



THE SCOPE OF THE PROBLEM

AN OVERVIEW OF FRAUD PREVALENCE MEASUREMENT

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LETTER FROM THE DIRECTOR

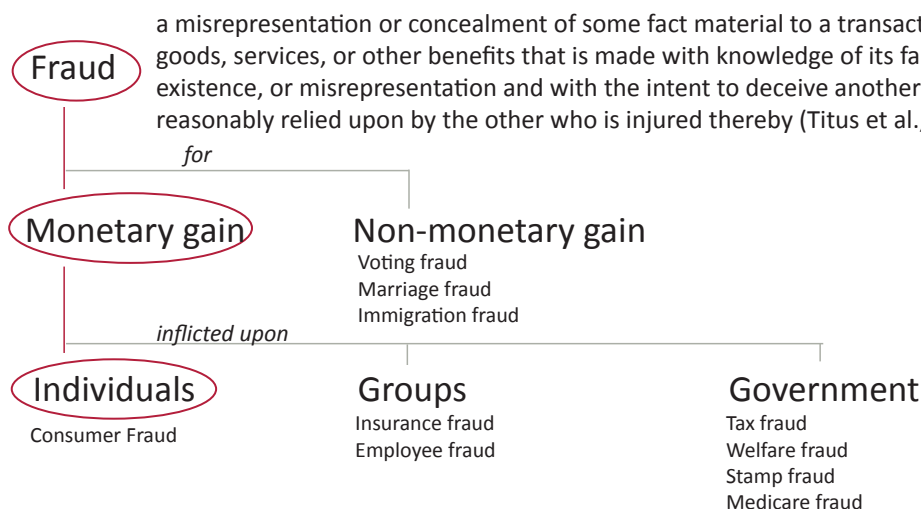
Dear Colleagues,

Launched in 2011, the Financial Fraud Research Center (FFRC) is a collaboration between the Stanford Center on Longevity and the FINRA Investor Education Foundation. This initiative grew out of a meeting of experts who gathered at the Stanford Center on Longevity to discuss the devastating impact of financial fraud. Acknowledging that the field could benefit from greater collaboration, the group was interdisciplinary – with representation from academia, regulatory agencies, practitioners, and policymakers.

The Financial Fraud Research Center uses a three-pronged approach to advance the fight against financial fraud:

- We consolidate research and information in accessible language.
- We connect research to practice through events, publications, and other initiatives.
- We catalyze further research through seed funding.

The focus of the FFRC is individual consumer victimization. Measuring and preventing fraud that targets organizations or governments (such as embezzlement, corruption, and tax evasion) is the express purpose of several other organizations. Our resources are dedicated to understanding, detecting, and preventing consumer-targeted scams: what we term “consumer financial fraud,” defined below.



In 2012 we released the Center’s initial survey document, *Scams, Schemes, and Swindles: A Review of Consumer Financial Fraud Research*. This report provided a broad outline of what we know (and what we have yet to learn) about consumer financial fraud – its prevalence, victims, perpetrators, and methods – with the intention to expand each section in forthcoming reports.

This report, *The Scope of the Problem: An Overview of Fraud Prevalence Measurement*, takes a closer look at the question of fraud prevalence. Without accurate and reliable estimates of fraud, it is difficult to understand what works or does not work to protect victims from harm. Unfortunately, current estimates of fraud prevalence vary widely, making it difficult for law enforcement, researchers, and policymakers to appreciate the true scope of the problem.

This report aims to reconcile the variability of financial fraud prevalence estimates, to explain why it is so difficult to obtain reliable and valid estimates, and to suggest ways to improve fraud prevalence measurement.

Specifically, this report:

- Places fraud prevalence research within the broader context of criminology and victimology research to see what we can learn from these fields.
- Provides an overview of the various methods and organizations that measure victimization in general, and fraud victimization in particular.
- Places fraud prevalence research within the broader context of survey methodology research to discuss how scientific advances in research and analysis can be used to improve the design of fraud surveys.
- Identifies ways to increase the validity and reliability of fraud prevalence measures, and outlines areas for future research.

We hope that this report will provide an informed foundation to the issue of fraud prevalence, will serve to connect practitioners and researchers, and will identify clear research directions surrounding consumer financial fraud measurement.

We encourage you to share your thoughts and responses to this white paper with us directly and to explore additional resources online at fraudresearchcenter.org.



Martha Deevy
Director, Financial Fraud Research Center



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EXECUTIVE SUMMARY

There is no question that financial fraud is a pressing concern. With billions of dollars in losses impacting an estimated tens of millions of victims, fraud is a major problem (e.g. Anderson, 2013). But the wide range of fraud prevalence estimates makes it difficult for law enforcement, practitioners, and policymakers to assess the true scope and impact of the problem.

Section I of this report provides the context and methodological background necessary for evaluating fraud prevalence measurement. Specifically, this section describes the traditional methods of measuring incidence and prevalence—with a particular emphasis on survey methodology—and outlines the organizations that measure crime generally and fraud specifically.

In sum, there are two primary sources of data for victimization prevalence and incidence estimates: 1) self-report complaint data from agencies; and 2) data from surveys. The former counts actual incidents of fraud that were reported to authorities, while the latter estimates victimization on the national scale based on the experience of a surveyed sample.

Fraud victimization has historically been overlooked in the greater criminology and victimology literature. Indeed, the two sources of official crime statistics in the United States, the FBI's *Uniform Crime Report* (agency data), and the *National Crime Victimization Survey* (survey data), both largely ignore fraud victimization. Thus, data used to assess the prevalence of fraud come from other organizations or surveys that address fraud specifically.

Section II describes the range of fraud prevalence and cost estimates found in seminal and recent studies. This section illustrates how analyzing data sources and survey methodology helps explain variable prevalence estimates. Issues of fraud under-reporting and under-admitting are also addressed in this section.

In short, fraud prevalence estimates vary widely. Complaint data, though increasing over time, still vastly underestimate the scope of the problem due to the large number of victims who do not report to authorities. Surveys are therefore the most common method of collecting prevalence data. Yet victimization rates vary even among surveys. This is due to a variety of factors, including different sample populations, different prevalence periods, different definitions of fraud, and different question wording.

Survey measures rely on the accuracy of individuals' self-reports and on their willingness to share information with interviewers. Surveys about victimization are at a particular disadvantage because respondents may not want to discuss stigmatizing or traumatic events. This makes it especially important to understand how survey design elements can influence obtained rates of victimization.

Section III describes what we can learn about prevalence measurement from other crimes. Indeed, fraud is not the only crime that is difficult to quantify. We can look to the history of addressing issues of measurement in other crime domains, such as rape, missing children, and elder abuse, to learn valuable lessons about encouraging reporting.

Placing fraud within the broader context of victimology and survey methodology research helps us understand the current limitations of fraud prevalence estimates, and provides direction for how we might increase the accuracy of measurement in the future.

I. PREVALENCE MEASUREMENT

Guiding Questions:

- What are the traditional methods of measuring incidence and prevalence?
- What are the advantages and disadvantages of each method?
- What are the different types of surveys?
- What are potential sources of bias in survey data?
- What organizations measure victimization in general, and fraud victimization in particular? How do they collect their data?

Section Summary:

There are two primary sources of data concerning victimization prevalence and incidence: 1) complaint data from agencies and institutions, and 2) data from surveys that ask participants about their experience with victimization. When analyzing prevalence data, it is important to consider the source of the data and what the numbers truly mean. If a study reports complaint data, for example, then the numbers constitute actual incidents of victimization that were reported to, and counted by, authorities. If the national number of incidents comes from a survey, the number is an estimation based on the experience of the sample population. Furthermore, the incidents of fraud counted in surveys include both those that were reported to authorities and those that went unreported. Since so many incidents of victimization are not reported to authorities, estimates of national victimization from surveys are much larger than the number of cases reported to authorities and included in complaint data counts. This is not an inherent failing on the part of agency data, but reflects the different purpose of data collection.

Surveys are the most common method used to collect prevalence data regarding fraud victimization. The reliability and validity of surveys are affected by both the quality of the survey and the quality of the respondents' answers. Fortunately, well-designed surveys can mitigate many of the cognitive biases that lead respondents to offer less-than-thoughtful or inaccurate response.

The two main sources of official crime statistics in the United States both largely ignore fraud victimization. The primary source of agency data, the *Uniform Crime Report* (conducted by the Federal Bureau of Investigation), currently does not include fraud in its list of closely watched crimes. The report does count the number of suspects arrested for fraud, but this excludes the vast number of fraudsters who are not detected, let alone arrested. The main source of crime survey data, the *National Crime Victimization Survey*, included questions about computer crime, including fraud, in 2001, but replaced them with questions about identity theft in 2004 (Rennison & Rand, 2007 cited in Addington, 2008). Thus, fraud prevalence data generally come from other organizations or surveys that address fraud specifically. The Federal Trade Commission, for example, has both a source of complaint data (The Consumer Sentinel Network database) and conducts a large-scale population survey concerning fraud victimization (*Consumer Fraud in the United States*).

Sources of prevalence data on crime and victimization

1) Agency/institution data are the official reports of law enforcement departments or complaint data from consumer or protective service agencies. These data, though not necessarily intended as prevalence or incidence measures, nonetheless offer information about the general levels of crime and victimization throughout the nation.

Agency data offer several advantages:

- Data are often compiled annually or at regular intervals, which allows for evaluation of trends over time.
- Data are often gathered from all over the United States, which makes geographic comparisons possible.
- There are typically standardized definitions within agencies, although the definitions of fraud, and to a lesser extent, those of particular crimes, often vary among organizations.
- Large amounts of information are gathered.

On the other hand, agency data have several limitations:

- The statistics only report on cases reported to the police or official agencies.
- Some sources of institutional data, like the *Uniform Crime Report* conducted by the Federal Bureau of Investigation, typically only cite data on victimizations that result in arrest.

2) Survey data derive from interviews with samples of people that ask about their experiences with crime and victimization. Self-report surveys were first conducted by criminologists who promised anonymity to respondents if they would admit to crimes they had committed. Such surveys consistently showed that the levels of crime reported to law enforcement were but a fraction of the crimes committed. After criminologists illustrated the utility of such surveys, researchers in the new field of victimology, which focuses on study of the victim experience, began conducting surveys of their own – this time asking people to share their experience with victimization.

This method has two key advantages compared to using agency data:

- Surveys can assess instances of victimization that are not reported to authorities. Because most crime is not reported to the police, surveys may be better at assessing the true rate of victimization.
- Well-designed surveys can provide estimated rates of victimization for the whole population based on the experience of a smaller sample.

Still, surveys have limitations:

- Because victimization within the previous year or six months is a relatively rare event, a large sample of people must be polled to meet the requirements for statistical soundness. As a result, many surveys are very expensive to carry out.
- Victimization rates obtained from survey research must always be viewed as estimates that contain a margin of error, whose magnitude is largely dependent upon the representativeness and size of the sample.
- Even though surveys capture incidents of fraud victimization that were not reported to authorities, they still do not capture the potentially large number of incidents that victims do not remember or are unwilling to admit.
- Survey results are influenced by numerous aspects of the survey design, including context, question wording, and whether the survey is administered by an interviewer or is self-administered.

Survey quality

Given the frequent use of surveys to estimate fraud prevalence, it is important to understand the quality of survey measurement in general and to be familiar with the various types of surveys that are available. In addition, knowledge of the various factors that affect survey measurement helps us make sense of the range of fraud prevalence estimates in the literature.

Relevant Terminology

Prevalence refers to the number of people who have ever experienced the particular condition or issue, in this case fraud victimization, and *incidence* refers to the number of new cases in a specified time, typically one year.

Reliability and *validity* are two key statistical concepts often used to evaluate the quality of survey data. The concept of reliability is often defined in terms of the consistency of measurement – *are the results consistent across repeated measurements?* Validity refers to the extent to which measurement is capturing the intended concept – *are you measuring what you want to measure?*

Sample Quality

Survey data are accurate only to the extent that the sample has adequate coverage and is truly representative of the population under study. In a national survey, for example, the ideal scenario is a random sample of U.S. adults who all had the same chance of being selected, and who share the characteristics of the U.S. population as a whole. If the sample is biased (in terms of age, gender, race, or location, among other variables), then the projections made about the U.S. population as a whole will be skewed. Survey designers must also take measures to reduce levels of nonresponse and account for the fact that the respondents who complete the survey may differ from those who were contacted, but did not participate (selection effects).

There is a level of uncertainty in all surveys that results from using a sample rather than a census. This degree of uncertainty is largely a function of sample size (bigger is better) and is captured by standard statistical methods as standard errors of the estimates.

Response Quality

In addition, the credibility of what respondents tell interviewers remains a matter of concern. In recent years, survey designers have begun to incorporate findings from cognitive science and have identified a common theme that respondents take mental shortcuts to reduce the cognitive effort required to answer questions, leading to less-than-thoughtful or inaccurate responses (see Tourangeau & McNealey, 2003). Several biases, both unconscious and conscious, can affect the quality of what respondents tell interviewers:

- **Memory decay**, or forgetting about incidents, results in loss of information about victimization. This is particularly relevant for information about minor offenses that did not involve serious expense and for incidents affecting the older population, who may have more difficulty with recall. This clearly contributes to the problem of under-reporting in surveys.
- **Forward telescoping**, or the tendency to vividly remember emotionally significant events, causes many respondents to believe that victimization occurred more recently than it actually did. Many respondents therefore report instances of victimization that occurred long before the typical research reference periods of six or 12 months. This leads to “over-reporting,” in which participants report more incidents of victimization than are valid for the time-frame in question.
- **Primacy effects**, where options are more likely to be selected when they are presented early, and **recency effects**, where options are more likely to be selected when presented last, can also compromise response quality.
- **Social desirability bias** results in respondents stretching the truth, or outright lying, in order to give the response they believe is socially desirable for either the interviewer or society at large. This bias is closely related to **interviewer effects**, in which interviewer presence or particular characteristics influence respondents’ answers. Given the frequent stigmatization of fraud victims, these biases likely play a large role in the high rates of under-reporting and under-admitting found in fraud prevalence studies.
- **Context effects** may also affect the accuracy of survey responses. In determining the true intent of a survey question, respondents may rely on context cues rather than the precise wording of the question. The presentation of a survey—in the survey introduction, the advance letter, even the name of the study—can shape respondents’ understanding of their task and their interpretation of individual questions in the interview. Prior items on a survey can also affect answers to later ones. The earlier items sometimes provide an interpretive context for later questions, which could be either beneficial or detrimental, depending on the intended relationship between the items. As an example of these context cues, a question about rape in the *National Crime Victimization Survey*, which is full of other questions about crime, may lead respondents to omit sexual victimizations that they don’t believe fall under the umbrella of crime.

Survey Design

Fortunately, many biases can be mitigated by well-designed surveys. For example, several biases are responsive to questionnaire design and wording. A potential solution to memory decay is to use behaviorally specific questions that cue the respondents’ recall. Instead of asking respondents if they have ever experienced fraud in general terms, asking about specific types of fraud (e.g. foreign lottery, investment, business opportunities) not only defines the topic, but also activates more detailed memory retrieval. In addition, randomizing questions and response options removes primacy and recency effects.

Similarly, there are structural solutions to forward telescoping (in which respondents remember vivid events as occurring more recently) called bounding procedures. In longitudinal studies, bounding is achieved by instructing participants to report only incidents that have occurred since the previous interview and are reminded of the incidents they reported then. The results of the first interview, which are necessarily unbounded, are discarded. An alternate bounding procedure that is appropriate for one-time surveys uses some sort of temporal landmark, like the eruptions of Mt. St. Helens

or New Year’s Day, to identify the beginning of the recall period (Loftus & Marburger, 1983).

There are also several ways to decrease social desirability bias through survey design. Some studies have found that social desirability bias is reduced when surveys are self-administered, rather than administered by an interviewer.

- White respondents in one study reported more racial prejudice on a self-administered questionnaire than to an interviewer-administered one (Krysan, 1998).
- Respondents in many studies were more likely to report illicit drug use under self-administration than orally to interviewers (Tourangeau & Yan, 2007).

Another way to decrease the bias is to legitimize the socially undesirable behavior with forgiving question wording. This can be achieved by stating in the question that many people do not engage in the socially appropriate behavior. For example, one study added this to a survey of voting behavior: “In talking to people about elections we often find that a lot of people were not able to vote because they weren’t registered, were sick, or just didn’t have the time.” This wording indeed reduced the number of subjects who reported voting (Holbrook & Krosnick, 2005 cited in Krosnick & Presser, 2010). One could easily imagine crafting a fraud survey in which a question begins, “In talking with people about fraud victimization, we often find that very intelligent people find themselves victims of lottery schemes.”

Another novel tactic to motivate respondents to answer truthfully is to prime for honesty. For example, Rasinski, Visser, Zagatsky, and Rickett (2005) used a procedure in which participants first completed a task that required them to assess the similarity between words before filling out a questionnaire that included sensitive topics. For some of the participants, the words in the similarity task were related to honesty; for the others, none of the words were related to honesty. Interestingly, the participants who were primed with honesty-related words were significantly more likely to report various drinking behaviors than the other participants.

Lastly, when designing surveys, researchers must be aware of the potential impact of context. The context of a survey question encompasses a wide range of potential influences, from the reputation of the organization conducting the survey to the topics preceding a given question, so there is not one solution to address context effects. Some potential context effects could be addressed by modifying the introductory text, survey name, or item orders, but others, such as the organization name or reputation, may not be modifiable. In those cases, the effect of context must be considered when interpreting the survey results.

Errors occur in virtually all survey measurement, regardless of the survey content or the organization conducting the study. Understanding which biases are likely to affect particular datasets is necessary in order to design surveys that reduce potential error.

Summary of Biases and Solutions

Bias	Potential Solution
Memory decay	<ul style="list-style-type: none">• Behaviorally specific questions
Forward telescoping	<ul style="list-style-type: none">• Bounding
Primacy and recency effects	<ul style="list-style-type: none">• Randomized question and/or response order
Social desirability bias/ interviewer effects	<ul style="list-style-type: none">• Self-administration of survey• Forgiving question wording• Priming for honesty

Survey administration and considerations

There are several different methods of administering surveys—including in-person, over the phone, in the mail, and via the internet— and each has a different set of advantages and considerations. Conducting surveys via telephone (rather than in-person) became increasingly common as telephone use in the U.S. became nearly universal. Telephone surveys can be conducted more quickly and cost-effectively than in-person interviews. In addition, data collected via telephone are of equivalent quality, reliability, and validity to those from in-person interviews. The cost benefit is slowly lessening each year, as more of the U.S. population must be sampled via cell phone numbers at considerable expense. Telephone surveys are more expensive than mail and Internet surveys, but their other advantages for addressing error (good population coverage, higher response rates, dynamic interviewing) generally outweigh this comparative cost disadvantage (Lavrakas, 2010).

Prior to the 1990s, most telephone surveys were conducted by interviewers reading questions from paper questionnaires and recording answers with pencils. By the late 1990s, this approach had been almost entirely replaced by CATI (computer-assisted telephone interviewing), in which a computer guides the interviewer through the introduction and questionnaire. CATI controls the sample of telephone numbers dialed, makes complicated skip patterns, can randomly order sequences of items, can fill previous answers into the wording of subsequent items, and enters respondents' answers into a database (Lavrakas, 2010).

A relatively new concern for telephone surveys is the advent of number portability, which limits the researchers' knowledge of the geographical location of the respondent. As of 2008, more than two million people had ported their landline telephone numbers to wireless service (Stroup & Vu, 2009 cited in Lavrakas, 2010).

Another growing concern for survey research are the declining response rates evidenced since the mid-1990s. In the U.S., this is thought to be related to several factors, including the public's negative response to telemarketers, increased prevalence of caller ID, and a general decrease in the public's willingness to cooperate with telephone surveys. Surveys of those sampled via cell phone have even lower response rates than landline surveys, often falling below a 20% response rate (Lavrakas, Shuttles, Steeh, & Fienberg, 2007). Especially troubling for survey researchers is a finding reported in a 2003 panel of the Council for American Survey Research Organizations (CASRO):



Approximately **two** in **five** adults in the U.S. public would like to extend the Do Not Call list restrictions to restrict calls from polls and surveys.

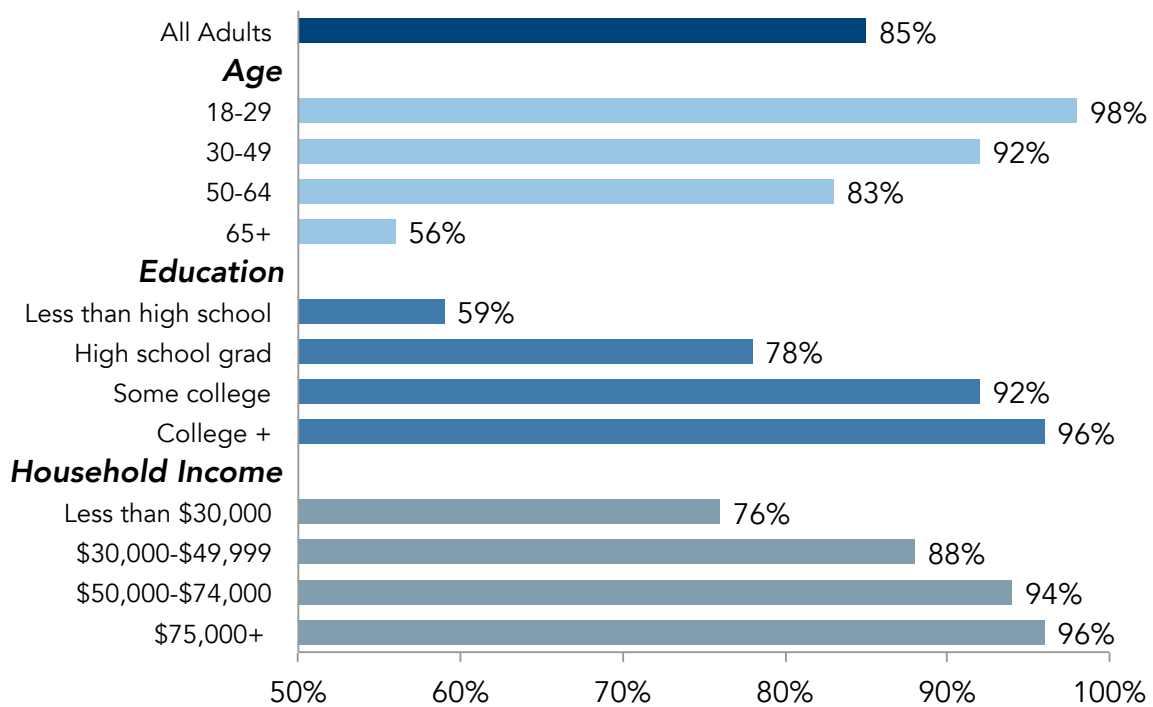
(CASRO, 2003 cited in Lavrakas, 2010)

One of the most effective ways to reduce the nonresponse rate in telephone surveys is to make an advance contact with the sample household via mail. Researchers have reported gains in response rates of 10 percentage points with \$2 mailed in advance of telephone contact in a large landline survey (Lavrakas & Shuttles, 2004 cited in Lavrakas, 2010).

Online surveys made up 40% of all U.S. commercial research in 2006 (Couper & Bosnjak, 2010), but Internet surveys are not as popular with academic and government survey sectors. The main benefit of conducting surveys on the Internet is the speed with which large numbers of people can be contacted at low cost. Internet surveys have the benefits of modern computer-assisted-interviewing software, like accommodating a variety of question types, customizing question wording or fills, delivering questions to a respondent based on answers given previously, editing and validating data in real time, and randomizing the order of questions (Couper & Bosnjak, 2010).

On the other hand, there are several disadvantages to using Internet surveys. The largest challenges are coverage error, unrepresentative samples, and nonresponse error. Despite rapid growth in internet use, access is still not universal and remains uneven with respect to different demographic groups. This means representative samples are difficult to obtain. Internet users in the United States have increased from 14% of the adult population in 1995 to 53% in 2000, 69% in 2005, and 85% by 2013, according to the Pew Internet & American Life Project. Internet access disparities remain among those with different income, education, racial and ethnic groups, household types, and age groups. For example, 56% of the 65+ population uses the Internet, compared to 98% of those ages 18-29 (www.pewinternet.org).

Percentage in each group who use the internet, 2013



Source: Pew Research Center’s Internet & American Life Project, 2013

Another practical consideration makes it difficult to obtain a sample of Internet users for a survey: there is no list of e-mail addresses for the general public of Internet users. Whereas the analogous situation of unlisted phone numbers can be circumnavigated by using random digit dialing (RDD), the complexities of e-mail address formats preclude the generation of valid e-mail addresses at random.

Nonresponse is another major disadvantage of Internet surveys. Although this issue plagues all types of surveys, Internet surveys are particularly susceptible to declining rates of participation, in part because the vast number of surveys on the web makes it difficult for consumers to distinguish the good from the bad. Indeed, a 2008 meta-analysis comparing Internet surveys to other modes found that, on average, Internet surveys yielded 11% lower response rates (Manfreda, Bosnjak, Berzelak, Haas, & Vehovar, 2008).

Organizations that measure crime and fraud

General Crime Statistics

There are two main sources of information regarding general crime statistics in the United States—the *Uniform Crime Report* (UCR), conducted by the Federal Bureau of Investigation and the *National Crime Victimization Survey* (NCVS), conducted on behalf of the Bureau of Justice Statistics. In the global arena, the *International Crime Victims Survey* (ICVS) is the most comprehensive measure developed to monitor crime across multiple countries.

Complaint Data—

The Uniform Crime Report (UCR): Crime in the United States is a large-scale repository of all criminal incidents known to local, county, and state police departments across the country. Crime statistics are based largely on victims' complaints, and to a lesser extent, on officers' direct observation. The UCR was established in 1927, and since 1930, the FBI has published crime data that was supplied voluntarily by police departments across the United States. The UCR is divided into two parts. Part I focuses on eight crimes that are often conceptualized as "street crime." Four count violent attacks directed "against persons": murder, forcible rape, robbery, and aggravated assault. The other four are crimes "against property": burglary, larceny (theft), motor vehicle theft, and arson. For each crime, the FBI compiles information about the number of incidents reported to the police, the total estimated dollar loss for property crimes, the proportion of cases solved, and some characteristics of the suspects arrested. The UCR does not distinguish reports of attempted crime from completed crime. Part II focuses on data about the number of suspects arrested for 21 offenses, including embezzlement and fraud. The FBI instructs police departments to implement the hierarchy rule when recording incidents, which entails listing the event under the heading of the most serious crime that took place (Karmen, 2013).

The UCR is currently converting its data collection to a National Incident-Based Reporting System (NIBRS) that will vastly improve the accuracy and completeness of the report. In the new system, the hierarchy rule will be abandoned, more detail will be collected about victims, and the number of closely watched crimes will increase from eight index crimes to 46 Group A offenses from 22 categories of crime. The new Group A offenses consist of crimes that were previously monitored only in Part II (including fraud, swindles, and con games) or not at all (Karmen, 2013). Law enforcement officials identified the need for more detailed record keeping during the late 1970s, but implementation has moved slowly. As of 2008, the NIBRS data collection was being used in 31 states and the District of Columbia, which corresponds to coverage of 25% of the nation's population and 37% of law enforcement agencies (IBR Resource Center, 2011 cited in Karmen, 2013).

Survey Data—

The National Crime Victimization Survey (NCVS): Criminal Victimization in the United States, conducted on behalf of the Bureau of Justice Statistics, is an ongoing survey of a nationally representative sample of U.S. residential addresses. The precursor to the NCVS began in 1973 and was known as the National Crime Survey. The project was renamed the *National Crime Victimization Survey* in 1992 after some revisions. The NCVS is the primary source of information about the characteristics of criminal victimization that is not reported to law enforcement. Data regarding the frequency, characteristics, and consequences of criminal victimization are obtained twice a year from 49,000 U.S. households. Respondents are interviewed multiple times (the first time in-person) before they are "retired" from the sample. The NCVS uses a relatively short, six-month reporting period and bounded interviewing. The NCVS has four primary objectives: 1) to develop detailed information about the victims and consequences of crime; 2) to estimate the number and types of crimes that are not reported to the police; 3) to provide uniform measures of selected types of crimes; and 4) to permit comparisons over time and types of areas (Burgess, Regehr, & Roberts, 2010).

The survey has two main categories of crime: personal and property crimes. Personal crimes include rape and sexual attack, robbery, aggravated and simple assault, and pickpocketing. Property crimes include burglary, theft, and vandalism (Burgess et al., 2010). In 2001, NCVS included questions about computer crime such as fraud, viruses, and online threats, but these questions were removed and replaced with identity theft questions in 2004 (Rennison & Rand, 2007 cited in Addington, 2008).

The International Crime Victims Survey (ICVS), mainly coordinated by the United Nations Interregional Crime and Justice Research Institute and the United Nations Office on Drugs and Crime, monitors crime prevalence and attitudes toward crime in a comparative, international context. The data are from general population surveys that have been standardized to allow for comparison across countries. The ICVS began in 1989 in 14 industrialized countries, and was conducted again in 1992, 1996, 2000, and in 2004–05. Each survey expanded coverage so that in the 15-year timespan, more than 300,000 people were interviewed about victimization in 78 different countries (37 with national coverage). The data covers almost all industrialized countries, and more recent survey years have seen expansion into several developing countries.

The ICVS covers ten crimes: vehicle crimes (theft of a car, theft from a car, theft of a motorcycle, theft of a bicycle), burglary, attempted burglary, theft of personal property, and contact crimes (robbery, sexual offenses, and assault and threat). In most countries, additional questions have been included about street-level corruption, consumer fraud (including internet-based fraud and credit card theft), drug-related problems, and hate crime (Dijk, Kesteren, & Smit, 2007).

Fraud Statistics

Several organizations collect fraud complaints for the purpose of consumer protection and/or criminal prosecution and victim restitution. These data, though not intended as prevalence measures, are sometimes used to assess the general level of fraud afflicting the U.S. population or certain subgroups of the population. For example, state and local law enforcement agencies retain a great deal of information about fraud victimization and prosecution. Like all other organizations and agencies that deal with complaint data, state and local law enforcement records only describe instances of fraud that are reported to authorities. In addition to state and local efforts, many federal agencies collect or analyze fraud complaint data for the purpose of consumer protection or criminal investigation, including the Federal Trade Commission (FTC), the Securities and Exchange Commission (SEC), the Internet Crime Complaint Center (IC3), and the United States Postal Inspection Service (USPIS), among others.

The prevalence of fraud is typically measured using broad surveys that ask whether a respondent has experienced an incident of fraud in a specified time period. The percentage of those surveyed who have experienced fraud is then used as a proxy for the percentage of the entire U.S. population who has been victimized by fraud. Several organizations in the United States conduct these surveys, including the FTC, the National White Collar Crime Center (NW3C), AARP, the FINRA Investor Education Foundation, and various researchers at academic institutions.

Below are descriptions of several organizations that provide fraud prevalence measures. The list is not exhaustive, but includes the key players in fraud measurement in the United States and a few abroad.

Complaint Data—

The Better Business Bureau (BBB) is a nationwide organization that aims to promote ethical business practices by setting marketplace standards and distributing educational material. Consumers file complaints with the BBB regarding unfair—and often fraudulent— business practices.

The Internet Crime Complaint Center (IC3) is a partnership between the NW3C, the Federal Bureau of Investigation (FBI), and the Bureau of Justice Statistics (BJS). IC3 accepts online Internet crime complaints and refers them to law enforcement agencies for further action. IC3 releases annual reports which detail the type and amount of reported Internet crime and the dollars lost per victim.

The Consumer Financial Protection Bureau (CFPB) was created by the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 to protect consumers of financial products or services. The CFPB collects, investigates, and responds to consumer complaints, including fraud complaints.

The Securities and Exchange Commission (SEC) oversees the key participants in the securities world, and is therefore concerned with protecting investors from fraud. Each year, the SEC brings hundreds of civil enforcement actions

against individuals and companies for violating securities laws. Analysis of these cases offers insight into securities fraud prevalence.

The U.S. Commodity Futures Trading Commission (CFTC) is the federal agency that regulates the trading of commodity futures and options contracts. The CFTC reviews complaint information and takes action against those suspected of selling fraudulent products. Study of these cases provides information about commodities and futures fraud.

The United States Postal Inspection Service (USPIS) is the law enforcement branch of the U.S. Postal Service. The USPIS jurisdiction includes crimes that fraudulently use the postal system, including mail fraud (e.g. advance fee, boiler room, and investment fraud) and many other criminal statutes when the offense includes the mail, such as bank fraud, identity theft, credit card fraud, wire fraud, and Internet fraud.

Survey Data—

The National White Collar Crime Center (NW3C) is a nonprofit membership organization that provides a nationwide support system for law enforcement and regulatory agencies involved in the prevention, investigation, and prosecution of economic and high-tech crime. NW3C conducts periodic surveys to measure the public's experience with white collar crime, in terms of incidence of victimization, reporting behavior, and perceptions of crime seriousness. These survey reports are available via the NW3C website.

AARP has conducted and supported numerous studies that offer insight into fraud prevalence in the United States, particularly fraud affecting the older population.

The FINRA Investor Education Foundation has also conducted and supported several studies (many in collaboration with AARP) concerning investment fraud, including recent work about fraud prevalence among U.S. investors.

The National Fraud Authority (NFA) is the government agency that coordinates the anti-fraud response in the United Kingdom. The NFA works with wider government, law enforcement, industry, and other agencies to combat multiple types of fraud, including identify, mortgage, mass marketing, and corporate fraud. The agency accepts fraud complaints from U.K. citizens filed through Action Fraud, the national reporting service. In addition, the NFA publishes the Annual Fraud Indicator every year, which offers a comprehensive estimate of fraud cost and prevalence in the United Kingdom.

The Canadian Anti-Fraud Centre (CAFC) is Canada's central fraud data repository and national anti-fraud call center. The center gathers intelligence and receives complaints of mass marketing fraud, telemarketing fraud, identity theft, and deceptive marketing practices. The center analyzes data to prepare investigative reports for law enforcement agencies and releases quarterly and annual statistical reports.

Both Complaint and Survey Data—

The Federal Trade Commission (FTC), which is charged with preventing unfair or deceptive business practices in the United States, plays two key roles related to fraud prevalence. First, the FTC has conducted three large-scale surveys of Consumer Fraud in the United States (Anderson, 2004, 2007, 2013). These surveys are arguably the most comprehensive resources for fraud prevalence measures and allow for some comparisons across survey years. In addition, the FTC houses the Consumer Sentinel Network (CSN), a secure online database of millions of consumer complaints. The CSN includes 30 fraud categories ranging from prizes, sweepstakes and lotteries to investment-related complaints. The database includes complaints filed directly to the FTC, as well as complaints filed with state law enforcement agencies, federal agencies (e.g. the CFPB, IC3, and USPIS), and non-governmental organizations (e.g. Better Business Bureau and Green Dot). The Consumer Sentinel Network produces annual data books that describe the major complaint categories, the methods of consumer payment, and the demographic characteristics of complainants.

II. FRAUD PREVALENCE

Guiding Questions:

- What is the range of fraud prevalence estimates? How can understanding methodology help reconcile the variability?
- What is the cost of fraud?
- What is the range of fraud under-reporting estimates?
- What causes victims to report—or fail to report? How do those who report fraud differ from those who don't report their victimization?
- How many people fail to admit their own victimization?
- How can we reduce under-reporting and under-admitting?

Section Summary:

Fraud prevalence estimates vary widely. Complaint data, though on the rise, still vastly underestimate the scope of the problem due to the large number of victims who do not report to authorities. Because surveys capture incidents of fraud not reported to the police, they are much better at assessing the true level of fraud victimization. For example, the most recent Federal Trade Commission (FTC) survey of consumer fraud estimated that 37.8 million incidents of fraud took place in 2011 (Anderson, 2013). Yet the FTC Consumer Sentinel Network, the database of consumer complaints, received just over 1 million fraud-related complaints in 2011 (FTC, 2013).

Even among population surveys, however, prevalence estimates vary. This is due to a variety of factors, including different sample populations, different prevalence periods, different definitions of fraud, and different question wording. Estimates of general fraud victimization in the United States range from 4% (AARP, 2003; Holtfreter et al., 2008) to 16.5% (Huff, Desilets, & Kane, 2010) of the adult population. According to the *International Crime Victim Survey* (ICVS), the United States has a fraud victimization rate of 12.5%, which is higher than the ICVS international average of 10%. Though the number of fraud complaints has increased dramatically over time, limited data from surveys do not indicate that fraud victimization rates are increasing in the United States.

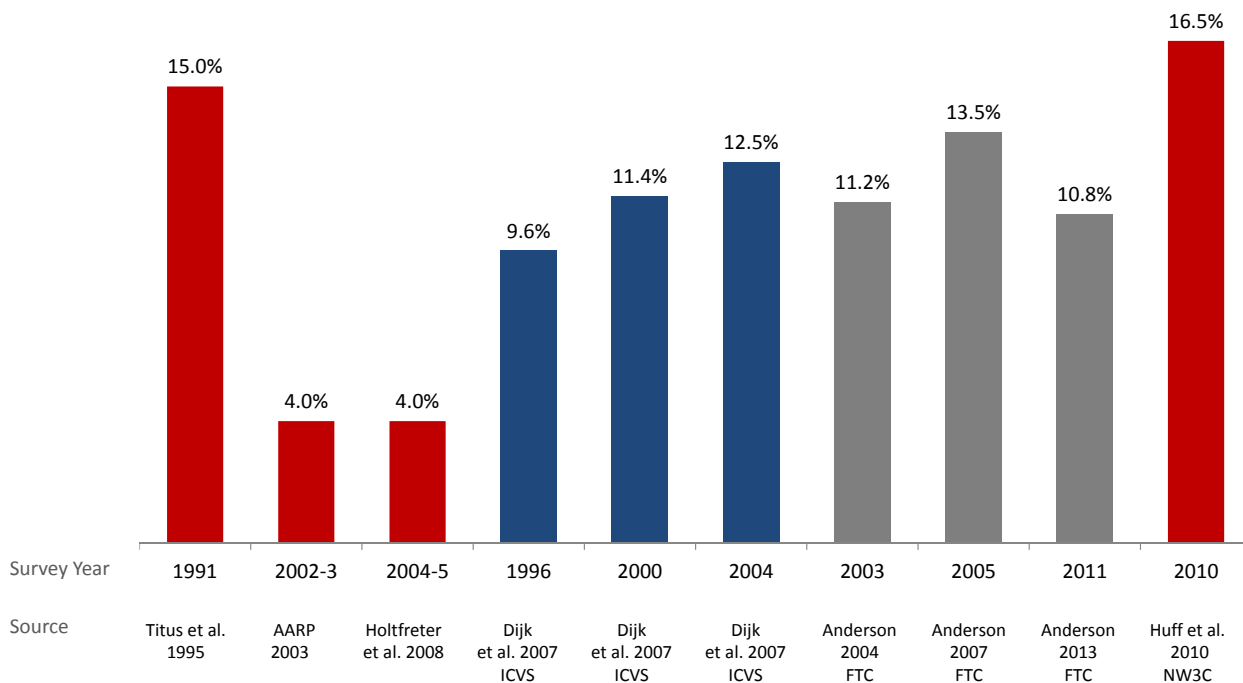
The amount of money lost to fraud each year is unknown, but certainly very high. Cost estimates vary depending on the type of fraud and whether the figures are from self-reported complaint data or surveys. Victims lost \$1.4 billion to fraud in 2012, as measured by complaints filed with the Consumer Sentinel Network (FTC, 2013). Updating Titus, Heinzlmann, and Boyle's (1995) oft-quoted \$40 billion figure for today's population, however, places the annual loss of fraud at more than \$50 billion.

Measures of fraud rely on the accuracy of individuals' self-report and on the willingness of individuals to share incidents of victimization. Given that many people fail to report or admit fraud, attempts to quantify the amount of fraud and its costs very likely understate its scope. There is some evidence that victims fail to come forward out of embarrassment, shame, a lack of confidence in authorities, or a combination of these reasons. A recent study of investment fraud found that two of the primary reasons victims fail to report are: "it wouldn't make a difference" and "I didn't know where to turn" (FINRA Investor Education Foundation, 2013). Successfully addressing these issues is a necessary step to encourage future reporting behavior.

A better understanding of reporting and under-reporting behavior may also help guide resources for consumers. Currently, while there are places victims can go to report fraud, many of these agencies were not chartered for consumer protection and lack the appropriate resources. Clarifying the proper reporting mechanism for consumers (like the recent creation of the National Fraud Authority in the United Kingdom) is a valuable service in itself, and allows for a more accurate picture of fraud for future research efforts.

Fraud prevalence rates

Rate of victimization among adult population in the past 12 months



Clearly, there are a range of fraud victimization estimates, which can be accounted for by several factors:

Different Sample Populations & Methods

One explanation for differing prevalence estimates is that many surveys have different target populations. Most of the above studies are derived from national samples of U.S. adults 18+, but the two studies that found the lowest rates of victimization have more limited samples. The AARP study (2003) applies to the population 45+, and Holtfreter, Reisig, & Pratt (2008) studied fraud victimization specifically in Florida. The authors of this study attribute Florida's lower victimization rates to the success of an aggressive public awareness campaign launched by the state of Florida during the summer of 2004. Clearly, we must exercise caution when generalizing the results of particular studies to the U.S. population at large.

Different Prevalence Periods

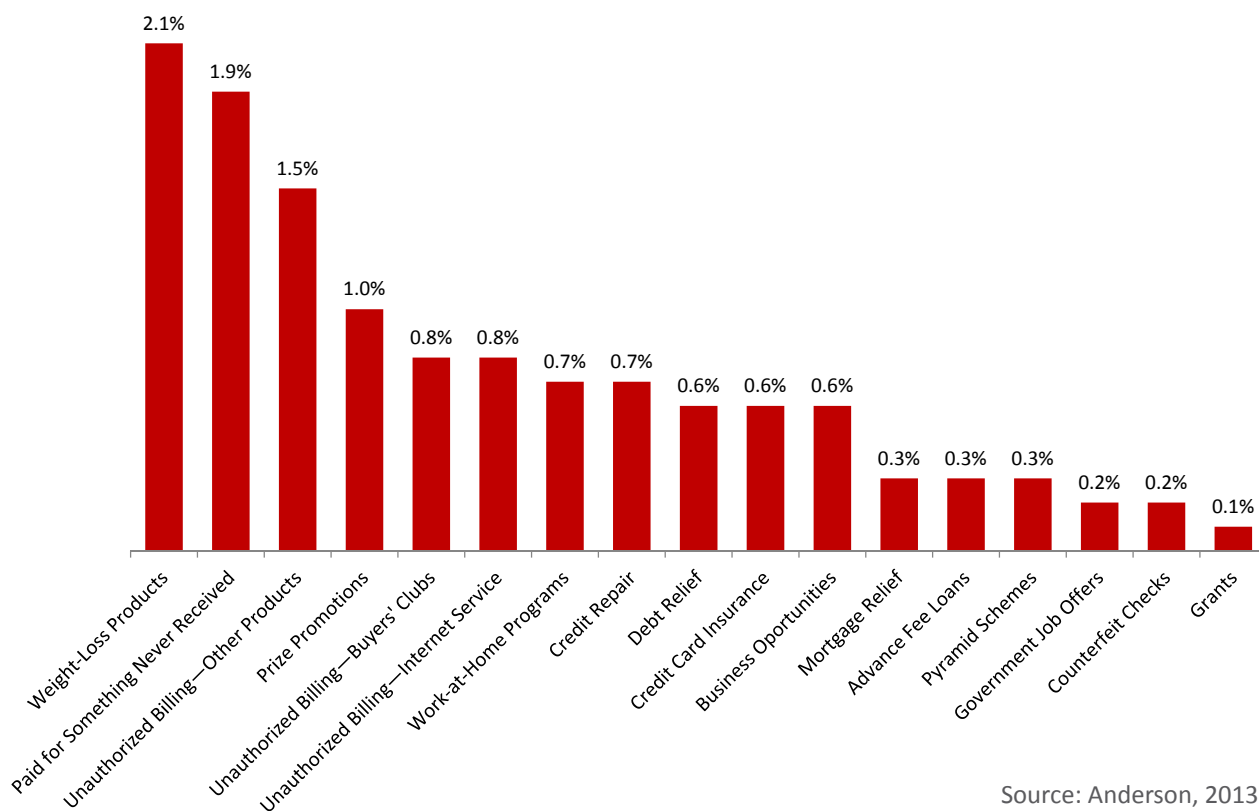
While most prevalence figures refer to victimization in the past 12 months, some surveys also assess the rate of victimization in shorter or longer timeframes (see detailed chart on pg 22-3). In the figure above, all prevalence estimates are for the 12 months prior to the survey. When analyzing data, it is important to understand the implications of different prevalence time periods. Victimization rates with different prevalence periods should not be directly compared, and rates with long time frames may not be as valid as those with shorter time periods because people tend to forget incidents of fraud that occurred a long time ago. For example, while seeking to correct problems in the first generation of the predecessor to the *National Crime Victimization Survey*, researchers conducted several reverse record checks in which they located crime victims' names in police files and then contacted them for a victimization survey. The data showed that memory decay increased over time and that the best recall was within three months (Hindelang, 1976 cited in Burgess et al., 2010).

Different Definitions of Fraud

Another common difference between surveys is the definition of fraud and how the respondents are asked about their experience with victimization. Because prevalence varies by scam type (see figure below), the categories of fraud included in the general victimization rate can have a large impact. In addition, surveys conducted by different organizations (and even some repeated measures by the same organization) often have different fraud categories and are not directly comparable. In the National White Collar Crime (NW3C) surveys, for example, identity theft is included in the definition of fraud, which likely helps to explain their higher victimization rates.

Asking consumers in an open-ended manner if they have been the victim of consumer fraud leaves each respondent with the task of defining what constitutes fraud. This can be avoided by asking about specific events with clearly defined standards. Some surveys, like the FTC consumer fraud survey, now avoid using the term “fraud” in their questions. The first FTC survey in 2003 asked participants generally if they felt they had been the subject of a consumer fraud and then asked more specific questions about particular experiences. The responses showed that many respondents who reported having experienced one of the specifically-defined frauds said they had not experienced a consumer fraud when asked the more general question (Anderson, 2013).

Rate of victimization among adult population by scam type, 2011 FTC Survey



Source: Anderson, 2013

In addition, some prevalence estimates distinguish between attempted fraud and successful fraud. For consistency, the included figures show only rates of successful victimization, but see the chart on page 22-3 for rates of attempted victimization. Titus et al. (1995) report that their survey (which was the first national study to measure personal fraud) was designed to measure both fraud attempts and successful efforts. For example, one of the survey questions asked whether “anyone ever sold or tried to sell you what they claimed was a lottery ticket, or a ticket of admission, which turned out to be fake” (Titus et al., 1995). In contrast, most other surveys are designed to inquire only about incidents in which victims were successfully defrauded and lost money.

Comparison of Fraud Studies

The following table provides a detailed description of seminal and recent studies of fraud prevalence.

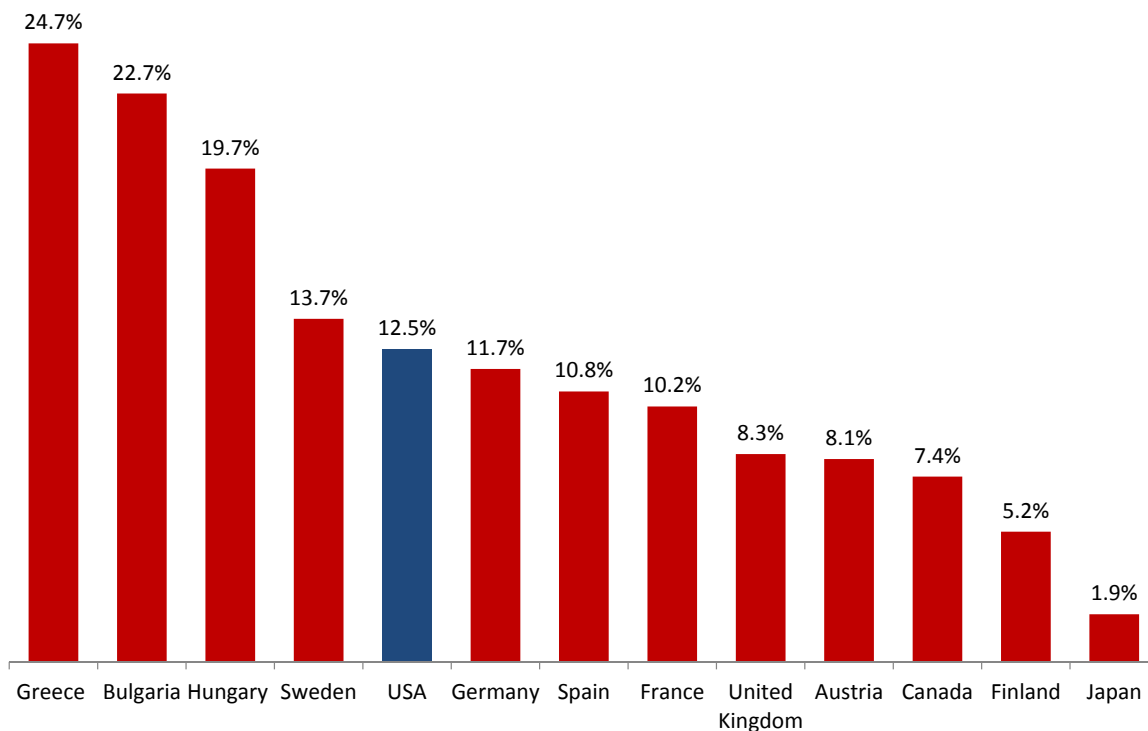
Study	Survey Year	Population	Sample Size	Prevalence Period	Victimization Rate Attempted	Victimization Rate Successful	Definition of Fraud
Titus et al., 1995	1991	U.S. Adults 18+	1,246	past 1 year lifetime	31% 58%	15%	personal fraud: 21 specific types and “other” category, including free prize, appliance/auto repair, card number, price, 900 number, other types, subscriptions, charity, warranty, work at home, health/beauty, insurance, home repair, broker/planner, credit repair, inspector, investment, ticket, fees/membership, pigeon drop, training course, bank official
Mason & Benson, 1996*	1994	Knox County (Tennessee) Adults 18+	400	past 5 years	57%	26%	13 specific fraud categories: unnecessary repair, incorrect repair, overcharged repair, guarantee/warranty, overcharged product, prize, credit card, charity, health club, insurance, investment, finance, beauty
AARP, 2003	2002-03	U.S. Adults 45+	1,500	past 1 year		4%	major consumer swindle or fraud [no specific examples given]
Holtfreter et al., 2008	2004-05	Florida Adults	922	past 1 year	15%	4%	consumer fraud: car/home repair fraud, retail sales, investment/insurance, promotion/prize, phony charity, other types of fraud
ICVS: Dijk et al., 2007	1996	16+	~2,000	past 1 year		9.6%	consumer fraud (including internet-based fraud and credit card theft)
ICVS: Dijk et al., 2007	2000	16+	~2,000	past 1 year		11.4%	same as above
ICVS: Dijk et al., 2007	2004-05	16+	~2,000	past 1 year		12.5%	same as above
FTC: Anderson, 2004	2003	U.S. Adults 18+	2,500	past 1 year		11.2%	12 consumer frauds: credit repair, credit card insurance, unauthorized billing for buyers’ club memberships, unauthorized billing for internet-related services, unauthorized billing for information services, business opportunity offerings with false earnings claims or false offers of assistance, government job promises, prize promotions, billing problems-other products, paid but not received
FTC: Anderson, 2007	2005	U.S. Adults 18+	3,888	past 1 year		13.5%	16 consumer frauds: weight-loss products, work-at-home programs, foreign lotteries, debt consolidation, advance fee loans, Credit Card Insurance, Credit Repair, Unauthorized Billing – Internet Services, Prize Promotions, Business Opportunities and Pyramid Schemes, unauthorized billing for buyers’ club memberships, government job offers, unauthorized billing for information services, Billing Problems-Other Products, Paid But Not Received

Study	Survey Year	Population	Sample Size	Prevalence Period	Victimization Rate		Definition of Fraud
					Attempted	Successful	
FTC: Anderson, 2013	2011	U.S. Adults 18+	3,638	past 1 year		10.8%	17 consumer frauds: weight-loss products, prize promotions, unauthorized billing—buyers' clubs, unauthorized billing—internet service, work-at-home programs, credit repair, debt relief, credit card, insurance, business opportunities, mortgage relief, advance fee loans, pyramid schemes, government job offers, counterfeit checks, grants, paid for something never received, unauthorized billing—other products
NW3C: Huff et al., 2010	2010	U.S. Adults	2,503	past 1 year lifetime		16.5% 62.5%	mortgage fraud, credit card fraud, identity theft, unnecessary home or auto repair, price misrepresentation, losses due to false stock-broker information, fraudulent business ventures, internet scams
FINRA Investor Education Foundation, 2013*	2012	U.S. Adults	2,364	lifetime	Direct Question: 14%	Direct Question: 4% Indirect Question: 11%	11 different types of financial offers known to be rife with fraud: email scam, free lunch, sales pitch, lottery scam, penny, stock, cold call, multi-level marketing, oil, & gas, pre-IPO, high-yield investment program (HYIP), promissory note scam, digital currency purchase

*not included in graph due to differing prevalence periods

Fraud prevalence by country

One-year consumer fraud prevalence victimization rates, by country, surveyed in 2004-05



Source: Dijk et al., 2007

According to a 2007 report of 30 countries in the *International Crime Victims Survey (ICVS)* sweep of 2004-05, over one in ten people have on average been a victim of a consumer fraud in the past year. Greece and Bulgaria each had unusually high rates of over 20%, and Japan had the unusually low rate of 2%. With a victimization rate of 12.5%, the United States had a higher fraud prevalence than the international average. Victims were also asked if the consumer fraud took place while they were buying goods on the internet. Nine percent of victims responded in the affirmative, which implies 1% of the national respondents have been the victim of internet fraud. This type of victimization was most common in the United States (3.3% of respondents), Poland, Germany, Bulgaria, and the United Kingdom (Dijk et al., 2007).

Interestingly, the report found no strong relationship between use of the Internet by national populations and the prevalence of Internet-based fraud. One might presume rates of victimization would be highest in countries with high Internet access, where there are more opportunities for victimization. However, Internet use is very common in Iceland and Finland, but Internet fraud was found to be rare in those countries. This lack of clear relationship warrants further study and interpretation. Perhaps the United States could look to the protections utilized in these countries as examples of what deters Internet fraud.

Fraud trends and why it's important to understand the data source

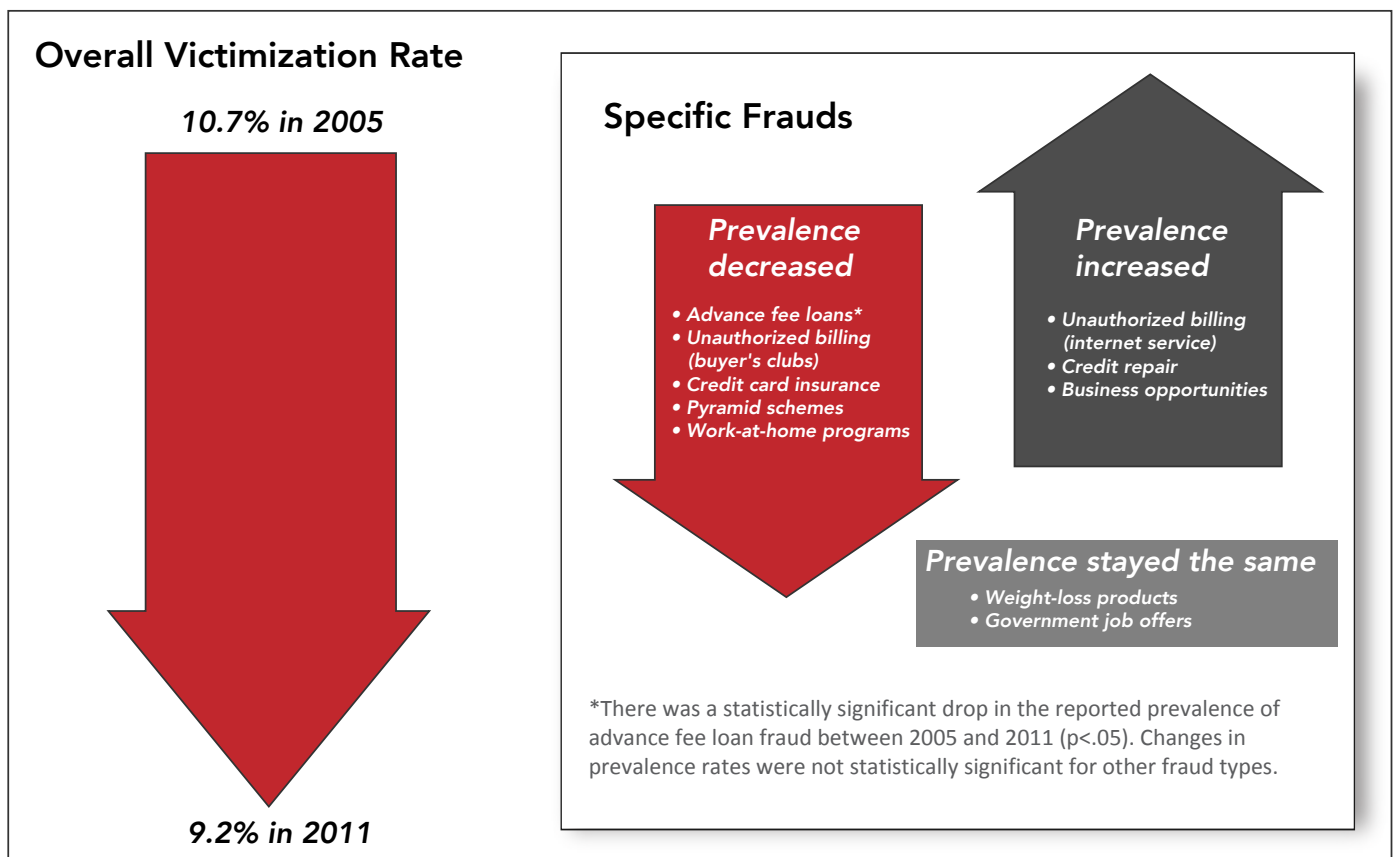
Many practitioners and researchers are not only interested in a one-time measure of fraud prevalence, but also seek to assess whether fraud is increasing or decreasing over time. Repeated studies by the same organization provide data that can assess trends over time. Both survey data and agency data offer insight into fraud trends, and the apparent contradiction between the two types of data speaks to the importance of understanding the source of the data and the purpose of its collection. See below for details.

Survey Data Trends

Two organizations have collected multiple surveys about fraud in recent years—the Federal Trade Commission (FTC) *Consumer Fraud in the United States*, and the National White Collar Crime Center (NW3C) *National Public Survey on White Collar Crime*. Differences in definitions of fraud, question wording, and victimization rates (household vs. individual) preclude direct comparison over time in the NW3C survey. Similarly, some changes to the three FTC surveys make direct comparison of their victimization rates invalid.

However, the 2005 FTC survey did have several questions that were not significantly changed from the 2003 survey. In general, there was little change in fraud prevalence. Only in the case of paying for a product or service but not receiving it was there a substantial change in victimization rates. An estimated 3.1% of consumers experienced this problem in 2005, up from 1.4% in 2003 (Anderson, 2007).

Similarly, the 2011 FTC survey had several questions that were unchanged from the 2005 survey, so it is possible to compare fraud prevalence estimates gathered from these questions. Overall, fraud prevalence (of those fraud types in both surveys) decreased from 10.7% in 2005 to 9.2% in 2011. At a more detailed level, the prevalence of most specific types of fraud decreased, some increased, and some stayed the same.

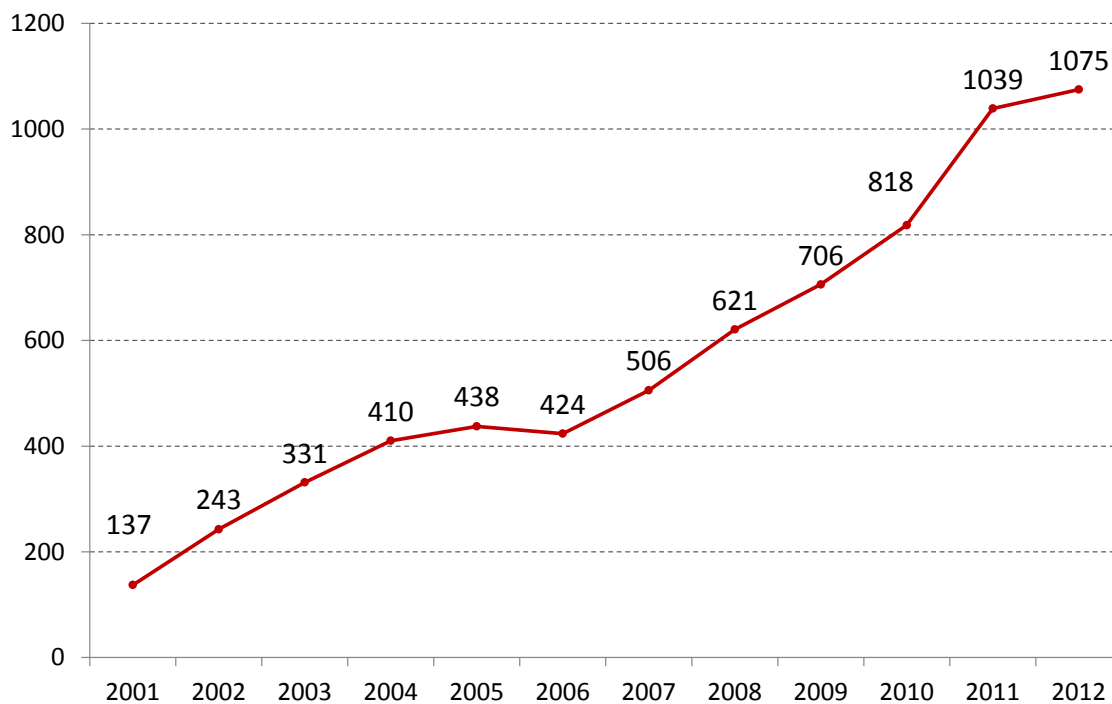


Source: Adapted from Anderson's (2013) Table 5. Prevalence of Fraud Victimization in 2011 and 2005 Surveys, Frauds Included in Both Surveys (p. 31). In "Consumer Fraud in the United States, The Third FTC Survey."

Complaint Data Trends

In contrast to the survey prevalence data, which do not show a general increase in fraud victimization rates, most agencies collecting consumer complaints have experienced dramatic increases in the number of complaints received in recent years. The Federal Trade Commission (FTC) documented an increase of almost 600,000 complaints of fraud, identity theft, and other crime complaints (a 40% increase) between 2010 and 2012. In 2012 alone, more than two million complaints were compiled through the FTC's Consumer Sentinel database. Of these complaints, over one million were fraud-related, with total losses to individuals exceeding \$1 billion (FTC, 2013). The Internet Crime Complaint Center (IC3) also registered a sizable increase in yearly complaints. In 2012, the IC3 received 289,874 consumer complaints with an adjusted dollar loss of \$525 million, an 8% increase in reported losses since 2011 (IC3, 2012).

Number of fraud complaints (in thousands) filed with the FTC Consumer Sentinel Network, 2001-2012



Source: FTC, 2013

Putting It Together

How do we make sense of the seemingly contradictory trend data? Complaint data suggest fraud is increasing dramatically, while survey data show that fraud victimization rates are relatively stable, if not decreasing.

In order to make sense of this paradox, we must consider both the source of the data, and how the numbers are presented. Take, for example, The Consumer Sentinel Network and the *Consumer Fraud in the United States* survey, both under the direction of the Federal Trade Commission (FTC). The Consumer Sentinel Network, the main source of fraud complaint data, details the *number* of complaints *reported* to authorities in a given time period. The FTC surveys, on the other hand, present the *percentage* of the population victimized by fraud (victimization rate), including both *reported and unreported* incidents. Thus, there are two key differences—**numeric presentation**: number of incidents (complaint data) vs. percentage of population victimized (survey data), and the **data pool**: fraud reported to authorities (complaint data) vs. both fraud reported and unreported to authorities (survey data).

Both the different modes of numeric presentation and different data pools can cause confusion. Consider the following points:

- Survey trend data using victimization rates (percentages of the population victimized) necessarily take into account increases in population over time because the denominator of the rate is the general population. Because the victimization rate is a function of both the number of victims and the size of the population, the absolute number of people victimized by fraud can increase without a concomitant increase in victimization rates.
- Because complaint data capture only incidents reported to authorities, the increasing numbers of complaints do not necessarily reflect a spike in fraudulent activity. Instead, they may reflect the growing ease with which fraud is reported to authorities via the Internet. In other words, the amount of fraudulent activity may be stable, but the proportion of fraud that is reported to authorities is growing, leading to higher numbers of complaints over time. In addition, complaint data do not control for population increase.

This further illustrates the importance of understanding the sources of data found in the literature and why measurement matters. Both victimization rates and absolute numbers are important, but serve different purposes. Rates of victimization are useful in understanding whether the threat of fraud is increasing, decreasing, or remaining stable, and complaint counts (though known to underestimate prevalence due to under-reporting to authorities) are still instrumental in the allocation of resources.

Cost of fraud

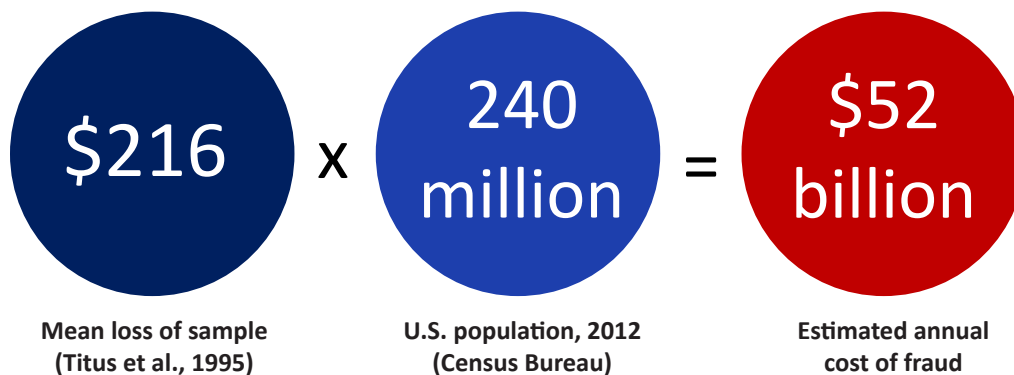
Overall Cost

Identifying the cost of fraud poses measurement problems similar to those found when assessing fraud victimization prevalence. Cost estimates vary widely depending on what types of fraud are measured and whether figures rely on self-reporting data or survey figures. Measuring cost is further complicated by the fact that there are many types of costs – personal monetary loss, psychological and physical cost, lost time, and loss of trust in the marketplace in general.

Estimates of personal monetary loss make use of available data from complaints or survey self-report. Estimates from complaint data do not include the large number of unreported incidents, and survey data do not include the potentially large number of unadmitted incidents. Neither source of data includes incidents the victims have forgotten or were unaware of, or any indirect costs (such as prosecution, detection, or non-monetary physical, psychological, or temporal costs).

The oft-quoted \$40 billion figure comes from Titus et al.'s (1995) seminal study of national fraud victimization. Applying the mean dollar loss of their sample to the 1991 U.S. population at large, the researchers estimated an annual loss from personal fraud in excess of \$40 billion. In this study, the mean amount lost was \$216, but some losses were as high as \$65,000 (Titus et al., 1995).

Updating the total loss figure for the 2012 U.S. population, the estimated annual cost of fraud is over \$50 billion. Contrast this figure with the considerably smaller cost of fraud reported to the FTC Consumer Sentinel Network in 2012— \$1.5 billion, with median and average losses per victim at \$535 and \$2,350 respectively (FTC, 2013). Clearly, many victims are not reporting their losses to authorities, causing the cost of fraud to be grossly underestimated in official measures.

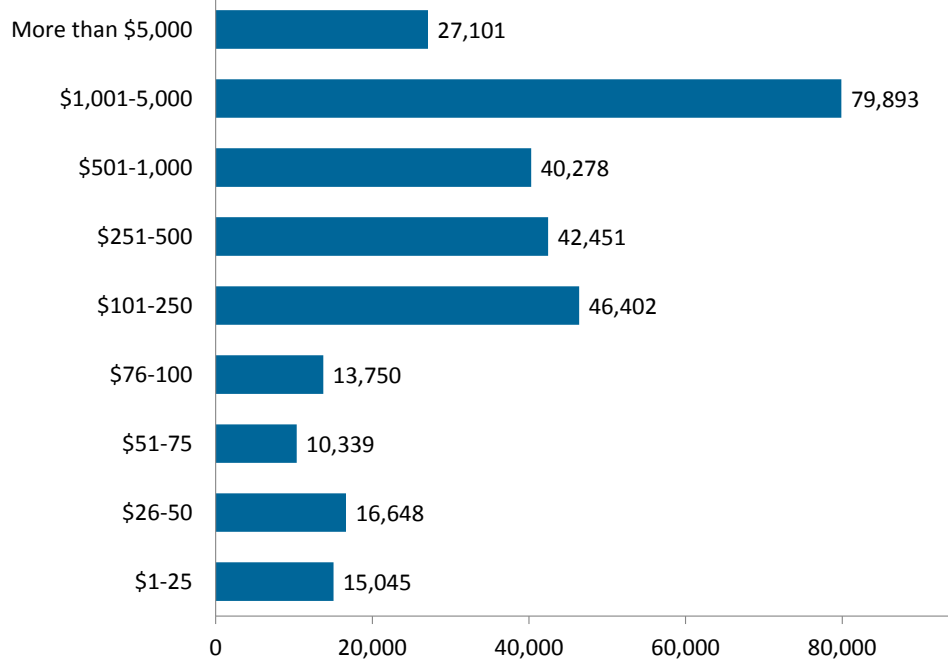


*This calculation is based on the estimated U.S. population of 240.19 million adults – 18 and older – as of July 1, 2012 (U.S. Census Bureau), with an estimated loss per person at \$216.29 (following Titus et al., 1995).

Cost per Victim

Different types of fraud cost victims different amounts of money and this is reflected in the literature. Average or median losses per victim range from \$37 in one Florida study of consumer scams (Holtfreter et al., 2008) to \$12,000 in an Australian study of foreign advance fee fraud (Ross & Smith, 2011). The figure below shows the distribution of complaints reported to the FTC Consumer Sentinel Network in 2012 by amount of money lost. There were nearly 80,000 complaints of fraud where the amount lost was between \$1,000 and \$5,000.

Number of Consumer Sentinel Network fraud complaints by amount paid, calendar year 2012



Source: FTC, 2013

While the direct financial damages are undoubtedly important to assess, we must also take into account the fact that fraud has the potential to precipitate other financial, physical, psychological, and social costs. In addition to the actual amount lost, victims suffer financially in other ways. In one study, 20% of fraud victims experienced personal credit problems and 13% lost time from work due to the incident (Titus et al., 1995). Furthermore, victims often report loss of sleep, depression, and marital problems as a result of their victimization (Sechrest et al., 1998 cited in Kerley & Copes, 2002). These related costs should not be overlooked.

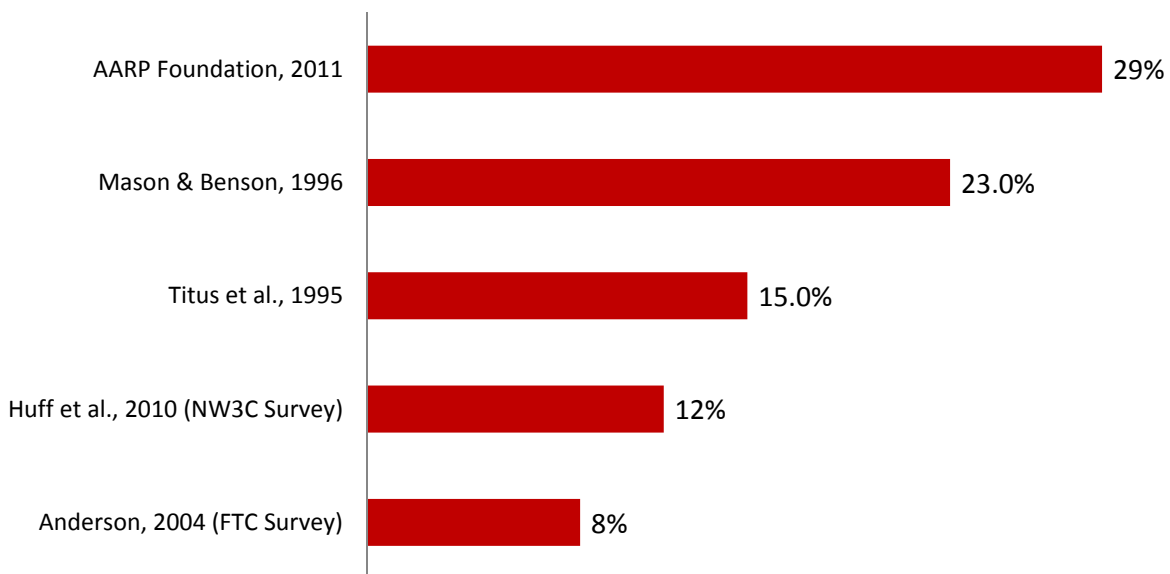
Despite the growing body of information concerning the cost of fraud, the extent of the problem remains largely unknown. Although certainly high, it is extremely difficult to measure the true cost of the problem.

Fraud under-reporting

Accurate prevalence and incidence measures are necessary in order to allocate resources to areas of particular need. Further, a crime cannot be addressed unless it is reported. Unfortunately, people frequently fail to report incidents of fraud to law enforcement or other agencies that can take action. Failure to report to authorities ensures that victims' situations are not addressed, and can also lead to a misunderstanding of the rates, types, and costs of fraud to individuals and society.

Levels of reporting to authorities are assessed in population surveys as the percentage of people who respond to the interviewer that they were victimized and indicate that they reported the victimization to authorities or agencies.

Percentage of fraud victims who disclosed victimization in surveys and also reported victimization to law enforcement authorities, Better Business Bureaus, or other consumer protection agencies.

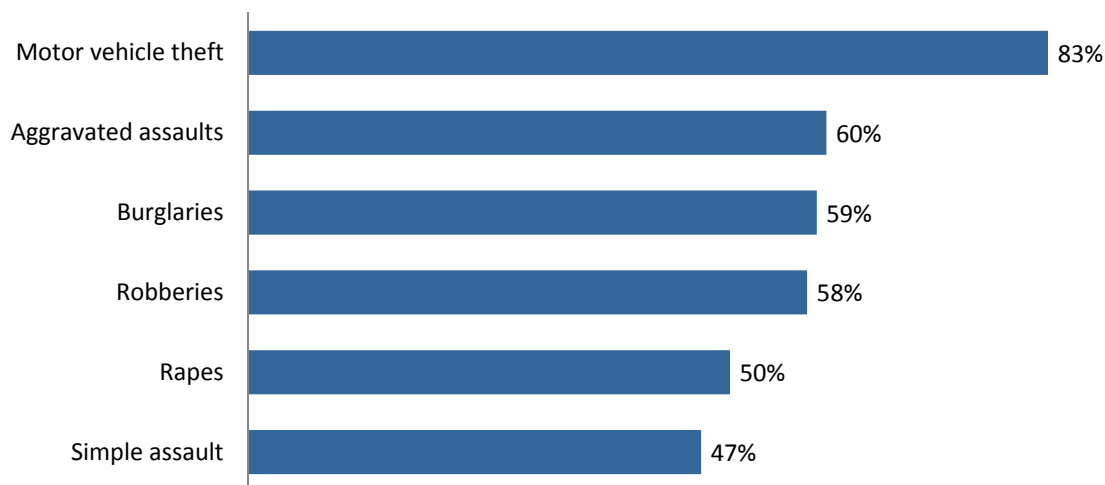


Unfortunately, even fraud that is reported is often not reported to an agency capable of appropriate action. For example, the most recent National White Collar Crime survey conducted in 2010 found that 54.7% of victimizations were reported to at least one external agency (e.g. credit card company, business or person involved, law enforcement, consumer protection agency, personal attorney), but just 11.7% were reported specifically to law enforcement or some other crime control agency (Huff et al., 2010). Clarifying the proper reporting mechanism for consumers would certainly be valuable. Indeed, in FINRA's recent study of financial fraud and fraud susceptibility, 40% of those victims who did not report to authorities said it was because they "didn't know where to turn" (FINRA Investor Education Foundation, 2013).

Comparison with Other Crime

Although rates of fraud reporting vary, even the highest estimates of reporting to authorities (e.g. AARP Foundation’s [2011] reporting rate of 29%) are much lower than the reporting rates found for other serious crimes. This means that fraud under-reporting to authorities is more prevalent than under-reporting for other serious crimes.

Percentage of victimizations disclosed to NCVS interviewers that were also reported to the police, 2010



Source: National Crime Victimization Survey, in Karmen, 2013

Self-Report Error

The term under-reporting is also sometimes used in reference to victims who fail to disclose their victimization even to survey researchers. This phenomenon is also known as self-report error. Though many more people report their victimization to survey interviewers than to law enforcement, there still exist a number of people who are unwilling or unable to report fraudulent incidents to interviewers. The rate of fraud under-reporting in surveys is clearly very difficult to estimate—how can you measure what people won’t tell you? One way is through experimental studies that manipulate certain aspects of survey design to see what variables affect the obtained rates of victimization. A recent FINRA Investor Education Foundation (2013) study, for example, showed how direct versus indirect questions yielded different prevalence rates. In this study, 11% of respondents lost money in a likely fraudulent activity (as determined through indirect questioning), but only 4% admitted to being a victim of fraud when asked directly (FINRA Investor Education Foundation, 2013).

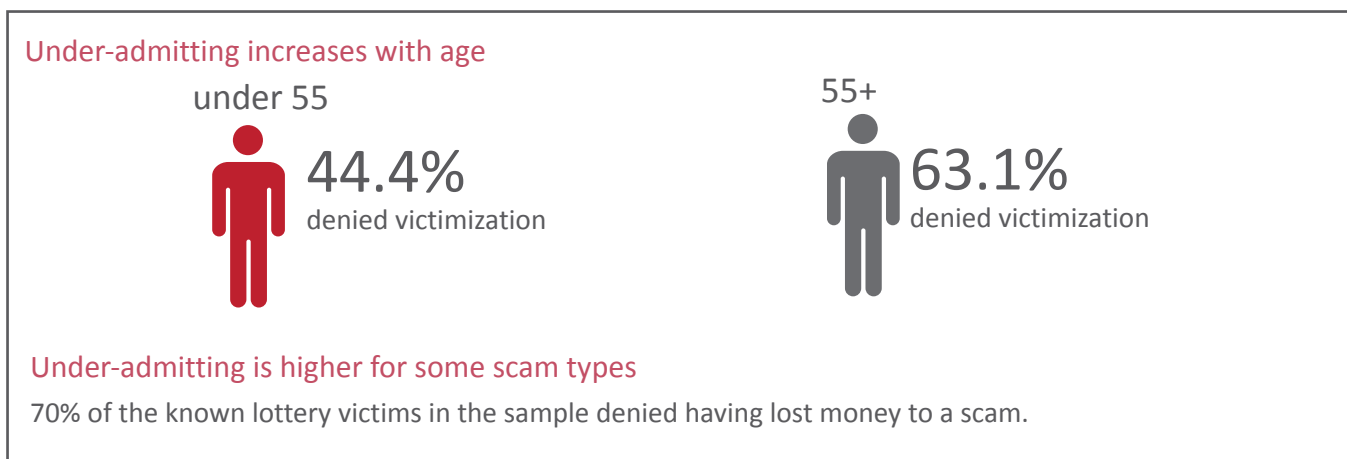
Specific wording can also be valuable in reducing under-reporting. Detailed wording cues recall of a fraud incident, and is also helpful in counting some victims who may not even know they were victimized. For example, in the FTC consumer surveys, respondents were identified as “victims” whenever they indicated they paid money for a government job that never materialized, regardless of the respondents’ understanding of the fraudulent nature of the interaction (Anderson, 2013).

Under-Reporting in Known Victims

Another way to gain insight into the “dark figure” of fraudulent incidents that occur but go undetected is by measuring the number of known victims who fail to admit their own victimization. This under-admitting is thought to play a large role in both under-reporting to authorities and to survey researchers (self-report error).

A few studies have been able to quantify under-admitting among groups of victims independently identified by law enforcement agencies. These agencies obtain lists of victims from fraud prosecution cases, which is important because it means the victims were not identified by self-reporting (or admitting) their victimization to authorities or interviewers.

In a 2011 study of over 700 independently verified fraud victims, a large number of victims denied having ever lost money due to fraud (AARP Foundation, 2011). Interestingly, this study found that:



Reasons for Failing to Report

The following reasons explain why people fail to report victimization to law enforcement authorities and/or fail to admit victimization to survey interviewers.

The hidden nature of fraud

- Unlike conventional crime victims, fraud victims may be unaware they have been duped. As criminologist David Friedrichs notes, “Someone who has been robbed is much more aware of his or her victimization than a person who overpays as a result of price-fixing...” (quoted in Huff et al., 2010, p. 13).

Lack of confidence in the authorities

- According to the first FTC survey in 2003, 54% of fraud victims who complained to official sources (Better Business Bureaus, local, state, or federal agencies) were satisfied with the outcome. In contrast, 80% of those who filed complaints with a credit card company or bank were satisfied (Anderson, 2004).
- Indeed, some have suggested that victims of financial crimes are treated like “second class victims” in the court system and social service network (Deem, 2000, p. 38).
- Victims of fraud rarely receive restitution for their losses, and as a consequence, many do not want to waste their time (Levi, 2001).

Lack of awareness of where to report

- In FINRA Foundation’s recent study, 40% of fraud victims who did not report to authorities said it was because they “didn’t know where to turn” (FINRA Investor Education Foundation, 2013).

Feeling of culpability

- Shichor, Sechrest, and Doocy (2000) asked victims of a large-scale telemarketing investment fraud to make recommendations for future preventive actions. Many of the responses involved some type of victim blaming by suggesting that it is an individual’s personal responsibility to not get involved or to at least be more careful.

Embarrassment or shame regarding the incident

- In FINRA Foundation’s recent study, 27% of fraud victims who did not report to authorities said it was because they “[were] embarrassed” (FINRA Investor Education Foundation, 2013).

Just want to move on

- In FINRA Foundation’s recent study, 32% of fraud victims who did not report to authorities said it was because they “wanted to put it behind [them]” (FINRA Investor Education Foundation, 2013).

Over-reporting can also be a problem.

One issue with surveys is that some error may arise from respondent inattention, misunderstanding of the questions, interviewer errors in recording the answers, and other essentially random factors. Theoretically, these errors can lead to both under-reporting (respondents failing to report victimization) and over-reporting (respondents reporting they were victimized when they were not). However, since fraud victimization is a relatively rare event, most participants in a random sample of the population will not be victims and, therefore, cannot under-report. This means that “random” errors are more likely to be over-reporting errors than under-reporting errors. This is important because when most of the respondents are in the position to make errors in only one direction (over-reporting), essentially random factors can lead to systematic bias (Tourangeau & McNealey, 2003).

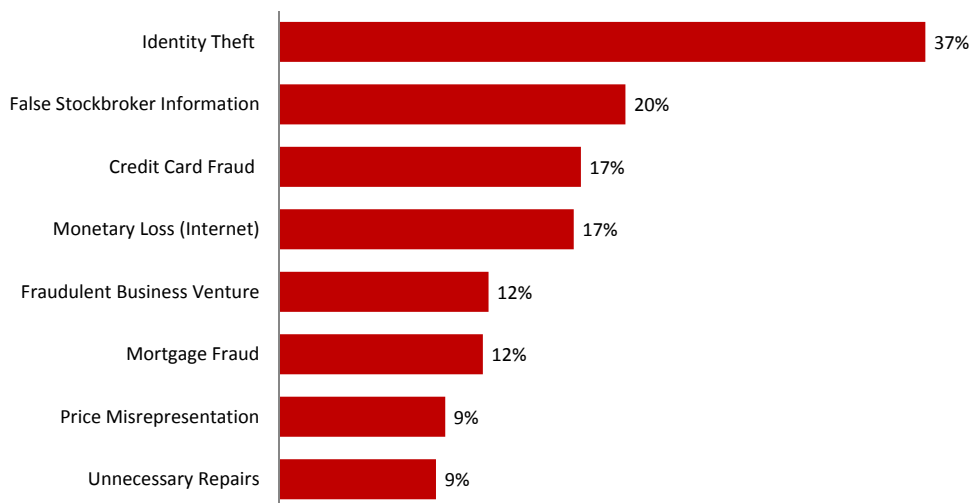
Reporters vs. Non-Reporters

Some research studies have used surveys to analyze how those who report their victimization to authorities compare to those who do not. Understanding these differences may help identify the most effective methods of encouraging fraud victims to report. Unfortunately, researchers have found only a few consistent relationships between victim characteristics and reporting behavior. This is a relatively unstudied area and warrants further research.

The type of victimization has an impact:

- Some types of fraud are more likely than others to be reported to authorities:

Percentage of household victimizations that were reported to law enforcement, by fraud type



Source: Authors' calculations using NW3C; Huff et al., 2010

Age and sex have an impact:

- In the first FTC consumer survey, an estimated 74.5% of female victims reported their fraud to authorities, compared to 64.2% of male victims. Similarly, almost 75% of those under the age of 35 reported, compared to 55.4% of victims between 55 and 64 (Anderson, 2004).
- AARP's 2011 study of known fraud victims found that 25% of older victims (55 and older) reported to authorities, which is significantly smaller than the 44% of younger victims (under age 55) who reported their victimization to authorities (AARP Foundation, 2011). (Note: the known victim population derived from lists obtained from law enforcement. These lists contained names of people identified as victims from a variety of sources, including victim self-report, client lists from fraudulent operations, or other investigative case material.)

Education has an impact:

- The first FTC consumer survey found that education beyond the high school level is associated with an increase in complaints filed (Anderson, 2004).
- Similarly, Schoepfer and Piquero's (2009) study using National White Collar Crime Center (NWC3) data found that those with some college or who held a bachelor's degree were more likely to report their victimization to authorities.

Social encouragement may have an impact:

- In one study of Knox County, Tennessee residents, encouragement to report from family and friends increased victims' likelihood of reporting 78%, whereas those who were discouraged from reporting were nearly three times less likely to report (Mason & Benson, 1996).

Losing more money has a moderate impact:

- Another analysis of the Knox County data found that victims who reported lost approximately \$668 more than those who did not report (Kerley & Copes, 2002).

III. LESSONS FROM OTHER CRIME

Guiding Questions:

- What lessons can we learn from other crime reporting?
- Specifically, what is applicable from modifications made to measuring rape, child abuse, and elder abuse?

Research Summary:

We can look to issues of measurement in other crime domains to learn valuable lessons about encouraging reporting behavior and obtaining accurate prevalence estimates.

For example, rape has consistently been one of the most difficult types of victimization to measure for many reasons that are applicable to fraud victimization. Both types of victims often struggle with guilt and are unlikely to report to police. Since the mid-1970s there have been several legal and institutional changes regarding the treatment of rape victims and many methodological changes surrounding the measurement of rape prevalence. Studying these changes and their effects on rape reporting provides a valuable model for how to address fraud under-reporting.

Similarly, studying the changes to measuring missing children and child abuse offers several valuable lessons. The widely variable estimates for the number of missing children in the 1980s show what can happen when no official organizations collect valid and reliable data. The current mandatory reporting requirements for child abuse, though noble in intention, have led to large caseloads for child protective agencies. This suggests caution when implementing legal reform.

Lastly, measurement of elder abuse is similar to fraud in that there exists a wide range of prevalence estimates resulting from both survey methodological issues and victim under-reporting. Interest in accurately measuring elder abuse is rapidly growing, and it is expected that there will be a great deal to learn from progress in this field. For instance, a recent report of elder abuse prevalence in the state of New York (Lachs & Berman, 2011) provides a notable example of a study that uses multiple sources of data and includes collaboration among community, governmental, and academic partners.

Measuring rape

A comparison with rape reporting is particularly relevant. Some fraud victims share common features with rape victims: both victims may experience neglect and double-standard effects from authorities, both crimes are rarely reported, and questions of guilt and responsibility are often the burden of the victim.

Rape has consistently been one of the most difficult crimes to measure for a variety of reasons. Prior to the 1970s, many victims were reluctant to report rape to the police because they feared mistreatment from the criminal justice system and retaliation from the perpetrator. Fortunately, a set of sweeping changes began in the mid-1970s that drastically reformed the laws governing forcible rape. For example, police detectives and emergency room personnel now receive sensitivity training, nurses can receive certification in sexual assault examination, numerous hotlines and crisis centers are available to victims, and laws have been reformed to protect rape victims.

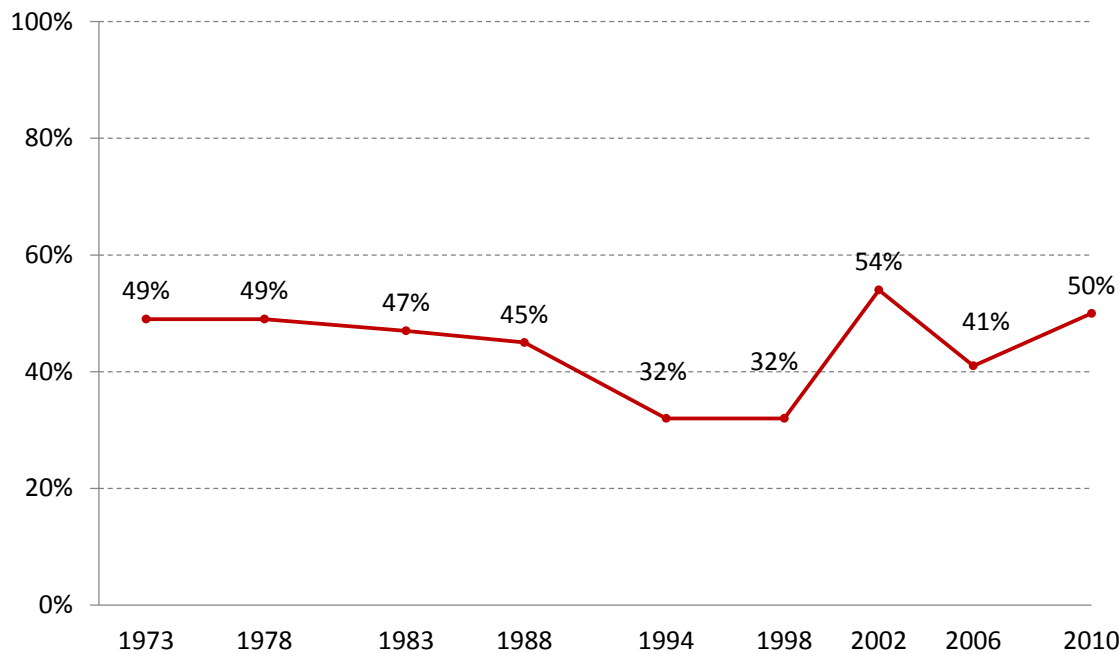
In addition to these institutional changes, many researchers also noted problems with the methodology of collecting rape prevalence data. Before 1992, *National Crime Victimization Survey* (NCVS) screening questions used the term “sexual attack” without clear-cut examples of what that meant. Moreover, the survey’s definition excluded marital rape, forced sodomy, and situations in which the perpetrators exploited the victim’s intoxicated state, mental illness, or developmental delays. In 1992, the survey was redesigned with a broader definition of rape and new question wording. The screener question now asks, “Has anyone attacked or threatened you in any of these ways: any rape, attempted rape, or other type of sexual assault?” The interviewer is also instructed to add, “Please mention it even if you are not certain it was a crime” and to ask specifically, “Have you been forced or coerced to engage in unwanted sexual activity by someone you didn’t know before, or a casual acquaintance, or someone you know well?” This new script was first implemented on half of the 1992 NCVS sample. The estimate of the number of rapes and other sexual assaults for the new-script sample was 150% greater than the estimate obtained from the sample that was asked the original questions (Kinderman, Lynch, & Cantor, 1997).

Though the redesign in 1992 significantly improved the screening questions, rape rates obtained from the NCVS are still much lower than rates obtained in some other studies using different survey methodology. For example, one experimental study used a split-level panel design in the National College Women Sexual Victimization Study to compare the new NCVS screener questions to a questionnaire that uses a wide range of behaviorally-specific questions about sexual violence. Researchers obtained a 3-month rape incidence rate of 1.7% with the specific questions, and 0.16% with the NCVS screener questions (Fisher, Cullen, & Turner, 2000).

The FBI’s *Uniform Crime Report* (UCR) also underwent revisions in response to methodological criticism regarding the collection of data surrounding rape. In 1991, a new definition of rape was included in the National Incident Based Reporting System (NIBRS). Those departments who have fully implemented the NIBRS now monitor sexual attacks against males, attacks against those who are unable to grant consent due to mental or physical incapacity, and attacks that involve a broader definition of rape.

Clearly, the methodological changes to survey design have increased the number of victims who reveal their victimization to interviewers. But how have institutional changes affected the rate of reporting rape to the police? Unfortunately, research investigating the success of rape-reform legislation in increasing reporting to police has been inconclusive. Early studies found no change in the number of rapes reported to the police in Michigan, the state where the first and most comprehensive reforms were implemented (Marsh, Geist, & Caplan, 1982). Similarly, no pronounced upward trend toward higher rates of reporting to police is evident in the annual NCVS surveys (see figure on next page). In 2010, just half of those who revealed victimization to interviewers also reported their rape to the police.

Percentage of rape victimizations disclosed to NCVS interviewers that were also reported to the police, select years



Source: National Crime Victimization Survey, in Karmen, 2013

On the other hand, the number of rapes reported in the UCR increased from 24.5 to 39.2 per 100,000 inhabitants from 1973 to 1994 (Clay-Warner & Burt, 2005). Similarly, Bachman and Paternoster (1993) analyzed NCVS, the UCR, and two other surveys to examine the change in rape reporting from 1973 to 1990. They concluded that, overall, rape victims were slightly more likely to report victimization to police after reforms were put in place. Of course, measuring the impact of reforms independent of other factors is very difficult to achieve. Increased reporting rates could be due to a greater share of victims coming forward to police, actual increases in the number of people raped, or both. Similarly, decreases in the number of victims reporting could be due to a true decrease in crime, or a decrease in the number of people willing to report their victimization.

Moreover, regardless of the impact on rates of reporting to the police, the establishment of personnel training and crisis centers has undoubtedly provided immediate aid to those in need.

Lessons learned

- Using behaviorally specific questions is very important. Detailed questions use words and phrases that let the respondent know exactly what is being measured and cue them to recall their past experiences. Both the added cues and the added time on task are likely to improve recall.
- Comparative work using experimental designs allows researchers to manipulate sources of measurement error (like survey wording) to measure their effects on estimates of rape and other victimization.
- People report—or fail to report—to authorities and surveys for different reasons, so measures to increase survey reporting will not necessarily translate into increased rates of reporting to the police.
- The fact that rape continues to be one of the most under-reported of serious crimes, despite well-intentioned efforts to persuade victims to come forward, illustrates how difficult it can be to encourage reporting behavior.

Measuring child abuse

At the start of the 1980s, the plight of kidnapped children and their families was brought to national attention by members of the victims' movement, reporters, and government officials (Karmen, 2013). At the time, no organization or government agency was collecting statistics about kidnapped or missing children. Kidnapping is not listed as a Part I offense in the *Uniform Crime Report* (UCR) and arrests for kidnappings are combined under the heading "offenses against family and children" in Part II. Furthermore, the *National Crime Victimization Survey* (NCVS) does not ask about crimes committed against persons under the age of 12. With no official statistics, the only estimates of the number of missing children were derived from limited studies of police files or projections from small survey samples.

This lack of reliable and valid measurement opened the door for maximalists to exaggerate the estimates of kidnapping to sensational levels and minimalists to respond with misleadingly low estimates of the problem. Both accused the other of employing broad or restricted definitions of missing children to inflate or deflate the scope of the problem.

In order to resolve this debate, the Department of Justice funded the National Incidence Study of Missing, Abducted, Runaway, and Thrownaway Children (NISMAART) (Karmen, 2013). The social scientists involved with this project consulted with experts and generated numbers from a survey of 35,000 randomly selected households. They concluded that the term "missing children" was too broad and caused a great deal of confusion because it encompassed five distinct problems: kidnapping by strangers, family abduction, runaways, children cast-out by their parents, and temporarily lost children. The project revealed that maximalists were overestimating the threat of kidnapping by strangers, but that the minimalist position underestimated the prevalence of family abductions.

A similar story can be told surrounding the history of measuring child abuse. Neither the UCR nor the NCVS contain data about child abuse incidence or prevalence. Other sources of official statistics do exist, such as the National Child Abuse and Neglect Data System and the more inclusive National Incidence Study (NIS) of Child Abuse and Neglect, but obtaining reliable and valid measures is complicated by under-reporting among various parties: the children, who may be too young to know their rights; the abuser, for obvious reasons; and various professionals (e.g. teachers and doctors) who may not want to become involved in court cases. On the other hand, over-reporting can also cause problems. Over nine out of ten states require doctors, educators, and child care providers to report suspected abuse or neglect. Moreover, one in four states require nonprofessionals (parents, community members) to report suspicions to child protective agencies. While these mandatory reporting requirements likely identify true abuse cases that would have otherwise gone unreported, they also lead to many false allegations that overload agency caseloads (Karmen, 2013).

Though monitoring of these problems remains an issue to this day, a number of lessons can be learned from the history of addressing the error rate in measuring offenses against children.

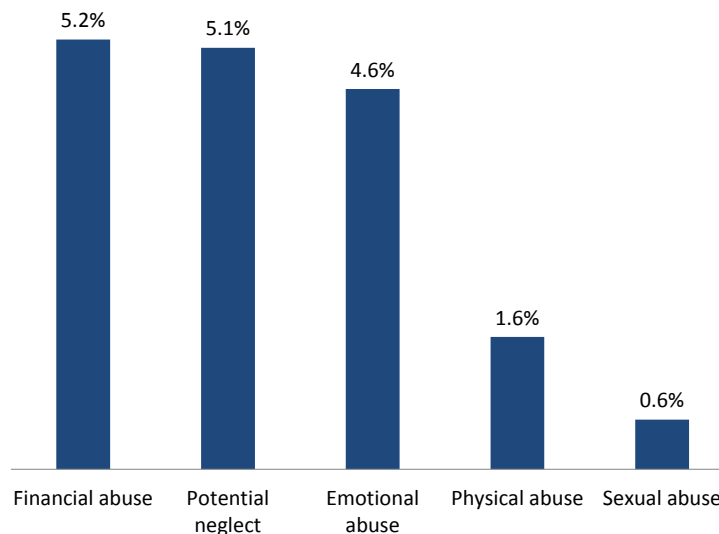
Lessons learned

- Measurement matters. Without reliable and accurate measurement, the true scope of the problem can be obscured by various interest groups.
- Figures from official sources carry greater weight than unofficial estimates.
- The technical details of definitions are very important in bringing social problem to the attention of the media, the general public, and the government.
- Mandatory reporting regulations must be put in place with caution. Only count in official statistics those allegations that can be verified.

Measuring elder abuse

Starting the 1970s, victimologists and advocates for senior citizens ignited the discussion of “elder abuse.” Definitions vary, but elder abuse typically refers to neglect, financial exploitation, and psychological and physical abuse of seniors. There is a wide range of national and regional prevalence figures for elder abuse due largely to methodological issues. Estimates for elder abuse in the United States range from 2% to 10% of all adults over 60 years of age (Lachs & Pillemer, 2004). Rates also vary by type of abuse. A national study in 2008 estimated a one-year incidence rate of 4.6% for emotional abuse, 1.6% for physical abuse, 0.6% for sexual abuse, 5.1% for potential neglect, and 5.2% for financial abuse by a family member (Acierno et al., 2010).

One-year elder abuse incidence rates in a national study, 2008



Source: Acierno et al., 2010

In 2011, the MetLife Mature Market Institute published the results of a study focusing on financial exploitation of older adults in the U.S. MetLife estimated the annual financial loss by victims of elder financial abuse (by any perpetrator: family, caretaker, or stranger) at \$2.9 billion, which represents a 12% increase from the \$2.6 billion they estimated in 2008 (MetLife Mature Market Institute, 2011).

In addition to methodological issues, studies of elder abuse are plagued by issues of under-reporting, both to authorities and to survey interviewers. Victims of elder abuse are often reluctant to complain for many reasons that are similar to why fraud victims as a whole fail to report: they may see their issue as a private or family concern, they may be ashamed, they may feel responsible, or they may be unaware of the illegal act.

Most state legislatures have passed laws that require mandatory reporting of suspected abuse by health care professionals, especially doctors. This has led to an increase in reported incidents of elder abuse, but as is the case with child abuse, many of these reports are never substantiated and lead to high-volume caseloads for geriatric social workers. In addition, many studies indicate that under-reporting remains a prominent issue.

A recent study aimed to quantify the prevalence and incidence of elder abuse in New York State (Lachs & Berman, 2011). This study is notable as a comprehensive endeavor that used multiple sources of data and collaboration among community, governmental, and academic partners to get a sense of the “big picture” problem. The project consisted of both a self-report survey of a large, statewide sample of older New Yorkers and analysis of the reports contained in all agencies and programs responsible for serving elder abuse victims in the state. The study found that the self-report elder abuse incidence rate was 24 times greater than the number of cases referred to social services, law enforcement,

or legal authorities. Interestingly, psychological abuse was the most common form of elder abuse reported by agencies, but financial exploitation was the most commonly self-reported form of elder abuse (Lachs & Berman, 2011). New York is one of the few states that does not require mandatory reporting of elder abuse, which helps to explain the large discrepancy between self-reported and agency-reported incidence of elder abuse. However, a national report on elder financial exploitation found a similarly large discrepancy, estimating the the overall reporting of financial exploitation at only 1 in 25 cases (Wasik, 2000).

Lessons learned

- Growing interest in quantifying elder abuse suggests that there will be a great deal to learn from progress in prevalence measurement in this field.
- Mandatory reporting regulations are helpful and need to be put in place with appropriate resources, and with the understanding that under-reporting may remain a problem.
- Collaboration among multiple partners—community, academic, and governmental—is instrumental in achieving a “big picture” understanding of the scope of social and criminal problems.
- Consistency in the collection of data regarding victimization across law enforcement and service systems enhances the ability to collaborate.
- Elder abuse measures highlight the fact that sub-types of victimization have different prevalence rates, as well as different rates of reporting to authorities and surveys.

CONCLUSIONS & RECOMMENDATIONS

Fraud prevalence and incidence measures can serve as a platform for informed decision-making about policy, allocation of limited resources, and evaluation of intervention. It is therefore of utmost importance to obtain accurate estimates of fraud's impact. Fraud prevalence measurement could be improved in several ways.

Research that assesses survey design

- Research that changes certain aspects of survey design can determine if—and to what extent—the rates of fraud victimization found in surveys are influenced by survey design elements (changes in wording, context, etc). This may also help identify the causes and relative importance of various factors implicated in under-reporting in surveys. For example, if a survey design with forgiving wording leads to higher rates of victimization, it can reasonably be assumed that embarrassment is a key factor in under-reporting. Similarly, if more behaviorally specific questions and cues lead to higher victimization rates, then it can be assumed that recall issues are of central importance in self-report error.
- Research that modifies survey design in studies where the sample is comprised of known victims (as identified by law enforcement) would be beneficial in assessing levels of under-admitting among fraud victims. Because the true victimization rate of such a sample is 100%, any survey design that increases the victimization rate is necessarily increasing the accuracy of the measure. Given that only a couple of small studies have been able to examine pools of known victims to determine the accuracy of their responses, we recommend additional research to investigate the extent and causes of under-admitting.

Research concerning fraud trends

- Collecting survey data for the purpose of comparing trends over time (i.e. repeated measurement with the same design, definitions, and wording) would help clarify whether fraud prevalence is increasing, decreasing, or staying the same.
- These surveys could also include questions that ask if the victims reported their victimization to authorities. A repeated measure of reporting behavior over time will help clarify if increases in complaint data reflect increases in reporting behavior, or increases in the actual number of fraud incidents.

Other research recommendations

- Further research into why people fail to report their victimization to authorities will help determine what can encourage victims to step forward.
- Studies that combine the under-admit rate with current survey data may gain a more comprehensive picture of the true scope of fraud.
- Fraud prevalence research that includes collaboration among multiple partners—community, academic, and governmental—would also help to gain a more comprehensive understanding of the “big picture.”

Further integration of fraud into the victimology and criminology field

- In the future, the *Uniform Crime Report* (UCR) will contain information about fraud and swindles, but only once the National Incident-Based Reporting System (NIBRS) has been implemented. Even then, it is important to remember that only frauds reported to the police will be counted.
- Inclusion of questions about fraud and swindles (beyond identity theft) in the *National Crime Victimization Survey* (NCVS) would allow for comparison with other types of criminal victimization. But caution must be exercised when analyzing the resulting data due to the context effects of questions in a crime survey. Specifically, some victims may under-report if they don't believe being scammed constitutes criminal victimization.

Institutional recommendations

- The scope and methods of consumer fraud are constantly changing, which poses unique challenges to the law enforcement community. Prosecution may also be difficult with Internet fraud due to the lack of geographic clarity or applicability of laws for older technology. However, these issues should not deter efforts to improve fraud detection and prevention. Until victims have faith in the value of reporting to authorities, one cannot expect levels of reporting to increase.
- In addition, various agencies and organizations are currently attempting to address the issue of fraud, but greater cooperation (e.g., integrated systems, data-sharing, uniform wording on studies/reports) is needed to achieve a real impact in the public sector.

While arriving at a conclusive measure of the prevalence and cost of fraud is unlikely, the true scope of the problem can be more closely approximated through careful analysis, multiple sources of data, and cooperation among organizations united in the fight against financial fraud.

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The mission of the Financial Fraud Research Center at the Stanford Center on Longevity is to serve as **a hub in the fight against financial fraud**. The Center **consolidates information, connects research to practice, and catalyzes further research**.

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