralization of the British criminal justice system. The numerator—

⁶¹ DEP'T. OF JUSTICE CANADA, *SENTENCING PRACTICES AND TRENDS IN CANADA* (1983).

⁶² *Id.* at 6.

⁶³ CENTER FOR JUSTICE STATISTICS, *CORRECTIONAL SERVICES IN CANADA 1980/81* 32 (1982).

⁶⁴ *Id.* at 26, 32.

⁶⁵ CENTER FOR JUSTICE STATISTICS, *supra* note 60, at 155.

persons admitted to prison to serve sentences for index crimes—was taken from the annual report, *Prison Statistics England and Wales* (Tables 3.2, 4.1, 5.1).⁶⁶ Persons under 17 years of age were excluded from the numerator to make it more comparable with United States statistics, which do not include admissions to juvenile facilities. The British police arrest suspects, but there are no routinely produced statistics on arrests. Arrests were estimated by combining the number of persons cautioned for each offense, as reported in Table 5.4 of *Criminal Statistics England and Wales, 1983*, with persons proceeded against in Magistrates Court, as reported in Tables 6.4 to 6.6 of the same publication.⁶⁷ Cautions are formal warnings, either written or oral, and are issued by police officials to persons suspected of committing a crime. Warnings are supposed to be issued only when there is sufficient evidence to proceed with a prosecution, but it is not entirely clear what happens in practice. They may be issued in cases in which the evidence is not sufficient to warrant prosecution but in which the police have good cause to believe that the suspect is guilty.⁶⁸ Bottomley and Pease⁶⁹ suggest that cases involving cautions are substantially weaker than proceedings in Magistrates Court. Because all persons who are ultimately prosecuted are proceeded against in Magistrates Court even if they are tried in Crown Courts, the sum of those proceeded against and cautioned should be a reasonable approximation of arrests in the United States. If cautioning involves less probable cause than does arrest in the United States, as the Bottomley and Pease data suggest, then this Article's count of arrests in England will be too high and the resulting incarceration rate too low. This procedure was followed for all offenses except homicide. More detailed information on homicide suspects was available in *Criminal Statistics—England and Wales, 1983*,⁷⁰ and these data were used to estimate the incarceration rate for that offense.

Admissions to incarceration for homicide included all persons sentenced to prison or as listed in Table 4.8.⁷¹ Arrests were estimated using total suspects (586) less those who died or committed suicide before processing was completed (31); it was not clear

⁶⁶ PRISON STATISTICS — ENGLAND AND WALES, Her Majesty's Stationery Office, 48, 69, 77 (1985).

⁶⁷ CRIMINAL STATISTICS, ENGLAND AND WALES 1983, Her Majesty's Stationery Office 88, 110, 112 (1984).

⁶⁸ L. LEIGH, POLICE POWERS IN ENGLAND AND WALES 60-73 (1975).

⁶⁹ K. BOTTOMLEY & K. PEASE, CRIME AND PUNISHMENT—INTERPRETING THE DATA 51-61 (1984).

⁷⁰ See *supra* note 67, at 57-68.

⁷¹ *Id.* at 67.

whether these persons had died or committed suicide before or after they had been taken into custody. Arrest in the United States requires that the person be taken into custody. The data in *Criminal Statistics—England and Wales* were altered somewhat because they are based on cohorts according to the year in which a person became a suspect.⁷² At the time of the report, not all of the suspects identified in 1983 had completed processing. The estimates of proportion convicted and sentenced to incarceration from those who had completed processing were used to estimate admissions to incarceration for the full 1983 suspect cohort. At the time of the report, 365 suspects had been processed by the police and the courts. Of these, 301 (82.5%) had been convicted for homicide and 20 (5.5%) had been convicted of another charge. Approximately 80% (240) of those convicted of homicide were incarcerated. These proportions were applied to the total population of homicide suspects that would be processed by the court to obtain an estimate of total number of suspects incarcerated. This estimation procedure is presented below.

$$\begin{array}{rccccccc} \text{(Total 1983} & * & \text{(\% of processed} & * & \text{\% convicted))} & + & \text{convicted of} \\ \text{Suspects Processed} & & \text{convicted} & & \text{incarcerated} & & \text{lesser charge} \\ \text{Admissions} = & (494 * & (.825 & * & .80)) & + & (.055 * 494) = 353 \end{array}$$

The computational method employed for homicide is different from that employed in other countries and for other crimes in England and it may affect comparisons in unknown ways. This approach was required because the data on homicide suspects proceeded against in Magistrates Court were not available in *Criminal Statistics—England and Wales*.⁷³ Consequently, the procedure for estimating arrests could not be used for homicide and the suspect data included in Chapter 4 was the best alternative. Moreover, the offense classifications in *Prison Statistics England and Wales*⁷⁴ were not exactly compatible with those in Chapter 4 of *Criminal Statistics*. Specifically, it was not clear what proportion of the "other homicide" category should be included in the numerator of the incarceration rate. This prohibited the straightforward use of the *Prison Statistics* data as the numerator of the rate.

⁷² *Id.* at 57-68.

⁷³ Statistics on homicide suspects proceeded against in Magistrates Courts are not included in CRIMINAL STATISTICS ENGLAND AND WALES.

⁷⁴ PRISON STATISTICS — ENGLAND AND WALES, *supra* note 66.

D. RATE COMPUTATION FOR THE FEDERAL REPUBLIC OF GERMANY

As in the case of England and Wales, the administrative centralization of the German criminal justice system facilitates rate computation. The numerator of the incarceration rate is admissions to prison for particular offenses as indicated by the sentences given to persons convicted of these offenses. These data were taken from the annual report of prosecution statistics, *Strafverfolgung, Rechtspflege Reihe 3, 1984*, Table 6.⁷⁵ The denominator of the rate was estimated in two ways. First, all suspects, that is, persons who the police have sufficient reason to believe committed an index crime, were included. These data were taken from the annual report of police statistics, *Polizeiliche Kriminalstatistik, 1984*, sections 2.1 through 2.6.⁷⁶ The status of suspect (*Tatverdachtige*), however, is more inclusive than that of an arrested person in the United States, because suspects need not be taken into custody and because the standard of probable cause required to make someone a suspect is considerably less than that necessary for arrest.⁷⁷ Consequently, a more restrictive definition of "arrest" was employed by using only those persons actually charged with a crime in an official judicial proceeding (*Anklage*). These data were obtained from Table 1, *Strafverfolgung, Rechtspflege Reihe 3, 1983*.⁷⁸ "Persons charged" is more restrictive than arrest in the United States. This is more equivalent to the segment of arrests that prosecutors in the United States prosecuted. Therefore, using this figure as the denominator of the incarceration rate will result in an inflated rate. By using both denominators, two rates are produced: a suspect-based rate that is too low and a charged person-based rate that is too high. The rate most comparable to the rates of the other countries studied lies somewhere in between. Although this will not permit an exact comparison of the Federal Republic of Germany with the other countries, it does provide an upper and lower limit which can serve as a basis for comparison. If the high Federal Republic of Germany rate is lower than that for other countries, then it can be confidently asserted that the West Germans employ incarceration less frequently. If the lower rate is higher than that for other countries, then it is likely that incarceration is used more frequently in the Federal Republic of Germany.⁷⁹

⁷⁵ STATISTISCHES BUNDESAMT STRAFVERFOLGUNG, RECHTSPFLEGE REIHE 3, W. KOHLHAMMER, 1983 54-75 (1985).

⁷⁶ BUNDESKRIMINALAMT, POLIZEILICHE KRIMINALSTATISTIK 67-119 (1985).

⁷⁷ This situation results in an artificially low incarceration rate.

⁷⁸ STATISTISCHES BUNDESAMT, *supra* note 75, at 7-31.

⁷⁹ This discussion of suspects relies heavily upon a letter from Dr. Hans-Jörg Al-

The two estimates have been combined to produce an average for tabular display.

The only departure from the simple ratio calculation described above occurred for homicide. In the United States, attempted homicide is classified as aggravated assault, while in the Federal Republic of Germany the same event is classified as attempted murder. In order to ensure comparability, attempted murder was removed from the denominator of the rate by multiplying the number of suspects for murder and manslaughter by the proportion of reported offenses that were classified as offenses other than attempts. Although this number is not exact, it should approximate the number of persons suspected of homicide, as opposed to attempted homicide. It is unclear from available statistics how many admissions to prison were for attempted homicide. Consequently, the incarceration rate for homicide presented in this Article is probably an overestimate, but the leaving of the attempted homicides in the denominator of the rate undoubtedly produces a larger underestimate.

E. ADJUSTING RATES FOR JUVENILES

The numerators of the flow rates described above are based upon admissions to adult institutions only, and the denominators include all arrests regardless of the age of the suspect. This approach was taken because of the ambiguity of the distinction between adults and juveniles. Some juveniles will be admitted to adult institutions, especially those juveniles convicted of serious crimes. Thus, excluding juveniles from the base would result in an overestimation of the incarceration rate. More importantly, with the available statistics, it was difficult to remove juveniles from the denominators of all rates. It was assumed that if juveniles were treated consistently across all countries, the resulting rates would still be a good scale on which to compare countries' use of incarceration. Although this assumption is reasonable, including juvenile arrests and excluding the bulk of juvenile admissions produces rates that cannot be interpreted as the probability of incarceration following arrest. For this reason, an attempt was made to remove juveniles from the denominators of the rates.

The rates with juveniles in the denominator were adjusted to remove juveniles by dividing the rate by the proportion of arrests involving adults for each index offense. Table F presents the pro-

portion of arrests involving adults by country and offense. Table G includes the adjusted rates by country and offense.

TABLE F
PROPORTION OF ARRESTS INVOLVING ADULTS BY
COUNTRY AND OFFENSE

Offense	Country			
	1982 USA	1983 England	1980 Canada	1984 West Germany
Homicide	.915	NA	.968	.951
Robbery	.736	.815	.81	.776
Burglary	.604	.73	.612	NA
Larceny/	.653	.68	.70	.70

TABLE G
ARREST-BASED FLOW RATE ADJUSTED FOR JUVENILE ARRESTS BY
COUNTRY AND OFFENSE

Offense	Country			
	USA	England	Canada	West Germany
Homicide	.772	NA	NA	.862
Robbery	.493	.475	.537	.109
Burglary	.852	.30	.286	NA
Larceny/Theft	.182	.137	.171	.025

II. POPULATION-BASED STOCK RATES

Population-based stock incarceration rates are the ratio of the number of prisoners in custody on a specific day to the total population of the country. This rate was estimated for all countries except Canada, and for most offenses. Canada does not routinely produce nationally representative counts of the number of persons in provincial institutions by index offenses. Because efforts to obtain comparable counts from every province was not particularly successful, the population-based stock rates for Canada could not be estimated.

A. STOCK RATE COMPUTATION FOR UNITED STATES

The numerator of the rate was computed by adding the persons serving sentences for index offenses in state and federal institutions and the number of persons serving sentences for index crimes in local jails on a given day. The number of state and federal prisoners

was estimated using the total number of prisoners in state and federal custody on December 31, 1982, as presented in *Prisoners in State and Federal Institutions on December 31, 1982*.⁸⁰ This figure was multiplied by the proportion of prisoners serving sentences for specific index offenses taken from the *Survey of Prison Inmates 1979*.⁸¹ There was no inmate survey conducted in 1982. It was assumed that the offense distribution would not change radically in the intervening two years and that the 1979 data would be a good approximation. The number of inmates serving sentences in local jails for index crimes was computed using the average daily population of jails, as presented in *Jail Inmates, 1982*.⁸² This number was multiplied by an estimate of the proportion of the jail population serving a sentence for particular index crimes taken from the *Survey of Inmates in Local Jails, 1983*.⁸³ The estimate of persons serving sentences in jails for a specific offense on a given day was added to the estimate of persons serving sentences in prisons for a specific offense on a given day to obtain the numerator of the stock rates.

The denominator was the total resident population of the United States in 1982, as reported in Table 1 of *Crime in the United States, 1982*.⁸⁴ This figure is the Census Bureau's estimate of the resident population.

B. STOCK RATE COMPUTATION FOR ENGLAND AND WALES

The count of prisoners in custody on a given day was taken from Table 1.5 of *Prison Statistics—England and Wales, 1983*.⁸⁵ This table presents all persons in custody on June 30, 1983. Some of the prisoners included in this table were under 17 years of age. Such prisoners would not appear in the prisoner counts for other countries, because younger juveniles are treated in a separate system and the statistics are reported separately, if at all.⁸⁶ The exclusion of younger juveniles was attempted by eliminating all persons in Table 1.5 of *Prison Statistics—England and Wales, 1983* who were residing in

⁸⁰ BUREAU OF JUSTICE STATISTICS, U.S. DEP'T. OF JUSTICE, CRIMINAL VICTIMIZATION IN THE UNITED STATES, 1982 (1984).

⁸¹ L. GREENFIELD, EXAMINING RECIDIVISM, BUREAU OF JUSTICE STATISTICS 7 (1985).

⁸² BUREAU OF JUSTICE STATISTICS, U.S. DEP'T. OF JUSTICE, JAIL INMATES, 1982 (1983).

⁸³ At present this data is available from the ICPSR, *supra* note 55.

⁸⁴ FED. BUREAU OF INVESTIGATION, UNIFORM CRIME REPORTS FOR THE UNITED STATES 39 (1983).

⁸⁵ GREAT BRITAIN HOME OFFICE, CRIMINAL STATISTICS—ENGLAND AND WALES 1983 41 (1984).

⁸⁶ This pattern of juvenile reporting occurs in Canada and the United States, but statistical reports for the Federal Republic of Germany do include younger juveniles. In an effort to assure comparability, younger juveniles have been excluded from the admissions and population counts in this Article.

youth correctional centres and junior detention centres. The conclusions reached using all persons in the table were not greatly affected by this attempt to exclude younger juveniles. Because this adjustment may not have been appropriate and because the adjustment appears to make little substantive difference, all the persons listed in Table 1.5 were included. In turn, this results in an overestimation of the stock rate for England. The denominator of the rate is the total resident population of England and Wales in 1982.⁸⁷

C. STOCK RATE COMPUTATION FOR THE FEDERAL REPUBLIC OF GERMANY

The number of prisoners in custody for index offenses on a given day was computed from Table 6 of *Strafvollzug, Rechtspflege Reihe 4, 1984*.⁸⁸ All persons in custody for the pertinent charges were added to form estimates for specific index offenses. The estimate of the resident population that served as the denominator of the rate was taken from *Polizeiliche Kriminalstatistik, 1984*.⁸⁹

III. POPULATION-BASED FLOW RATES

Population-based flow rates were computed for each country by taking the numerator from the arrest-based flow rates described above and the denominator from the population-based stock rates.

⁸⁷ The denominator was kindly provided by Pat Mayhew of the Home Office. The exact definition of the resident population may differ cross-nationally. There may be slight differences in the counting and categorization of citizens traveling abroad, resident aliens, and illegal aliens. These differences are insubstantial for the comparisons in this Article.

⁸⁸ STATISTISCHES BUNDESAMT, *supra* note 75, at 26-33.

⁸⁹ POLIZEILICHE KRIMINALSTATISTIK, *supra* note 76, at 223.