

INVITED ARTICLE

PROSECUTING INSURANCE FRAUD—A CASE STUDY OF THE MASSACHUSETTS EXPERIENCE IN THE 1990s

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ABSTRACT

There is widespread agreement that insurance fraud is a major problem in the United States. There is little agreement, however, in what constitutes insurance fraud in the many articles and research papers published on the subject during the past ten years. The term "fraud" carries the connotation that the activity is illegal and, hence, that prosecution and conviction are potential outcomes of a specific fraud. Accepting that premise allows us to adopt the legal definition of fraud in the insurance context and to examine the experience of dealing with insurance fraud in terms of property-liability insurance lines. Specifically, we examine ten years of data on referrals and disposals of incidents of suspected fraud as processed by the Insurance Fraud Bureau of Massachusetts to provide estimates of the distribution of types of people who perpetrate a variety of insurance frauds. We compile conviction rates, sentencing outcomes, and recidivism rates in detail to illuminate the law enforcement process and to gauge the deterrent effect of prosecuting insurance fraud in the criminal courts. The Massachusetts data lead us to conclude that the number of cases of convictable fraud is much smaller than the prevailing view of the extent of fraud; that the majority of guilty subjects have prior (noninsurance) criminal records; and that sentencing of subjects guilty of insurance fraud appears effective as both a general and specific deterrent for insurance fraud but ineffective as a specific deterrent for other crime types, as the recidivism rate appears no different from the general property criminal's recidivism rate.

INTRODUCTION

There is widespread agreement that insurance fraud is a major problem in the United States. More than 27 percent of insurers responding to a recent industry survey believe that the extent of fraud in the private passenger and workers' compensation insurance lines is high (IRC/ISO, 2001). There is little agreement, however, as to what constitutes insurance fraud in the many articles and research papers published on the

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subject during the past ten years.¹ This ambiguity in defining insurance fraud results in widely divergent estimates of the proportions of claims and claim dollars or policy premiums attributable to fraud.

In their annual report for 2000, the Coalition Against Insurance Fraud (CAIF, 2001) includes a telltale section called "Pin the Tail on the Estimate." Estimates of the cost of insurance fraud range from a low of \$18 billion by the National Insurance Crime Bureau for property-liability fraud to a high of \$96 billion by Conning & Co. for all lines of private market insurance. Overall, CAIF estimates that "insurance fraud costs Americans at least \$80 billion a year, or nearly \$950 for each family."² Considering that annual national premiums for property-liability insurance and life insurance in 2000 were \$300 billion and \$435 billion,³ respectively, for a combined \$735 billion, 6 to 13 percent of each insurance premium dollar goes to pay for fraud. If the typical property-liability fraud represented a claim for about \$20,000,⁴ about one and one half-million fraudulent insurance claims would be filed per year. However, in Massachusetts, which accounts for about 6 percent of the U.S. population, the Insurance Fraud Bureau (IFB) only receives about 1,500 property-liability fraud referrals per year—one-sixtieth of what might be expected.

The vast discrepancies outlined above are representative of the wide range of meanings that the word "fraud" has in different contexts rather than of vast amounts of undiscovered fraud that should be prosecuted. Often, the adjectives "soft" and "hard" will precede "fraud" to convey a distinction between claims involving exaggeration of damages from real accidents and those claims arising from staged, nonexistent, or unrelated accidents. While the latter, if proven beyond a reasonable doubt in a court of law, is most certainly a criminal matter, the former may simply be a matter of difference of judgment more suited to civil adjudication or proscription by law or regulation than criminal prosecution. The unrestricted term "fraud" should carry the common connotation that the activity is illegal and, hence, that prosecution and conviction are potential outcomes of a specific fraud.⁵ Accepting that premise allows us to adopt the legal definition of fraud in the insurance context here and to examine the experience of dealing with insurance fraud in property-liability insurance lines in terms of criminal prosecutions and outcomes. That is the subject of this study.

The societal objective of prosecuting insurance fraud, like other crimes, is to both punish the offenders and deter those offenders and others from committing future crimes (Nagin, 1998). Little if any data seem available that can shed light on the extent of fraud in this more narrow sense and the range of outcomes of prosecutions of insurance fraud. At the same time, it would be instructive to know some characteristics of those who

¹ An annotated searchable bibliography on insurance fraud is available on the IFB of Massachusetts Web site at http://www.ifb.org/IFRR/ifrr_ind.htm.

² See <http://www.insurancefraud.org/fraudbackgrounder.htm>, p. 1.

³ A. M. Best Company, as shown on <http://www.iii.org>.

⁴ The average claim fraud referral involves about \$10,700 for auto and \$36,000 for workers' compensation in the IFB of MA statistics as of the end of 2000. Workers' compensation premium fraud referrals involved much larger amounts, about \$240,000 in 2000, but far fewer incidents.

⁵ This split of a broad-based fraud term into criminal fraud and civil abuse has been implicitly recognized by claims people for years. Ross (1970, p. 45) reports, "The adjuster typically believes that few people cut false claims from whole cloth, but that nearly everyone exaggerates his loss."

commit insurance fraud and whether actual prosecutions and sentencing of guilty parties deter future offenses. We examine these questions using the documented experience of the IFB from its inception in 1991 through the end of 2000. After a short discussion of the legal aspects of fraud and its prosecution, we turn to a detailed analysis of the prosecution of IFB cases and their outcomes. We compare those outcomes to prosecutions locally and nationally to test whether the Massachusetts insurance fraud experience is typical of actions taken for similar crimes in the rest of the United States. We conclude with some limited observations on deterrence.

WHAT IS INSURANCE CLAIM FRAUD?

At least two definitions of claim fraud are in common use. In this study the term "claim fraud" is reserved for criminal acts, provable beyond a reasonable doubt. Thus, the term "fraud" is reserved for financial transactions with four properties:⁶

- intent: a willful act
- illegal: proscribed by statute
- financial gain: obtaining something of value
- falsification: under material misrepresentation

The extremely high estimates of fraud, such as Conning's \$96 billion, have confused criminal fraud with what many call (suspected) soft fraud that is at best an "abuse" of the insurance system. This abuse arises in the form of unnecessary and/or unintended coverage of claiming and treatment patterns. The vast majority of these situations, characterized at times as claims "with some element of fraud," are mislabeled as (suspected) fraud when they should be renamed "systematic abuse" or, better, "suspected systematic abuse." For example, auto bodily injury liability claims in Massachusetts reached a level in 2001 where more than 80 percent of the claims involved the most dollars of medical treatment for strains and sprains. This is a clear abuse of the insurance compensation system as intended by those wanting to cover the losses of those seriously injured in auto accidents. They are not all fraud, despite the fact that most were probably not intended to be covered by the 1925 originators of the auto liability statutes.⁷

Given the large amounts of money involved in strain-and-sprain or whiplash auto claims, economic incentives exist for current service providers to keep the system coverage as it exists despite its abuses, absent a price revolt by the electorate. The economic incentives in the systems of auto tort claims⁸ and high workers' compensation benefits can easily encourage claim filings, especially when attorneys are present in numbers that maximize the use of the insurance system.⁹ In any event, the vast majority of auto strain-and-sprain

⁶ Derrig and Krauss, 1994, p. 398.

⁷ Opinion of the Justices to the Senate and the House of Representatives (251 Mass. 569, 595(1927)), states, "Manifestly, the evil which the proposed statute is designed to diminish and in part remedy is appalling in its toll of lives and suffering."

⁸ Mass. St. 1925, c. 346 made bodily injury liability coverage mandatory for obtaining a vehicle registration, thereby forcing the approximately 70 percent of uninsured car owners to have insurance funds available for injuries arising from the operation of the car.

⁹ The workers' compensation experience in Massachusetts in the late 1980s (Gardner et al., 1996) or the auto bodily injury liability experience in California in the early 1990s (Cummins, 2001) are prime examples of the results of such incentives.

TABLE 1
Cumulative Referrals and Cases by Type of Insurance,
1991 through 2000

	Auto	WC	WC Premium	Other	Total
Referrals	10,233	4,566	418	2,057	17,274
Cases	1,838	789	172	550	3,349

claims are the result of discretionary filing of legal claims and the discretionary use of treatment that has extended beyond that amount that would minimize premiums for subsequent policies.¹⁰ "Fraud" in the remainder of this article will refer to criminal fraud, also known as hard fraud or planned fraud. In order for an insurance transaction to be considered fraud, it must contain the four elements cited previously, provable beyond a reasonable doubt in a U.S. court of law. We now turn to the 1991-2000 data compiled at the IFB of Massachusetts to explore the process of prosecuting insurance fraud.

THE PROSECUTION DATA

The IFB of Massachusetts began accepting referrals and creating cases for investigation in May 1991.¹¹ By the end of 2000, nine and one-half years later, the IFB had received 17,274 referrals. Thirty-nine percent of these referrals (6,684) were accepted and in some cases combined, resulting in 3,349 cases. Table 1 shows the distribution of referrals and cases by major line of property-liability insurance.¹² Eighty percent (2,677) of the cases have completed the investigative stage. Of those case investigations, 552 (21 percent) resulted in a referral to a prosecutor, and 293 were closed with prosecution completed. In an additional 20 cases, some subjects have completed prosecution. Table 2 shows the disposition of cases by major line of insurance.

As Figure 1 indicates, it took about two years for a consistent number of closed cases to be achieved. The 293 completed and 20 partially prosecuted cases involved 543 people (Figure 2) who played a variety of roles in these fraud schemes. There were 87 different combinations of outcomes for completed prosecutions.¹³ These combinations include the finding and the sentence, if applicable. The sentence for IFB statistical purposes includes four possible components: jail, probation, restitution, and fines/fees/other. Within each sentence, these components can exist in any combination. The components of the sentences actually imposed in Massachusetts for insurance fraud vary greatly. We now examine the principal outcomes of these prosecutions as they relate to type of insurance and the role of the subject in the fraud scheme.

¹⁰ One example of discretionary claim filing can be found in the large discrepancy between no-fault personal injury protection claim filing by at-fault versus not-at-fault drivers (see Weisberg et al., 1994, p. 255, Table 1).

¹¹ For a discussion of the statutory requirements and operational setup of the IFB, see Derrig and Krauss (1994).

¹² The category "other" is predominantly property insurance referrals and cases.

¹³ In reality, more possible outcomes exist. The IFB case management and statistical database tracks only the outcomes included in this report.

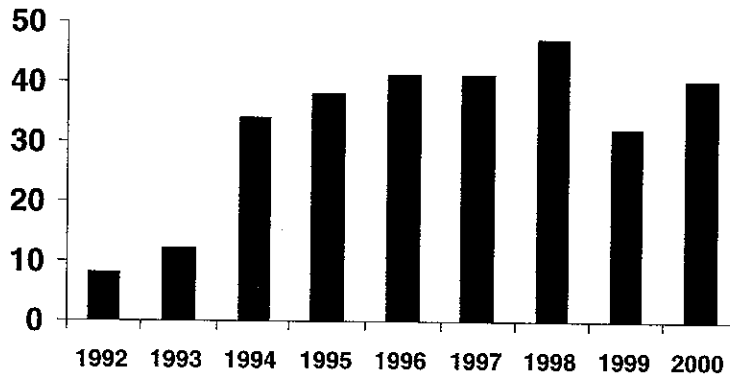
TABLE 2

Cumulative Cases by Type of Insurance and Case Status, 1991 Through 2000, as of Year-End 2000

Case Status	Auto	WC	WC Premium	Other	Total
Wait	340	52	8	50	450
Assigned	107	45	24	46	222
Closed No Prosecution	1,156	524	70	334	2,084
Transferred	15	11	2	13	41
At Prosecutor	49	35	25	30	139
Prosecution Declined	50	40	9	21	120
Prosecution Complete	121	82	34	56	293
Total	1,838	789	172	550	3,349

FIGURE 1

Total Cases Closed After Prosecution

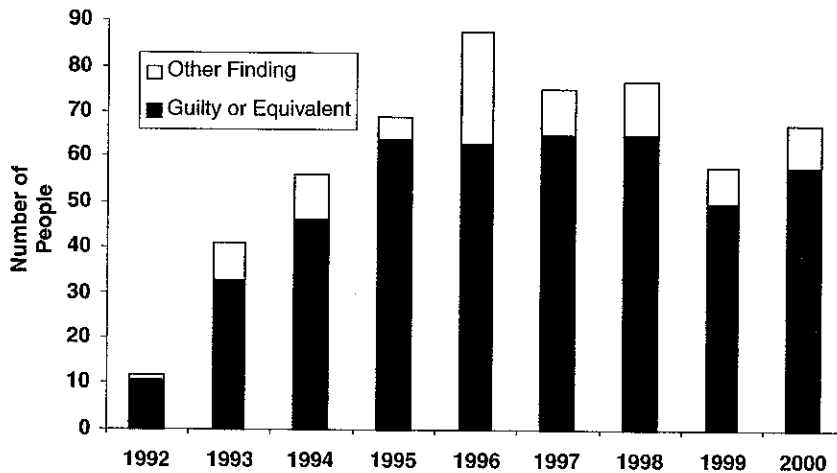


SUBJECT ROLES AND TYPE OF INSURANCE

Each type of insurance fraud prosecuted involves various roles of the individuals who appear as defendants. Table 3 summarizes into four categories the distribution of subject roles by type of insurance. Auto insurance fraud involved the greatest variety of roles, while workers' compensation (WC) premium involved the least. This variety is directly related to the large assortment of methods and schemes available to defraud the auto carrier, particularly in claims.

The phony theft or arson often involves a third party who removes and disposes of, or conceals, the vehicle. This permits the insured to claim that he or she was someplace else when the vehicle was taken. Repair shops can commit fraud without the knowledge or consent of the vehicle owner. Glass shops can bill companies for a more expensive piece of glass than was installed. In some cases, the vehicle owner is involved and shares in the gain. More complex repair fraud schemes might involve the cooperation of the

FIGURE 2
Subjects in Cases with Closed Prosecutions



appraiser or adjuster. Medical mills require cooperative patients. Witnesses and passengers become involved when they provide false testimony to validate the auto claim. While auto insurance fraud can be committed by a number of people other than the insured or claimant, the latter account for about 85 percent of the prosecuted subjects.

By contrast, WC claimant fraud is usually a one-person operation. The most common WC fraud is working while collecting disability payments. These claims may begin as legitimate claims. At some point, the claimant deduces that he or she can return to work somewhere else and continue to tell the insurance company and the employer that he or she is still disabled. Unless this is part of a larger criminal enterprise, the attorneys and medical providers are not involved. WC premium fraud, or any premium fraud, normally involves only the applicant. In some cases an agent, or consultant, may guide the applicant toward "beneficial" declarations on the application and provide supporting documents for any audit.

Insured and claimant are roles that are often played by the same person. This is particularly true in first-party auto claims such as Personal Injury Protection (PIP) or Collision. For this reason, we combined these two roles into Insured/Claimant for most subjects.

The Insured/Claimant role was the predominant role, accounting for 73 percent of all subjects. Insured Only included about 12 percent of all subjects. Claimants are not a party to premium fraud, so we used the Insured Only category for premium fraud, most of which was WC premium. We created the Accomplice role as the result of an examination of a rather large number of people whose role was labeled "Unspecified." The Accomplice does not appear as a party to either the claim or the policy but is discovered as a result of the criminal investigation. This person facilitates the fraud but remains in the background. One example of an accomplice is the person who hides a vehicle in a fraudulent theft. We also created a medical employee role, which permitted us to separate the medical providers from other office personnel. Table 3 shows the variety of the

TABLE 3
 Prosecuted Subjects by Role and Type of Insurance

Role	Type of Insurance					Grand Total
	Auto	Multilines	Other	WC Premium	WC	
Insured/Claimant	243	31	39	1	85	399
Insured Only	3			62		65
Adjuster	2		2		1	5
Agent	2	3	6	3		14
Appraiser	1					1
Attorney	3	1			2	6
Chiropractor	1	4				5
Insider			1			1
Medical Employee		1				1
Medical Doctor		1				1
Physical Therapist			1			1
Private Investigator					2	2
Repair	7		2			9
Subtotal Professional	16	10	12	3	5	46
Accomplice	17				3	20
Imposter					2	2
Passenger	5					5
Witness	3		2	1		6
Subtotal Other	25		2	1	5	33
Grand Total	287	41	53	67	95	543

remaining roles. To facilitate the analysis of outcomes, we grouped the roles into these categories: Insured/Claimant, Insured, Professionals, and Others.¹⁴

Professionals earn their livelihood in ways that support insurance claims or policies. Insurance Agent is the most frequently prosecuted in the Professional category to date. For clarification, we added two additional lines of insurance, Multilines and Other. We applied Multilines to cases involving multiple referrals for different types of insurance. In general, these defendants engage in both WC and auto claimant fraud.

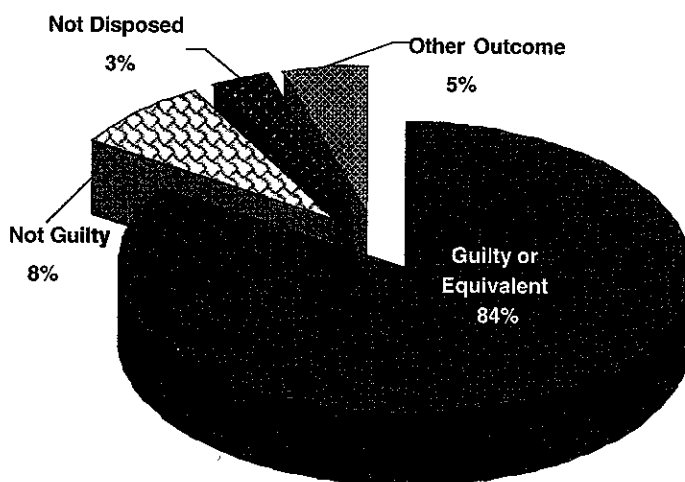
FINDINGS

Twelve findings, or verdicts, are possible in a fraud case. We grouped these findings by placing similar results together. We considered "Continued Without Finding," "Pled No Contest," "Found Guilty," and "Pled Guilty" similar outcomes and grouped them under "Guilty or Equivalent." This group accounted for the majority (84 percent) of the findings in IFB closed cases. Similarly, we grouped "Acquitted," "Dismissed," and "Found Not

¹⁴ All subsequent tables by subject role within the text of this article contain Insured/Claimant, Insured Only, and the subtotals for Professionals and Other. Detailed tables are available from the authors.

FIGURE 3

Cumulative Findings from IFB Cases After Prosecution



Guilty" under "Not Guilty." The "Not Disposed" group refers to defendants who have fled or in some way made themselves unavailable to the court. These cases are effectively ended until the defendant is located and returned to the court. "Other Outcome" includes everything not part of the other three groupings. Figure 3 illustrates the distribution of these groups by finding.

In some cases, a single person may have multiple charges with different findings on each charge. In each of these situations, we selected the one outcome that is viewed as least favorable to the defendant and have associated that outcome with the person. For example, a subject charged with two offenses may be found guilty on one and have the other dismissed. This subject would be categorized as Found Guilty. Another subject may plea bargain, resulting in a Pled Guilty finding on one charge and all other charges continued without a finding. That subject would be categorized as Pled Guilty.

Pled Guilty was by far the most frequent finding (65 percent) of the Guilty or Equivalent group and is generally indicative of a plea bargain.¹⁵ Continued Without Finding was a distant second at 23 percent.

After a hearing, the judge will determine that justice would best be served and the defendant would have the best chance of rehabilitation if the charges are continued without a finding. If the defendant keeps out of trouble for a given period, the charges are dropped. If the defendant does not fulfill the judge's instructions, they will be brought back to court and a guilty finding imposed. Usually, in order for a case to be continued without a finding, the defendant must agree with facts of the charge as detailed by prosecution.¹⁶

¹⁵ Nationally, the median number of days between arrest and disposition for fraud and larceny cases pled guilty is 156 days, less than half the time required (342 days) for a jury finding (Sourcebook, 2000, p. 459, Table 5.46).

¹⁶ <http://www.masbar.org/criminalcases.html> (Massachusetts Bar Association).

The third most frequent finding in this group (12 percent) was Found Guilty, as a result of a jury or bench trial.

The "Not Guilty" group includes "Acquitted" and "Found Not Guilty," both of which are the results of a trial. "Acquitted" is used to differentiate a bench-directed verdict of not guilty from a jury verdict. "Dismissed," also part of this group, can be the result of a plea bargain or a motion at a preliminary hearing¹⁷ or some other court activity.

The "Other Outcome" group includes "Filed," "Nolle Prosequi," and "Pretrial Probation."

Cases may be disposed of without the finality of a guilty or not guilty finding. A prosecutor may recommend that charges be placed on file in which case further action is indefinitely suspended. Prior to trial, a prosecutor may file a *nolle prosequi* of the indictment or complaint, which means that, although there has been an indictment, the case will not be prosecuted. A *nolle prosequi* is unusual and the prosecutor must file a written explanation.¹⁸

Pretrial Probation may have other conditions in addition to probation attached to the outcome. Table 4 shows the distribution of these findings by type of insurance.

WC premium fraud cases involve significantly higher dollar amounts. As a result, the penalties in these cases are significantly higher. For this reason, WC Premium is split from other types of WC fraud. The subject count for Auto was very high relative to the other lines of insurance because of the large volume of claims and the nature of auto fraud, which may involve many people in one accident. By comparison, WC claimant fraud typically involves one person per incident.

Guilty or Equivalent accounted for 84 percent of the findings. Most Guilty or Equivalent (86 percent) subjects were Insureds/Claimants. A somewhat larger (88 percent) of the prosecuted Professionals were Guilty or Equivalent. Do guilty findings result in meaningful penalties? How often is the minimum penalty of restitution imposed? How much does role contribute to the type of sentence handed down? An examination of the various sentences will answer these questions.

SENTENCES

A sentence can have many components: jail or prison, probation, restitution, (criminal) fines, and/or fees. The IFB case database has statistical information on these elements. However, a sentence may include other elements such as community service, which are not tracked by the IFB. Table 5 provides an overview of the distribution of these sentence components by finding.

¹⁷ When a felony charge is filed in a district court, the person charged has the right to a preliminary hearing to determine if there is probable cause. If, during the course of the hearing, the judge decides that there is no probable cause (insufficient evidence to show that the accused person had committed the crimes charged), the case will be dismissed. (Source: <http://www.masbar.org/criminalcases.html>, Massachusetts Bar Association).

¹⁸ <http://www.masbar.org/criminalcases.html> (Massachusetts Bar Association).

TABLE 4
Prosecution Outcomes by Type of Insurance

Group	Finding	Type of Insurance					Grand Total
		Auto	Multilines	Other	WC Premium	WC	
Guilty or Equivalent	Continued w/o Finding	56	1	13	10	24	104
	Found Guilty	30	5	6	5	8	54
	Pled Guilty	154	20	29	38	53	294
	Pled No Contest				2	1	3
Guilty or Equivalent Total		240	26	48	55	86	455
Not Disposed	Fled State/Case Closed	5	1				6
	Outstanding Warrant	5	7	1			13
Not Disposed Total		10	8	1			19
Not Guilty	Acquitted	10				2	12
	Dismissed	13	3	1	6	2	25
	Found Not Guilty	2	1	3		1	7
Not Guilty Total		25	4	4	6	5	44
Other	Filed	1				1	2
Outcome	<i>Nolle Prosequi</i>	2	2			1	5
	Pretrial Probation	9	1		6	2	18
Other Outcome Total		12	3		6	4	25
Grand Total		287	41	53	67	95	543

TABLE 5
Subjects and Sentence Components by Finding

	Continued w/o Finding	Guilty or Equivalent			Other Outcome		Grand Total
		Found Guilty	Pled Guilty	Pled No Contest	Pre-Trial Probation	Total	
Jail (to Serve)		6 (3)	39 (10)	1 (1)			46 (14)
Jail (to Serve), Probation, and Restitution		6 (2)	36 (20)				42 (22)
Jail (to Serve) only		11 (8)	26 (13)				37 (21)
Jail (to Serve), Restitution, and (Fines or Other)		1 (0)	23 (4)				24 (4)
Jail (to Serve), Probation and (Fines or Other)		4 (2)	12 (4)	1			17 (6)
Jail (to Serve), Probation, Restitution, and (Fines or Other)		2 (2)	17 (9)				19 (11)
Jail (to Serve) and Probation		5 (2)	9 (4)				14 (6)
Jail (to Serve) and (Fines or Other)		2 (2)	4 (2)				6 (4)
Total With Jail (to Serve)		37 (21)	166 (66)	2 (1)			205 (88)
No Jail							
Probation and Restitution	31	3	30			2	66
Probation Only	11	2	26			8	47
Probation and (Fines or Other)	23	1	17			2	43
Probation, Restitution, and (Fines or Other)	18	2	24				44
Restitution Only	7	1	7			3	18
(Fines or Other) Only	4	4	13			1	22
Restitution and (Fines or Other)	4	3	3	1		2	13
Total With Probation	83	25	171	1		12	292
Total With Restitution	60	24	179	2		7	272
No Recorded Penalty	6	1	6				13
Total	104	54 (21)	292 (66)	3 (1)		18	471 (88)

TABLE 6
Frequency of Component as Part of Sentence by Role

	Number of Sentences				Percentage of Sentences			
	Jail (To Serve)	Restitution	Probation	Total	Jail (To Serve)	Restitution	Probation	Total
Insured/ Claimant	159 (59)	212	215	349	46%	(17%)	61%	62%
Insured Only	13 (10)	32	35	58	22%	(17%)	55%	60%
Professional	23 (17)	21	27	39	59%	(44%)	54%	69%
Other	10 (2)	7	13	25	40%	(8%)	28%	52%
All Roles	205 (88)	272	290	471	44%	(19%)	58%	62%

When jail¹⁹ is a component of the sentence, the sentence has two parts: the length of the sentence and the time to serve. Not all jail sentences include time to serve.²⁰ The number of those who were ordered to serve time appears in parentheses, where applicable, and should be considered a subgroup of those with a jail sentence. Two hundred and five subjects received sentences that included Jail; 88 were ordered to serve at least part of the sentence. Probation and Restitution was the most frequently used sentence combination, totaling 14 percent (66/471). Overall, 44 percent (205/471) received jail sentences, 62 percent had probation imposed, and 58 percent were ordered to make restitution. The 13 subjects who did not have a penalty associated may have some sentence component that is not tracked. For each of these components, the size or length of the individual penalty was based on a number of factors and, as a result, the penalties varied significantly. Later sections of this article look at the range of these individual penalties.

It is difficult to develop an overall sense of sentence severity from these 16 combinations. To assist in that assessment, we grouped the combinations by severity, assuming that a sentence with Jail is the most severe, followed by Probation, and then Restitution. Table 6 and Figure 4 graphically illustrate the grouping of sentence components based on severity.

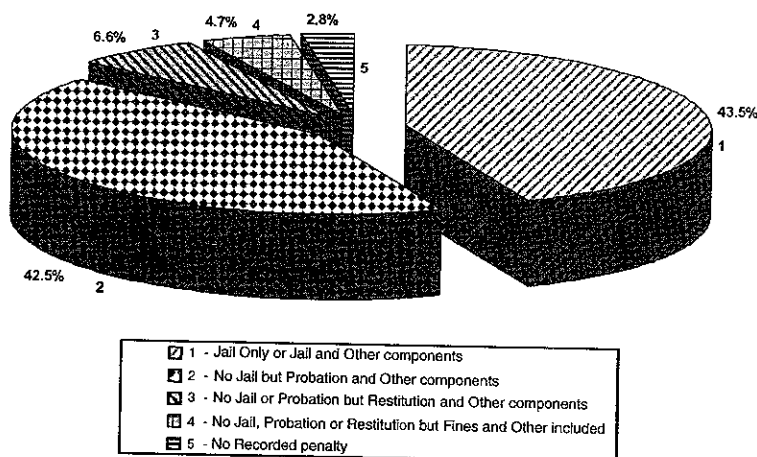
Comparing the distribution of sentence components is difficult because of the large number of categories. To facilitate this comparison, Table 6 shows three subtotals: all sentences that include Jail, Probation, or Restitution as an element. Table 7 shows the disaggregated sentence combinations, while Table 8 shows percentages of each combination for each role.

A quick look at Table 6 shows some interesting differences. A slightly larger percentage of Insureds/Claimants (61 percent) than Insureds Only (55 percent) were ordered to make any restitution. The disparity truly emerges when we look at Jail and the threat of Jail. Forty-six percent of Insureds/Claimants were threatened with Jail while Insureds Only had a jail sentence 22 percent of the time, the lowest percentage of the four categories.

¹⁹ While jail and prison are distinctly different levels of incarceration, we do not pursue that difference and count all levels of incarceration under the term "Jail."

²⁰ The proportion of jail sentences with time to serve in prison for those guilty of insurance fraud is a function of the entire judicial sentencing enterprise, especially of the "crowding out" effect of mandatory sentences for drug-related crimes (Kuziemko and Levitt, 2001).

FIGURE 4
Sentence Components Grouped by Severity



This means that if Jail is part of the sentence, insureds and claimants will be ordered to serve jail time in about 40 percent (69/172) of the sentences. Professionals were sentenced to Jail more than half the time (55 percent) and served time (44 percent) twice as often as any other category.

Throughout the remainder of this article, we will examine these components in more depth based on type of insurance and the subject's role in the criminal activity.

JAIL TIME

Only subjects with Guilty or Equivalent findings were sentenced to jail time. As Table 9 indicates, there was little difference between the length of the jail sentence for Found Guilty and Pled Guilty. However, those who were found guilty were more likely to have a jail sentence imposed and significantly more likely to have to serve time. A person found guilty was ordered to serve 11 additional months, on average, than someone who pled guilty. This is consistent with the expected benefit of "pleading out" versus going to trial. While the sentences for a plea bargain were no more severe than for those found guilty, it is reasonable to assume that if those who pled guilty had continued with a trial, the sentence would have been far more severe.²¹ Figure 5 illustrates the distribution of time ordered to serve versus the time sentenced.²² The back row of the figure clearly shows that most jail sentences resulted in no time served. Only 88 of the 205 people sentenced to Jail were ordered to serve time. (Of the 117 who were not ordered to serve time, 101 had some other component to their sentence while 16 had no other

²¹ The defendant enters a plea of guilty. In exchange for a plea, charges may be reduced, thereby limiting the sentence that may be imposed. (Source: Massachusetts Bar Association).

²² The diagonal from the back left (no time to serve, one-month jail sentence) to the front right of the graph represents jail sentences about equal to time to serve. Most times to serve are far less than the jail sentence itself.

TABLE 7
Sentence Components by Role

Role	Jail (to Serve)		Jail (to Serve) and Fine/Other		Jail (to Serve), Restitution, and Fine/Other		Jail (to Serve), Probation, and Restitution		Jail (to Serve), Probation, and Fine/Other		Jail (to Serve) w/ Jail	
	(to Serve)	Fine/Other	(to Serve) and Restitution	Restitution	(to Serve), Restitution, and Fine/Other	Restitution, and Fine/Other	(to Serve), Probation, and Restitution	Probation, and Restitution	(to Serve), Probation, and Fine/Other	Probation and Fine/Other	Total	w/ Jail (to Serve)
Insured/ Claimant	28 (17)	4 (2)	38 (11)	11 (5)	23 (3)	31 (14)	13 (3)	11 (4)	159 (59)			
Insured Only	1	1 (1)	3 (2)	4 (3)		1 (1)	2 (2)	1 (1)	13 (10)			
Professional	4 (3)	1 (1)	2 (1)	4 (3)		9 (7)	2 (1)	1 (1)	23 (17)			
Other	4 (1)		3	1 (1)		1		1	10 (2)			
Total	37 (21)	6 (4)	46 (14)	19 (11)	24 (4)	42 (22)	17 (6)	14 (6)	205 (88)			

Restitution Only	Restitution and Fine/Other		Restitution, Probation, and Fine/Other		Restitution and Probation		Probation and Fine/Other		Fine/Other Only		No Recorded Penalty		Total
	Restitution and Fine/Other	Restitution and Probation	Restitution, Probation, and Fine/Other	Restitution and Probation	Probation and Fine/Other	Probation Only	Fine/Other Only	Fine/Other Only	No Recorded Penalty	Total			
14	10	31	54	32	33	11	5	349					
3	3	9	9	4	6	6	5	58					
1		4	2	4	1	3	2	39					
18	13	44	66	43	47	22	13	471					

TABLE 8
Percentage of Sentence Components by Role

Role	Jail (to Serve) 8% (5%)	Jail (to Serve) and Fine/Other 1% (1%)	Jail (to Serve) Restitution 11% (3%)	Jail (to Serve) Restitution and Fine/Other 7% (1%)	Jail (to Serve), Restitution, Other 3% (1%)	Jail (to Serve), Probation, Restitution, and Fine/Other 9% (4%)	Jail (to Serve), Probation, and Fine/Other 4% (1%)	Jail (to Serve), Probation, and 3% (1%)	Total w/ Jail (to Serve) 46% (17%)
Insured/Claimant									
Insured Only	2%	2% (2%)	5% (3%)	7% (5%)	7% (5%)	2% (2%)	3% (3%)	2% (2%)	22% (17%)
Professional	10% (8%)	3% (3%)	5% (3%)	10% (8%)	10% (8%)	23% (18%)	5% (3%)	3% (3%)	59% (44%)
Other	16% (4%)	12%	4% (4%)	4% (4%)	4%	4%	4%	4%	40% (8%)
Total	8% (4%)	1% (1%)	10% (3%)	5% (1%)	4% (2%)	9% (5%)	4% (1%)	3% (1%)	44% (19%)

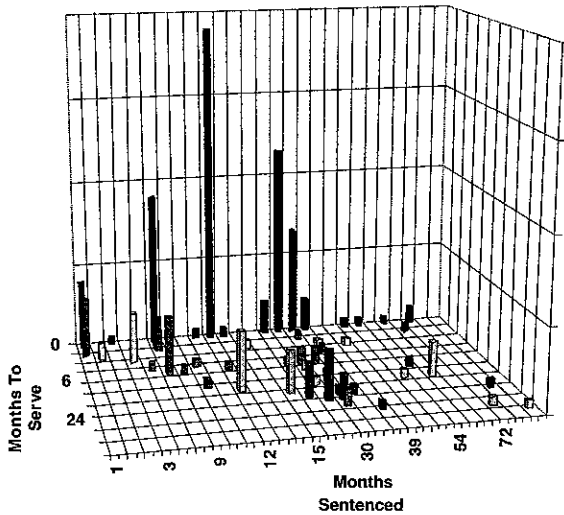
	Restitution, Probation, and Fine/Other					Total		
	Restitution Only	Restitution and Fine/Other	Restitution and Probation	Probation and Fine/Other	Probation Only	Fine/Other Only	No Recorded Penalty	Total
4%	3%	9%	15%	9%	9%	3%	1%	100%
5%	5%	16%	16%	7%	10%	10%	9%	100%
4%		10%	5%	10%	3%	8%	5%	100%
4%	3%	9%	14%	9%	28%	8%	4%	100%
					10%	5%	3%	100%

TABLE 9
Jail Sentences for Guilty or Equivalent Subjects

Group	Finding	All Subjects	Subjects With Jail		Average of Months			
			Sentenced	To Serve	Sentenced	To Serve		
Guilty or Equivalent	Continued w/o Finding	104	-	-	0%	-	-	
	Found Guilty*	54	37	69%	21	39%	21.6	21.6
	Pled Guilty	292	166	57%	66	23%	18.8	10.8
	Pled No Contest	3	2	67%	1	33%	34.0	1.0
Guilty or Equivalent Total		453	205	45%	88	19%	19.5	13.1

*Two subjects were given life sentences. Since there is no standard length for a life sentence, they are omitted from the calculation of average months.

FIGURE 5
Jail Time Sentenced vs. To Serve



measurable element. Jail time appears to be closely related to the role played by the individual, as Table 11 illustrates.

WC premium fraud earned the largest average jail time to serve, at 24 months. This is consistent with the large dollar value of the fraud involved. Premium fraud often covers multiple years, growing in boldness with each year.

Two potential auto claimants are now serving life sentences. They were convicted of murder when their plan to stage a "swoop-and-squat" rear-end collision resulted in the death of the innocent target. The average Insured/Claimant sentence was 19 months (Table 11). The Insured/Claimant for auto served an average of 10.4 months, or 68 percent

TABLE 10
Jail/To Serve Sentence Analysis

	Jail	To Serve	Not to Serve
And Restitution	46	14	32
And Probation and Restitution	42	22	20
And Restitution and Fine or Other	24	4	20
And Probation, Restitution, and Fine or Other	19	11	8
And Probation	14	6	8
And Probation and Fine or Other	17	6	11
And Fine or Other	6	4	2
Jail Only	37	21	16
Total	205	88	117

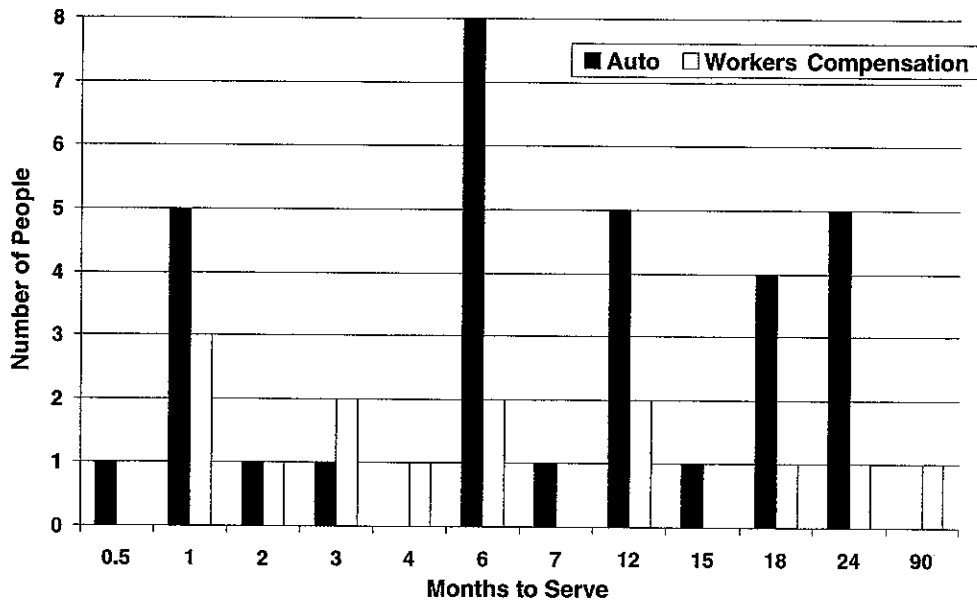
TABLE 11
Jail Sentenced and To Serve by Subject Role and Type of Insurance

Role	Average Jail and Average Months by Role	Type of Insurance					Grand Total
		Auto	Multi- lines	Other	WC Premium	WC	
Insured/Claimant*	Average Jail (months)	16.6	22.0	20.0	-	22.0	18.7
	Average to Serve	10.4	22.9	11.3	-	13.1	12.9
	Count of Subject	94 (34)	15 (8)	10 (3)	-	40 (14)	159 (59)
Insured Only	Average Jail (months)	-	-	-	25.0	-	25.0
	Average to Serve	-	-	-	22.6	-	22.6
	Count of Subject	-	-	-	13 (10)	-	13 (10)
Professionals	Average Jail (months)	22.5	26.0	30.6	-	18.0	24.7
	Average to Serve	8.2	10.3	11.0	-	1.0	8.8
	Count of Subject	11 (9)	5 (4)	5 (3)	-	2 (1)	23 (17)
Other	Average Jail (months)	12.0	-	18.0	10.0	12.0	12.4
	Average to Serve	6.0	-	-	10.0	-	8.0
	Count of Subject	6 (1)	-	1	1 (1)	2	10 (2)
Total Average Jail (months)		16.9	23.0	23.2	23.9	21.4	19.5
Total Average to Serve		9.8	18.7	11.2	21.5	12.3	13.1
Total Count of Subject		111 (44)	20 (12)	16 (6)	14 (11)	44 (15)	205 (88)

* Two subjects were given life sentences.

FIGURE 6

Sentences to Serve for Auto and WC Insured/Claimant



of the sentenced amount.²³ The average to serve for Multilines was double that of Auto. Remarkably, the same role in WC claims fraud served 13.1 months, or about 60 percent of the sentenced amount. Figure 6 compares the sentence to serve distribution for WC and Auto, revealing the greater penalties for WC claimants and even greater penalties for multiline insurance fraud. Twenty-three professionals were sentenced to Jail. Of these, 17 (74 percent) were required to serve time.

We have checked whether the Massachusetts insurance fraud outcome experience is consistent with overall U.S. court experience. Table 12 (and Figure 7) compare the Massachusetts sentences to those handed down in 1996 by state and federal courts countrywide for felony fraud convictions (Brown and Langan, 1999). This comparison demonstrates that IFB sentences are broadly consistent with those handed down across the United States.

PROBATION

Probation exchanges incarceration for release in the community under some degree of supervision. Conditions such as making restitution or community service can also be attached to the probation. Failure to comply with the conditions of probation can expose the subject to more severe sanctions such as incarceration. Probation can also be a sentence by itself. Table 13 summarizes the sentences that included probation as a component and the average months of probation. The highest average number of months for probation (38.4 and 32.2) occurred when Jail, Probation, and Restitution were all present. The lowest average months (13.6) were for Probation without Jail or Restitution.

²³ The average jail sentence for those ordered to serve was generally two months more, on average, than the overall jail sentence. For example, the average jail sentence for Insureds/Claimants for Multilines was 31.4 months for those with jail time to serve.

TABLE 12
Number and Percentage of Convicted Felony Fraud Defendants

Fraud	Felony Convictions			Prison Sentences*			Jail Sentences			Probation Sentence		
	Total	State	Federal	Total	State	Federal	Total	State	Federal	Total	State	Federal
DOJ 1996	% 100%	84%	16%	22%	17%	5%	25%	20%	5%	53%	46%	7%
	# 49,553	41,480	8,073	10,902	8,296	2,606	12,388	10,370	2,341	26,263	22,814	3,391
IFB 1991-1999	% 100%	95%	5%	21%	19%	2%	24%	23%	1%	56%	53%	3%
	# 398	379	19	82	76	6	95	92	3	221	211	10

* For consistency between Insurance Fraud Bureau and Department of Justice data, Prison Sentences are those greater than one year and jail sentences are those 12 months or less.

FIGURE 7
Distribution of Probation by Length of Time

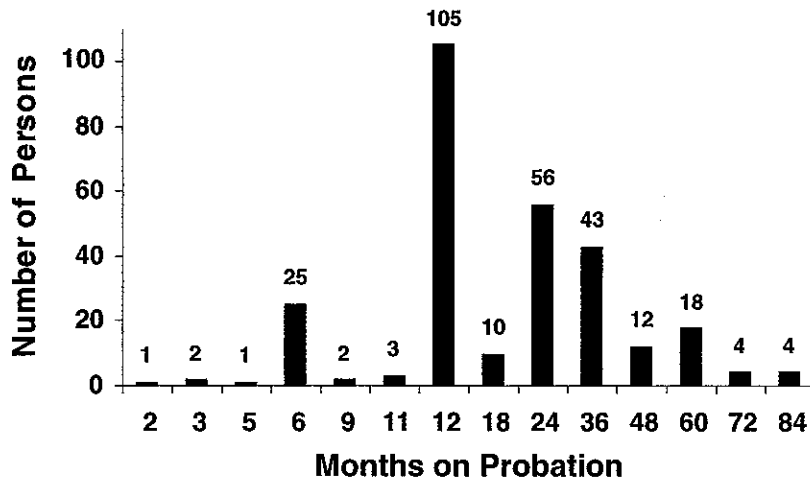


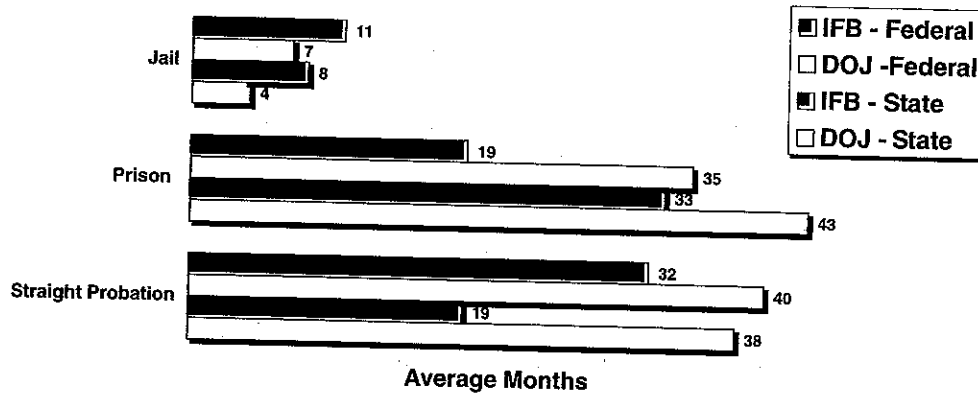
TABLE 13
Sentence Combinations With Probation

Sentence Component Combination	Count	Percent	Avg. Months
Jail and Probation	14	5.0%	22.9
Jail and Probation and (Fine or Other)	17	6.0%	26.8
Jail and Probation and Restitution	42	14.0%	38.4
Jail and Probation and Restitution and (Fine or Other)	19	6.5%	32.2
Probation and (Fine or Other)	43	15.0%	13.6
Probation and Restitution	66	22.6%	23.8
Probation and Restitution and (Fine or Other)	44	15.0%	18.0
Probation Only	47	16.0%	20.7
Total	292	100.0%	23.9

Probation is often used in combination with a jail sentence; this scenario is called a split sentence. Probation without a jail sentence is straight probation. The average length of the probation was about 50 percent higher when Jail was present. Those who were found guilty had sentences including Jail and Probation 65 percent of the time. However, those who pled guilty spent more months on Probation than those who were found guilty regardless of whether Jail was a component.

As Figure 8 indicates, the range of probation sentences varied widely, with the predominant lengths being one, two, and three years, respectively. One half of all sentences were 18 months or more, with an overall average of about two years. Professionals had an

FIGURE 8
IFB and DOJ Average Sentence Lengths, Federal and State Courts



average of nearly three years, while Insureds/Claimants received somewhat less than two years. Multiline cases had the highest average length of probation, at 31.1 months.

As part of the comparison on felony sentences, we compared the average length of straight probation for IFB cases²⁴ to the 1996 national averages for state and federal courts and present the results in Figure 7. Probation for IFB cases tried in state court lagged far behind their national counterparts at one half of the national average of 38 months. In federal court, the IFB cases were sentenced to straight probation at about 80 percent of the national rate, about the same as jail sentences.

WHO ARE THE FRAUDSTERS?

The prior sections have characterized the 1991–2000 guilty fraudsters by their roles in the frauds, the line(s) of insurance involved, and the various sentences imposed by the courts. But insurance fraud is a criminal enterprise. Are there connections between insurance fraud and other crimes? We approach that broad question with a look at who our fraudsters are in terms of their prior and subsequent criminal records.²⁵ Of the 455 subjects classified here as Guilty or Equivalent, records for 365 subjects were available to the IFB. Table 14 shows the simple percentage splits of subjects into those with prior and/or subsequent offenses.

PRIOR OFFENSES

Approximately one half of the fraudsters had recorded offenses prior to the insurance fraud disposition, and nearly one third (29 percent) had subsequent offenses as of the end of 2000. Officially, the Commonwealth of Massachusetts classifies offenses that qualify for commitment to jail or prison by five categories: person (35 percent), sex (7 percent), property (19 percent), drugs (24 percent), and other (16 percent), where the figures shown

²⁴ The numbers in Figure 8 represent IFB experience through 1999 only.

²⁵ Our modest inquiry looks only at simple counts by the broadest of categories. An appropriate and more detailed study of the guilty subjects is beyond the scope of our data.

TABLE 14
Proportions of Prior and Subsequent Offenses

Count N = 365 Prior	Subsequent		Grand Total
	No	Yes	
No	41.92%	6.85%	48.77%
Yes	29.04%	22.19%	51.23%
Total	70.96%	29.04%	100.00%

TABLE 15
Prior Offenses by Fraud-Related Penalty

Fraud-Related Penalty	N	Type of Prior Offense		
		No Prior Offense	Not Property	Property
Jail	62	35.48%	56.45%	8.06%
Probation	265	50.19%	39.62%	10.19%
Other	32	59.38%	31.25%	9.38%
No Penalty	6	66.67%	33.33%	0.00%
Total	365	48.77%	41.64%	9.59%

in parentheses are proportions of the offenses of the 2,873 persons released in 1996 by the Massachusetts Department of Corrections (Hoover, 2001, p. 20, Table 14). Insurance fraud is classified as a property crime, so the seven subjects committed to Jail from IFB cases in 1999 constituted only 1.6 percent of the property commitments, and 0.03 percent overall. Indeed, this should not be surprising since Massachusetts is one of two states (Illinois is the other) that reserves its prison space for violent offenders at over 70 percent of the commitments (Spelman, 2000, Figure 6). Nationally, 1999 property (and extortion, fraud, and bribery) offenses constituted about 21 percent of federal court commitments and 27 percent of state court commitments (BJS State Prison Admissions, 1999, NCRP 9906; Sourcebook, 2000, Table 6.40). Thus, only a very small proportion of the prison/jail population is liable to be there because of insurance fraud.

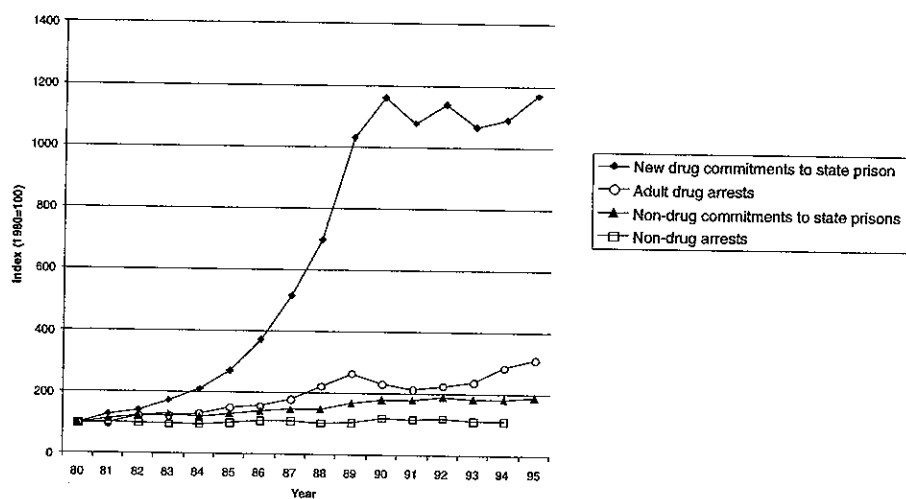
What type of prior offenses did our fraudsters have? Table 15 shows prior offense counts by insurance fraud sentence²⁶ in two categories: Property and Not Property, the latter constituting violent and drug-related crimes. Similar to the overall Massachusetts statistics, the prior offenses were Property only about 19 percent of the time.²⁷ Stated differently, these are not career insurance fraud criminals but rather general-purpose criminals who happened to get caught for insurance fraud.²⁸

²⁶ Probation in Table 15 includes those sentenced to jail but without time to serve, those sentenced to suspended sentences, and those sentenced to probation without jail.

²⁷ Since our prior/subsequent counts are arrests/arraignments, the analogous commitment percentage for Property would be lower because violent crimes tend to receive proportionately more jail sentences.

²⁸ Barnes (1999, p. 645), citing Wilson (1983, p. 154), notes that "most street criminals do not specialize. Today's robber can be tomorrow's burglar and the next day's car thief."

FIGURE 9
Arrests and State Prison Commitments by Crime Type



Do prior criminal records lead to harsher sentences for insurance fraud? It appears so, but not by much, since the lowest percentage of No Prior Offense (36 percent) was for the Jail to Serve category. But it is also surprising that 50 percent of those sentenced to receive Probation (or suspended sentences) for insurance fraud had prior offenses, with only 20 percent (10/50) of those having property priors. This means that the majority of the remaining 80 percent (40/50) were involved with violent or drug-related prior offenses, not your typical image of paper-intensive insurance fraudsters.²⁹

THE DRUG CONNECTION

One of the realities of the 1990s was the national so-called war on drugs. Incarcerations in state prisons for drug-related crimes rose an astonishing 1,200 percent from 1980 to 1995, while nondrug commitments rose only about 100 percent (Figure 9).

Most of the large increase in drug-related commitments took place during 1985 to 1990 and continued at high levels through 1995 as a result of several sentencing reforms that mandated and increased sentences for drug-related crimes.³⁰ As a comparison, about 25 percent (88/349) of our subjects who were not Continued Without Finding received jail sentences to serve (Table 9), while about 90 percent of the drug-related convictions, half of whom had no prior convictions, were sentenced to prison (Scalia, 2001, Figure A).

²⁹ Emerson (1992) reports that prosecutors and fraud investigators in Florida prefer jail sentences, especially for repeat offenders. Our data show only a slight preference for that attitude by Massachusetts judges.

³⁰ The Sentencing Reform Act of 1984, effective November 1, 1987, and the Crime Control Act of 1984 mandated minimum sentences for drug and firearm offenses. The Anti-Drug Abuse Act of 1986 established 5- to 20-year minimum sentences for drug trafficking. The Violent Crime and Law Enforcement Act of 1994 carved out some exceptions for nonviolent drug offenders. (Scalia, 2001).

Probability of detection and expected severity of punishments played an essential role in the calculus needed for the criminal economic agent. As the subjective probability of arrest and conviction increased and the expected severity of punishment became harsher, the number of property crimes was to decrease (Sjoquist, 1973). A quarter-century later, no widely accepted model of risk perception formation is applicable across crime types (Nagin, 1998). Risk perceptions of street crimes start at naively high levels and are modified based on some implicit Bayesian updating when encounters with law enforcement occur. More realistic expectations can be formed at the start, as in the case of tax fraud, when the information asymmetries are less pronounced (wages other than cash are known) and the sanction policy is well known (fines, rare prosecutions). The primary objective of realistic behavioral theories is to be able to trace the effects of policy changes, such as drug-related offender sentencing, on the deterrence of future crimes.

According to Barnes (1999), deterrence can be general, affecting the risk perceptions of the population at large, or specific, affecting the actions of particular individuals or groups. The insurance fraud prosecution outcomes described above, such as jail and probation, are aimed at both deterrence objectives. General deterrence is to arise from making the public aware of actual detection and punishment of criminal acts, e.g., through our statistics in the case of Massachusetts insurance fraud. Specific deterrence should come from incapacitation in the case of jailed individuals and rehabilitation in the case of subjects given probation, fines, and restitution. Retribution and revenge, although arguably part of the general sentencing system, play little if any role in insurance fraud, perhaps with the exception of sanctioning professionals.

General deterrence is fostered by the entirety of the criminal justice system. "The criminal justice system threatens punishment to lawbreakers—through the police powers to arrest and investigate, the judicial power to adjudicate and sentence, and the corrections agencies power to administer punishments" (Nagin, 1998, p. 1). We should not expect, therefore, to see substantial general deterrence arising only from our statistics on insurance fraud. As the prior and subsequent offense data show (Table 14), our insurance fraud subjects are heavily influenced by the deterrence status of other crimes.

Has a deterrence effect been created in Massachusetts by means of the professional investigation of insurance fraud referrals by the IFB and the concentrated prosecution of worthy cases by the Massachusetts Attorney General, U.S. Attorney, and some local district attorneys?

Some positive signs exist for deterrence effects. First, the fact that only one of 543 subjects was referred to IFB for fraud after initial disposition (and that was a *nolle prosequi*) speaks to an effective specific deterrent for insurance fraud. Second, the recidivism rate for fraud subjects, appearing to show no differences from other property recidivism rates, indicates a lack of specific deterrence in general. Third, general deterrence appeared to have been ushered in for the WC line more by statutory changes than by fraud convictions. Lost-time claims fell from 37,798 in 1990–1991 to about 19,500 in 1998–1999 due to the 1990 reform law changes, one of which was the expansion of the IFB to formally cover WC (Derrig and Krauss, 1994; Gardner et al., 1996). Fourth, general deterrence in auto injury is signaled imperfectly by the BI/PD ratio, the number of injury (BI) claims per one hundred accidents (PD claims). That ratio had risen by 50 percent from 1984 to 1993, indicating an increase in discretionary claim filing (Cummins, 2001, p. 139, Figure 1; Weisberg et al., 1994). Since 1993, the ratio has ceased increasing but has stubbornly

resisted a significant decrease that would point to a clear deterrence of fraud and abusive claims. Thus the level of general deterrence in auto bodily injury fraud is currently indeterminate but tends to support some nonzero level of general deterrence.³²

Could a stronger deterrent effect emerge in the future? Yes. One prominent feature of deterrence is the threat of stigmatization. Individuals from the middle class (and presumably the upper class) are unwilling to put community standing and reputation at risk when the perception of detection and sanction of criminal behavior is nonzero (Nagin, 1998). Thus, regulatory agencies controlling the behavior of professionals in the insurance system can complement the effects of criminal deterrence with civil enforcement that is less costly and can have a visibly higher probability of detection and punishment and a lower burden of proof. The criminal sanction serves to control regulatory under-enforcement, especially where collusion or penalties may exist that are too low to be deterrence incentives (Garoupa and Gomez-Pomar, 2000). Finally, in theory at least, the claim payment system itself can be changed by statute or regulation to reduce the economic incentives for fraud and abuse while increasing the means to detect the fraud that still exists (Emerson, 1992, p. 908).

REFERENCES

- Barnes, W. L., Jr., 1999, Revenge on Utilitarianism: Renouncing a Comprehensive Economic Theory of Crime and Punishment, *Indiana Law Journal*, 74: 627-652.
- Becker, G. S., 1968, Crime and Punishment: An Economic Approach, *Journal of Political Economy*, 76: 169-217.
- Brown, J. M., and P. A. Langan, 1999, *Felony Sentences in the United States, 1996*, Bureau of Justice Statistics, U.S. Department of Justice.
- Coalition Against Insurance Fraud, 2001, *Annual Report*, Washington D.C.
- Cummins, J. D., 2001, *Deregulating Property-Liability Insurance, Restoring Competition and Increasing Market Efficiency* (Washington, D.C.: Brookings Press).
- Derrig, R. A., and L. Krauss, 1994, First Steps to Fight Workers Compensation Fraud, *Journal of Insurance Regulation*, 12: 390-415.
- Derrig, R. A., and V. Zicko, 2000, *Prosecution Outcomes 1991 through 1999* (Boston: Insurance Fraud Bureau of Massachusetts).
- Emerson, R. W., 1992, Insurance Claim Fraud Problems and Remedies, *University of Miami Law Review*, 42(4): 907-973.
- Gardner, J. A., C. A. Telles, and G. A. Moss, 1996, *The 1991 Reforms in Massachusetts: An Assessment of Impact* (Cambridge, Mass.: Workers Compensation Research Institute).
- Garoupa, N., and F. Gomez-Pomar, 2000, Punish Once or Punish Twice: A Theory of the Use of Criminal Sanctions in Addition to Regulatory Penalties, Discussion paper 308, Harvard Law School, Cambridge, Mass.

³² Auto theft is a crime index category that can often involve fraud in the criminal sense above. We do not deal with that crime here because another agency, The Governor's Anti-Theft Task Force, has successfully dealt with that problem since 1980. Indeed, insured theft claims dropped from 27,328 in 1991 to 12,339 in 2000. However, a strong case for general deterrence appears likely for this crime because theft claim losses per insured car-year have decreased each year since at least 1986 to a current level of less than \$15 per car-year, or one-sixtieth of the average auto premium in Massachusetts.

- Hoover, H. A. M., 2001, Recidivism of 1996 Released Department of Correction Inmates, Massachusetts Department of Correction, Concord, Mass. World Wide Web: <http://www.magnet.state.ma.us/doc>.
- Insurance Research Council and Insurance Services Office, 2001, *Fighting Insurance Fraud: Survey of Insurer Anti-Fraud Efforts* (Malvern, Pa: IRC/ISO).
- Kuziemko, I., and S. D. Levitt, 2001, An Empirical Analysis of Imprisoning Drug Offenders, NBER Working paper 8489.
- Nagin, D. S., 1998, *Criminal Deterrence Research at the Outset of the Twenty-First Century*, in: M. Tonry, ed., *Crime and Justice, A Review of Research* (Chicago: University of Chicago Press).
- Ross, H. L., 1970, *Settled Out of Court* (Chicago: Aldine Publishing).
- Scalia, J., 2001, Federal Drug Offenders, 1999 With Trends 1984-1999, Bureau of Justice Statistics, U.S. Department of Justice.
- Sjoquist, D. L., 1973, Property Crime and Economic Behavior: Some Empirical Results, *American Economic Review*, June 63(3): 439-466.
- Sourcebook of Criminal Justice Statistics, 2000, Bureau of Justice Statistics, U.S. Department of Justice.
- Spelman, W., 2000, What Recent Studies Do (and Don't) Tell Us about Imprisonment and Crime, in: M. Tonry, ed., *Crime and Justice, A Review of Research* (Chicago: University of Chicago Press).
- Weisberg, H. I., R. A. Derrig, and X. Chen, 1994, Behavioral Factors and Lotteries Under No-Fault with a Monetary Threshold: A Study of Massachusetts Automobile Claims, *Journal of Risk and Insurance*, 61: 245-275.
- Wilson, J. Q., 1983, *Thinking About Crime*, revised ed. (New York: Basic Books).