FIGHTING CRIME

OR

RAISING REVENUE?

Testing Opposing Views of Forfeiture

By Brian D. Kelly, Ph.D.
June 2019

INSTITUTE for JUSTICE

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EXECUTIVE SUMMARY

Forfeiture is a controversial tool governments use to take and permanently keep property allegedly connected to a crime. In the case of civil forfeiture, owners need not be convicted or even charged to lose cash, cars, homes and other property. And the law enforcement agencies that seize property often reap some or all of the proceeds when it is forfeited. Proponents argue forfeiture helps police fight crime, while critics counter it encourages agencies to "police for profit." This study tests these opposing claims about forfeiture.

This study combines more than a decade's worth of data from the nation's largest forfeiture program—the Department of Justice's equitable sharing program—with local crime, drug use and economic data from a variety of federal sources. Through equitable sharing, state and local law enforcement can cooperate with federal agencies on forfeitures and receive a portion of the proceeds; each year, agencies nationwide participate in tens of thousands of forfeitures—and get back hundreds of millions of dollars in proceeds.

Results show:

- More equitable sharing funds do not translate into more crimes solved. This suggests that despite claims forfeiture turns criminals' cash into more resources for law enforcement, the additional revenue is not improving overall police effectiveness in crime fighting.

- More equitable sharing funds also do not mean less drug use, even though proponents argue forfeiture helps rid the streets of drugs by financially crippling drug dealers and cartels.

- When local economies suffer, equitable sharing activity increases, suggesting police make greater use of forfeiture when local budgets are tight. A 1 percentage point increase in local unemployment—a standard proxy for fiscal stress—is associated with a statistically significant 9 percentage point increase in equitable sharing seizures.

Simply put, increased forfeiture funds had no meaningful effect on crime fighting. However, forfeiture was strongly linked to worsening economic conditions. These results suggest law enforcement agencies pursue forfeiture less to fight crime than to raise revenue.

Notably, this study examined both civil and criminal forfeitures. If all forfeiture has little effect on crime fighting, civil forfeiture alone—which requires neither convictions nor even charges—is likely to be even further removed. And the results call into question the wisdom of financial incentives baked into both civil and criminal forfeiture laws.

These results add to a growing body of scholarly evidence supporting forfeiture's critics, suggesting that claims about forfeiture's value in crime fighting are exaggerated at best and that police do use forfeiture to raise revenue. In light of this evidence and the serious civil liberties concerns raised by forfeiture, policymakers and the public should demand hard evidence for claims that forfeiture fights crime.

INTRODUCTION

"Nearly everyone does something illegal if you follow them long enough."

So observed one South Carolina deputy as he detailed the types of minor violations police officers can use to stop drivers in the hope of finding a pretext to search their vehicles.[1] The deputy is part of Operation Rolling Thunder, a South Carolina "highway interdiction" program under which police patrol I-85 and I-26 looking for reasons to pull people over. Officially, the program's mission is to catch "bad guys" and intercept drugs, drug money or other contraband they may be carrying on the interstates. Yet a traffic stop does not have to end in an arrest—or even a ticket—for police to unburden drivers and passengers of their cash or other property. All police need to seize property is probable cause to believe it is related to a crime.[2]

Once property is taken, the government can use a process called forfeiture to keep it forever. Under South Carolina law, an owner need not ever be convicted, charged or even arrested to lose property to forfeiture.[3] South Carolina's forfeiture laws allow police and prosecutors to keep 95% of the proceeds from forfeiture (the remainder goes to the state's general fund) and spend the money virtually any way they like.[4] And it often begins with "dumb little violations," as Rolling Thunder's architect calls them—things like failing to signal, speeding or following too closely.[5]

Rolling Thunder is not unique. It is just one of many highway interdiction and other forfeiture programs operating across the United States. These local, state and federal programs share the official goal of stripping criminals of property used in or deriving from a crime's commission. Proponents argue forfeiture programs deprive criminals and criminal organizations of assets they could otherwise use to commit more crimes and help ensure crime does not pay. And where police can keep forfeiture proceeds, proponents argue this encourages police to clear more drugs and drug money from the streets. They say police can use forfeiture proceeds to fight even more crime or fund drug education and other anti-drug efforts.

Yet there is another point of view. Critics warn that two features of forfeiture work together to undermine its utility as a crime-fighting tool—while also putting innocent people's property at risk. First, while *criminal* forfeiture laws require that prosecutors first win a conviction against an owner and forfeit the property through criminal procedures, *civil* forfeiture laws typically set low bars for law enforcement to forfeit property and make challenging seizures difficult for property owners.[6] At the federal level, as well as in the few states that keep track, most forfeitures are civil.[7] And second, like South Carolina's, many forfeiture laws, criminal and civil, give law enforcement agencies a financial stake in forfeitures.[8] Especially where laws make forfeiture very easy, or where local budgets are squeezed, agencies may be tempted to "police for profit"—in other words, to pursue forfeitures in the interest of raising revenue rather than fighting crime.[9]

The results cast doubt on proponents' claims that forfeiture is an important crime-fighting tool while supporting critics' charges that police pursue forfeiture for revenue.

This study puts both proponents' and critics' claims to the test using large and sophisticated new datasets combining more than a decade's worth of local crime and economic data with data from the federal government's equitable sharing program. The equitable sharing program—by far the largest forfeiture program in the United States—allows local and state agencies to seize property locally, forfeit it federally and share in the proceeds. As I illustrate below, each year, state and local agencies receive hundreds of millions of dollars from their participation in tens of thousands of equitable sharing cases. To test the claim that forfeiture fights crime, this study analyzes the effect of funds received through equitable sharing on two measures of local police success: the rate at which police solve serious crimes and the rate of illicit drug use. To test the claim that forfeiture activity is motivated by a desire to raise revenue, this study examines the effects of local economic conditions on local police agencies' equitable sharing activity.

The results cast doubt on proponents' claims that forfeiture is an important crime-fighting tool while supporting critics' charges that police pursue forfeiture for revenue. More forfeiture funds did not translate into more crimes solved or less drug use. However, changes in local unemployment conditions—a commonly accepted measure of fiscal stress—did predict changes in forfeiture behavior, with a 1 percentage point increase in unemployment being associated with a 9 percentage point increase in seizures of property for forfeiture. This finding was statistically significant and suggests that during periods of fiscal stress, police may be turning to forfeiture to raise revenue.

EVOLUTION OF FEDERAL FORFEITURE AND THE EQUITABLE SHARING PROGRAM

To better understand the debate over forfeiture and any implications from my findings, it is helpful to understand what forfeiture is and how federal forfeiture and the equitable sharing program studied here have evolved and expanded. Forfeiture is a legal tool that law enforcement agencies can use to seize and attempt to keep property based on its alleged association with a crime. With criminal forfeiture, the government must first win a criminal conviction against the owner and forfeit the property through a criminal proceeding. Civil forfeiture typically draws greater ire from critics because it generally does not provide people with basic rights afforded to the criminally accused. The government generally does not have to prove people's guilt beyond a reasonable doubt before it can permanently take their property. And innocent people whose property is caught up in forfeiture often have to prove they had nothing to do with an alleged crime—to prove, in effect, their own innocence—to win their property's return. These deviations from traditional American legal norms stem from a legal fiction holding that property allegedly related to a crime abetted that crime and is itself therefore guilty. In other words, in a civil forfeiture case, property, and not a person, is the defendant.[10]

For many decades, forfeiture attracted little notice. It was rarely used and then usually only in admiralty and customs cases. That started to change in the 1970s and 1980s with the rise of the illegal drug trade. Seeing forfeiture—particularly civil forfeiture—as a potential tool in the war on drugs, Congress passed several laws, most notably the Comprehensive Crime Control Act of 1984, that greatly expanded forfeiture's reach. The objective of much of this legislation, particularly the CCCA, was to disrupt the drug trade by attacking property associated with drug crime, either as facilitating the crime or representing the profits from crime.[11]

To encourage law enforcement to more vigorously enforce the nation's drug laws, Congress decided to allow, for the first time, federal law enforcement agencies to share in the proceeds from both civil and criminal forfeitures.[12]

Also as part of this push, Congress created the equitable sharing program. This program allows state and local law enforcement agencies to cooperate with federal agencies on both civil and criminal forfeitures and keep up to 80% of the proceeds. The equitable sharing program offers two modes of cooperation: joint operations or adoptions. With joint operations, federal and state or local agencies work together to seize property during a shared investigation. The federal government then seeks to forfeit that property under federal law, and the state or local agencies that helped with the seizure file claims for a portion of the proceeds. With adoptions, a state or local agency makes a seizure under state law and without federal assistance. The agency then asks a federal agency to "adopt" the property for forfeiture under federal law. Following a successful forfeiture action, the federal agency returns a share of the proceeds to the state or local agency. Equitable sharing distributions must be used for law enforcement purposes, as a budget supplement; they are not supposed to replace appropriated agency resources. The program thus provides discretionary funds to state and local agencies that might have little flexibility in their normal budgets.[13]

Over the years, equitable sharing, as well as federal forfeiture in general, has drawn condemnation, with many critics arguing weak protections for property owners coupled with law enforcement's financial incentive make the forfeiture tool ripe for systematic abuse.[14] With equitable sharing, critics have raised the additional concern that law enforcement will use the program to engage in forfeiture activity that would be more difficult, less lucrative or even illegal under their states' laws.[15]

In response to some of these criticisms, Congress passed the Civil Asset Forfeiture Reform Act in 2000. The new law added some modest due process safeguards previously lacking, but it did nothing to address the financial incentive, one of the most controversial aspects of both criminal and civil forfeiture laws.[16]

Reforms to equitable sharing specifically tell a similarly mixed story. In 2015, former U.S. Attorney General Eric Holder announced almost all adoptive forfeitures would cease.[17] While forfeiture critics welcomed the policy change, they argued it did not go far enough because it left some loopholes and did nothing to curb joint operation forfeitures, which account for most equitable sharing forfeitures.[18] They also argued that because the reform was only a policy change, not a legislative change, it was subject to reversal by a future administration.[19] And, in fact, that is what happened.[20]

In 2017, the Department of Justice under former U.S. Attorney General Jeff Sessions reversed the Holder policy by reinstating adoptive forfeitures. The DOJ also purported to add safeguards intended to ensure innocent people do not lose their property to adoptive forfeiture.[21] However, critics argue these provisions fail to address some fundamental due process concerns and are unlikely to offer meaningful protection to property owners.[22]

GROWTH OF FEDERAL FORFEITURE AND THE EQUITABLE SHARING PROGRAM

Despite some reforms, the federal government's forfeiture laws remain expansive. Where civil forfeiture was once available only or primarily in admiralty and customs cases, both it and criminal forfeiture now apply to a host of drug and other crimes,[23] and law enforcement agencies have taken forfeiture up enthusiastically. Today, the scale of federal forfeiture and of equitable sharing in particular is remarkable.

Table 1 provides total annual deposits and net assets for the DOJ's Assets Forfeiture Fund and the Treasury Department's Treasury Forfeiture Fund, the federal government's two main forfeiture funds, for fiscal years 2001 through 2017. In 2001, the AFF and TFF collectively took in less than $500 million in proceeds from both civil and criminal forfeitures; over the following years, deposits grew almost uninterruptedly before peaking at over $6 billion in 2015. Between 2001 and 2017, the funds took in nearly $40 billion.

Table 1: Forfeiture Funds Received and Net Assets:
Department of Justice Assets Forfeiture Fund and Treasury Department Treasury Forfeiture Fund, Fiscal Years 2001–2017

FY	Funds Received			Net Assets		
	DOJ	Treasury	Total	DOJ	Treasury	Total
2001	$406,800,000	$65,745,000	**$472,545,000**	$525,800,000	$237,300,000	**$763,100,000**
2002	$423,600,000	$113,072,000	**$536,672,000**	$485,200,000	$173,000,000	**$658,200,000**
2003	$486,000,000	$194,854,000	**$680,854,000**	$528,400,000	$177,231,000	**$705,631,000**
2004	$543,100,000	$271,565,000	**$814,665,000**	$427,900,000	$194,103,000	**$622,003,000**
2005	$595,500,000	$258,636,000	**$854,136,000**	$448,000,000	$255,307,000	**$703,307,000**
2006	$1,124,900,000	$214,651,000	**$1,339,551,000**	$651,100,000	$236,757,000	**$887,857,000**
2007	$1,515,700,000	$252,192,000	**$1,767,892,000**	$734,200,000	$361,387,000	**$1,095,587,000**
2008	$1,286,000,000	$464,762,000	**$1,750,762,000**	$1,000,700,000	$426,779,000	**$1,427,479,000**
2009	$1,444,568,000	$516,736,000	**$1,961,304,000**	$1,425,883,000	$594,513,000	**$2,020,396,000**
2010	$1,573,330,000	$959,767,000	**$2,533,097,000**	$1,687,400,000	$986,071,000	**$2,673,471,000**
2011	$1,737,965,000	$817,154,000	**$2,555,119,000**	$1,760,544,000	$1,452,922,000	**$3,213,466,000**
2012	$4,314,710,000	$397,002,000	**$4,711,712,000**	$1,620,387,000	$1,555,895,000	**$3,176,282,000**
2013	$2,012,249,000	$1,612,361,000	**$3,624,610,000**	$1,855,767,000	$2,486,628,000	**$4,342,395,000**
2014	$4,467,127,000	$736,531,000	**$5,203,658,000**	$2,560,848,000	$1,903,622,000	**$4,464,470,000**
2015	$1,622,651,000	$4,595,733,000	**$6,218,384,000**	$1,549,919,000	$6,067,853,000	**$7,617,772,000**
2016	$1,886,918,000	$773,314,000	**$2,660,232,000**	$1,460,226,000	$2,590,444,000	**$4,050,670,000**
2017	$1,586,422,000	$458,806,000	**$2,045,228,000**	$1,935,830,000	$2,248,198,000	**$4,184,028,000**
Total	**$27,027,540,000**	**$12,702,881,000**	**$39,730,421,000**			

Note: Totals include proceeds from both civil and criminal forfeitures.

Sources: DOJ Office of the Inspector General's Audit of the Assets Forfeiture Fund and Seized Asset Deposit Fund Annual Financial Statements (published annually); Department of the Treasury Office of the Inspector General's Treasury Forfeiture Fund Accountability Report (published annually).

**Figure 1:
DOJ Forfeitures,
Fiscal Years 2000-2016**

Criminal Forfeitures — 27%

Civil Forfeitures — 73%
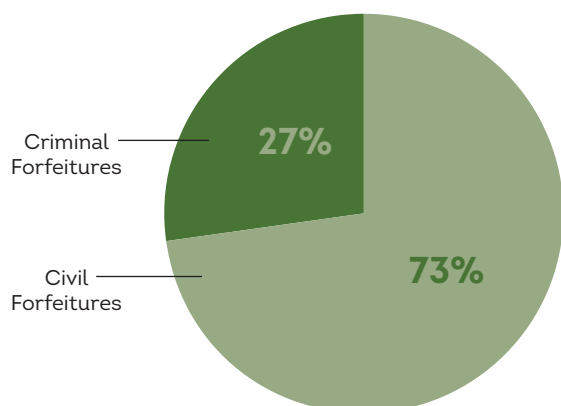
**Figure 2:
DOJ Equitable Sharing Forfeitures,
Fiscal Years 2000-2016**

Criminal Forfeitures — 14%

Civil Forfeitures — 86%
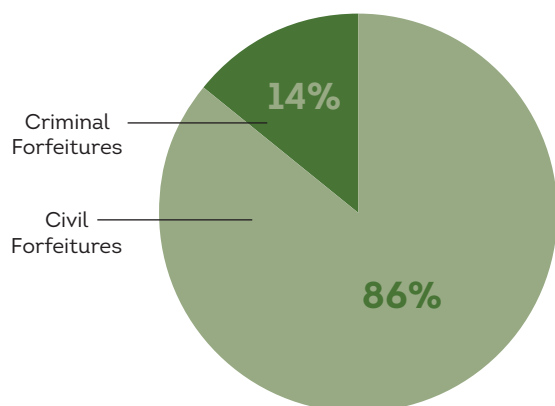
Deposits alone do not tell the full story of federal forfeiture. In most years, especially those with higher deposit amounts, a few cases account for large portions of proceeds.[24] Many of these are financial fraud cases, where some proceeds are used to compensate victims. Since such large cases can skew deposits, it is useful to look at the funds' net assets—that is, how much money remains in the AFF and TFF after restitution and other payments are made. Net assets have increased greatly since the passage of federal reforms in 2000. From a combined level of $763 million in 2001, the AFF and TFF have exceeded a balance of $4 billion in every year since 2013. While the inflows and balances vary considerably from year to year, the upward trend and the sheer scale of federal forfeiture are clear.

The DOJ and Treasury do not report on civil and criminal forfeitures separately. However, it is possible to calculate DOJ civil forfeiture figures using the Department's Consolidated Asset Tracking System. Also known as CATS, this is the database the DOJ uses to keep track of the property its agencies seize and forfeit.[25] From fiscal year 2000 through 2016, I calculate that 73% of DOJ forfeitures, by value, were civil rather than criminal (see Fig. 1).

Equitable sharing is also large in scale. Table 2 provides, for calendar years 2000 through 2016, the total value and number of distributions to local and state agencies from the AFF by year of the disposition decision, disaggregated by joint operations and adoptions. The value and number of joint operation equitable sharing distributions increased greatly during the period I examined, from a total of more than $154 million across over 24,000 distributions in 2000 to a peak of more than $629 million across over 44,000 distributions in 2013. The dollar value of distributions had fallen to $451 million by 2015, but the number of distributions rose to nearly 50,000, its highest ever level. Adoptive distributions, always much smaller than joint operation ones in terms of both total value and number, declined from 2014 to 2015 and then precipitously from 2015 to 2016—perhaps a response to the Holder policy change.[26]

As with forfeitures more generally, the DOJ does not distinguish between civil and criminal forfeitures in its equitable sharing reporting. Using the CATS database, I calculate that 86% of the DOJ's equitable sharing forfeitures were civil over the period fiscal year 2000 through 2016 (see Fig. 2).

Table 2:
Equitable Sharing Distributions to State and Local Law Enforcement from the Department of Justice Assets Forfeiture Fund, Calendar Years 2000-2016

CY	Joint Operations		Adoptions	
	Number of Distributions	Funds Distributed	Number of Distributions	Funds Distributed
2000	24,803	$154,616,328	4,891	$52,841,820
2001	26,078	$225,165,005	4,393	$40,930,253
2002	21,666	$166,580,782	3,381	$35,629,846
2003	26,776	$157,281,837	5,143	$51,432,762
2004	27,945	$202,335,331	5,174	$57,413,280
2005	27,855	$229,249,956	4,672	$50,741,963
2006	32,114	$269,429,588	4,958	$75,915,696
2007	31,996	$372,194,568	5,215	$70,743,288
2008	34,370	$415,507,164	5,309	$70,452,684
2009	35,042	$341,683,365	5,102	$77,184,514
2010	33,877	$497,414,968	5,117	$70,169,156
2011	36,544	$477,696,635	5,736	$77,485,256
2012	37,131	$525,365,470	6,280	$74,144,039
2013	44,335	$629,664,827	5,661	$65,078,063
2014	46,415	$413,219,048	5,111	$59,770,833
2015	49,871	$451,276,645	3,964	$43,615,127
2016	44,158	$369,914,216	1,034	$12,263,836
Total	**580,976**	**$5,898,595,733**	**81,141**	**$985,812,416**

<u>Note</u>: Totals include proceeds from both civil and criminal forfeitures.

<u>Source</u>: Author's calculations from CATS.

Table 3 provides the total value of distributions from the TFF. Historically, this fund has made smaller equitable sharing distributions in total than the AFF. Unfortunately, the Treasury does not release data that would allow detailed analysis, a position currently under challenge in federal court.[27]

Table 3:
Equitable Sharing Distributions to State and Local Law Enforcement from the Treasury Department Treasury Forfeiture Fund, Fiscal Years 2000-2018

FY	Funds Distributed
2000	$85,129,000
2001	$60,277,000
2002	$50,844,000
2003	$41,962,000
2004	$48,123,000
2005	$72,731,000
2006	$66,558,000
2007	$60,192,000
2008	$90,198,000
2009	$89,756,000
2010	$129,102,000
2011	$79,533,000
2012	$137,627,000
2013	$123,765,000
2014	$304,339,000
2015	$146,543,000
2016	$148,163,000
2017	$78,690,000
2018	$128,398,000
Total	**$1,941,930,000**

<u>Note</u>: Totals include proceeds from both civil and criminal forfeitures.

<u>Source</u>: Department of the Treasury Office of the Inspector General's Annual Treasury Forfeiture Fund Accountability Report (published annually).

TWO COMPETING THEORIES OF FORFEITURE

Proponents and critics of forfeiture offer different explanations for the vast scale of federal forfeiture. Proponents assert seizures and forfeitures are simply a byproduct of policing. If giving a share of forfeiture proceeds to law enforcement encourages a focus on certain types of crime, this is as lawmakers intended; moreover, these funds flow back into fighting crime—a social good. Critics, on the other hand, attribute forfeiture's scale to laws that make civil forfeiture—which, again, accounts for most forfeitures—both easy and rewarding for law enforcement. Specifically, they argue poor protections for property owners combined with law enforcement's ability to financially benefit may mean police and prosecutors are pursuing seizures and forfeitures to raise revenue rather than to fight crime. Below, I outline these two competing theories of forfeiture.

"FORFEITURE IS ABOUT FIGHTING CRIME"

Proponents of forfeiture argue it is an indispensable tool for fighting crime. The DOJ's description of its Asset Forfeiture Program's mission is typical:

> The primary mission of the Program is to employ asset forfeiture powers in a manner that enhances public safety and security. This is accomplished by removing the proceeds of crime and other assets relied upon by criminals and their associates to perpetuate their criminal activity against our society. Asset forfeiture has the power to disrupt or dismantle criminal organizations that would continue to function if we only convicted and incarcerated specific individuals.[28]

Speaking in 2017, former Attorney General Jeff Sessions echoed the DOJ's description of the Asset Forfeiture Program while also lauding the resources forfeiture generates for law enforcement:

> [C]ivil asset forfeiture is a key tool that helps law enforcement defund organized crime, take back ill-gotten gains, and prevent new crimes from being committed, and it weakens the criminals and the cartels. … Civil asset forfeiture takes the material support of the criminals and instead makes it the material support of law enforcement, funding priorities like new vehicles, bulletproof vests, opioid overdose reversal kits, and better training. In departments across the country, funds that were once used to take lives are now being used to save lives.[29]

From this point of view, the financial incentive that so concerns critics offers a social benefit, giving law enforcement resources with which to fight more crime and make the public safer.

Some forfeiture proponents have suggested that without a financial incentive, police would be less inclined to fight crimes, such as drug crimes, that lead to seizures and forfeitures. As the

executive director of the South Carolina Sheriff's Association asked, without the ability to share in the proceeds, "what is the incentive to go out and make a special effort? What is the incentive for interdiction?"[30] In a similar vein, in testimony against a forfeiture reform bill in Hawaii that would eliminate police and prosecutors' financial incentive, a prosecuting attorney's office warned that absent the incentive, "it's not hard to anticipate these agencies de-prioritizing forfeiture cases, choosing to spend precious human resources on other matters."[31]

"FORFEITURE IS ABOUT PURSUING REVENUE"

Critics argue forfeiture laws, especially civil forfeiture laws, encourage the pursuit of revenue because they make forfeiture both easy and rewarding for law enforcement. With regard to ease, civil forfeiture laws generally favor the government. Under federal law, law enforcement can seize property with only probable cause that it is connected to a crime that can give rise to forfeiture. (This is the standard for all seizures, regardless of purpose.[32]) Generally, after property is seized, owners must file a claim to try to win it back.[33] If no one files a claim within a certain time frame, property is usually forfeited more or less automatically.[34]

If a person does file a claim for return of seized property, the case may go before a judge. Yet the participation of a judge does not guarantee a fair process for property owners. Because the property itself is the defendant in civil forfeiture cases, owners generally do not enjoy the types of procedural protections they would in a criminal proceeding. For example, they typically do not have the right to counsel. Nor does the government have to prove its case beyond a reasonable doubt; federal prosecutors need to prove the existence of a crime and the property's link to that crime by only a preponderance of the evidence.[35] Not only is this a low standard, but cash in and of itself—that is, without accompanying contraband or other evidence—can be presented as both evidence of a crime and the link of the property to that crime.[36] Federal law also forces innocent third-party owners—often a suspect's spouse or parent—to prove they did not consent to or had no knowledge of the alleged criminal activity that led to their property's seizure in order to get it back.[37]

Critics maintain that poor procedural protections for property owners in the federal government's civil forfeiture laws, while of great concern, are not the only problem. Federal forfeiture laws also make forfeiture, both civil and criminal, a financially rewarding endeavor for law enforcement. Under federal law, law enforcement can keep 100% of forfeiture proceeds, with up to 80% of proceeds being shared with local and state agencies in equitable sharing cases.[38] Critics' concerns about the financial incentive in forfeiture laws are twofold: They argue it (1) circumvents democratic controls and (2) distorts police priorities.

First, in allowing agencies to self-fund, the financial incentive circumvents democratic controls. Agencies acquire forfeiture funds outside the normal appropriations process, enabling spending without legislative approval.[39]
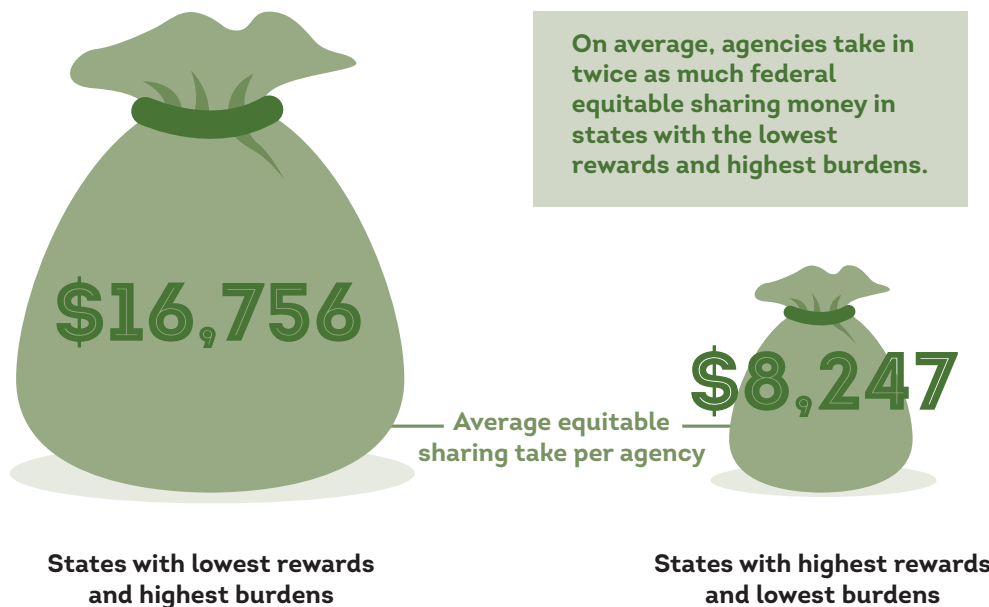
Equitable sharing may also circumvent democratic controls in potentially allowing state and local law enforcement to evade state laws that make forfeiture less lucrative or more difficult.[40] A number of states allow agencies to keep less than 80% of forfeiture proceeds or offer more robust protections for property owners; a few have even abolished civil forfeiture entirely.[41] Where a state does not expressly restrict equitable sharing participation, state and local agencies may seize on this loophole.[42] North Carolina's example is illustrative. The state does not have civil forfeiture (all state forfeitures are processed criminally) and gives law enforcement no financial incentive to pursue criminal forfeiture (all forfeiture proceeds are sent to the public school fund). Yet North Carolina law enforcement agencies collect more than $11 million per year through their participation in the federal equitable sharing program.[43] Even in the many states whose laws are similar to the federal government's, equitable sharing may be more convenient than state-law forfeitures for state and local agencies since the federal government prosecutes the actual forfeiture actions.

A 2018 study found empirical support for the circumvention concern.[44] It found that, on average, agencies in states with the lowest financial incentives and the greatest protections for property owners took in more than twice as much equitable sharing money per agency as agencies in states with the highest incentives and poorest protections (see Fig. 3).

Those results suggest agencies use equitable sharing to bypass their states' laws. They also suggest agencies' forfeiture activity may be motivated by a desire for revenue, which leads to the second concern with the financial incentive: It shifts policing away from enforcing the law or making the public safer and toward generating revenue.[45]

Figure 3:
Federal Equitable Sharing and State Civil Forfeiture Law

On average, agencies take in twice as much federal equitable sharing money in states with the lowest rewards and highest burdens.

$16,756

$8,247

Average equitable sharing take per agency

States with lowest rewards and highest burdens

States with highest rewards and lowest burdens

Source: Holcomb, J. E., Williams, M. R., Hicks, W. D., Kovandzic, T. V., & Meitl, M. B. (2018). Civil asset forfeiture laws and equitable sharing activity by the police. *Criminology and Public Policy*, 17(1), 101–127. Figures represent an average law enforcement agency in 2012.

Critics point to a number of real-world examples of law enforcement appearing to police for profit. A case from Tennessee is particularly illustrative. When a Nashville television news team followed police officers working I-40 as part of a highway interdiction task force not unlike South Carolina's Rolling Thunder, it found officers did not work the east- and westbound lanes equally. Rather, they seemed to prefer the westbound side even though they were more likely to find drugs on the eastbound side, as smugglers transported them to Nashville and other cities to the east. A possible explanation for this observation is that officers knew they were more likely to find drug *money* on the westbound side, as smugglers transported it back to Mexico or the West Coast. Records confirmed officers made 10 times as many stops on the westbound side as they did on the eastbound. In other words, it appeared police were choosing to pursue cash—potential revenue—rather than stop drugs. Even the head of the task force's board conceded, "[t]hat's what it looks like. … That shouldn't be the case, but that's what it looks like." He also admitted that since seizures and fines paid for the task force's operations, it was possible officers could lose their jobs if they did not generate enough cash.[46]

The DOJ's Office of the Inspector General has also expressed concern about policing for profit. In 2017, the office released a report finding the DOJ "cannot effectively assess whether asset forfeiture is being appropriately used" because it does not track information about crimes associated with agencies' seizures.[47] The report further found that "many of the [Drug Enforcement Administration's] interdiction seizures may not advance or relate to criminal investigations" and offered this ominous warning:

> When seizure and administrative forfeitures do not ultimately advance an investigation or prosecution, law enforcement creates the appearance, and risks the reality, that it is more interested in seizing and forfeiting cash than advancing an investigation or prosecution.[48]

This study tests these competing theories of forfeiture using data from the equitable sharing program. To test the theory that forfeiture fights crime and in particular drug crime, this study analyzes the effect of funds received through the equitable sharing program on two measures of police success: (1) the rate at which police solve serious crimes and (2) the rate of illicit drug usage. Put differently, it explores whether more forfeiture revenue helps police solve more crimes or reduce illicit drug use in their jurisdictions. To test the theory that forfeiture activity is motivated by a desire to raise revenue, this study examines whether local economic conditions predict police equitable sharing participation.

This study improves on earlier forfeiture research by using larger, more sophisticated datasets covering more years to observe the effects, over time, of forfeiture activity on policing outcomes. Most previous analyses of crime and policing have compared agencies to one another at a particular point in time.[49] A major limitation of that approach is that many factors may affect crime across jurisdictions, and it is not possible to quantify or even to identify many of them. In following individual police agencies over time, my approach effectively controls for many of those unobservable variables. Similarly, any number of factors may contribute to variations in drug use across the United States. Controlling for state and regional differences reduces that statistical noise, allowing me to focus on the variables of interest and greatly increasing confidence in the results. Appendix B describes my regression methodology.

To create the necessary datasets for my regression analyses, I combined several highly detailed government datasets on policing, forfeiture, crime and drug use. Specifically, I developed datasets at the police agency level that track, over several years, annual equitable sharing amounts, the number of sworn police officers, agency budgets, population served, and the number of serious crimes reported and cleared (i.e., considered solved) by arrest. I combined these datasets with geographically more aggregated data on demographic characteristics and illicit drug use. The resulting datasets contain annual data for all of these variables across thousands of individual local and county police agencies.

The time frame for my analyses was the years after 2000, when Congress passed CAFRA, changing federal forfeiture in some important ways. The necessary data varied based on the tests that I ran. Every test required the equitable sharing data, which I obtained on a property-specific (as opposed to case- or suspect-specific) level from CATS. I included equitable sharing distributions with respect to both civil and criminal forfeitures. My reasons for this are several. First, the decision of whether to pursue forfeiture through civil or criminal procedures is often made by prosecutors well after police have seized an asset. Second, the effects of forfeiture funds are likely to be similar whether funds derive from civil or criminal forfeitures. And third, the two types of forfeiture generally offer police the same financial incentives. Using data on both civil and criminal forfeitures therefore gives both proponents' and critics' theories their best chance.

I obtained agency characteristics from two sources, allowing me to create two datasets with different strengths for some tests. The first source was the Law Enforcement Management and Administrative Statistics survey, a survey conducted periodically by the Bureau of Justice Statistics. The LEMAS survey requests information from all large police agencies and smaller agencies on a sample basis, with a focus on police operations.[50] The survey data provided agency budgets and staffing levels. However, because that survey was conducted for only a few years during my study period (2000, 2003, 2007 and 2013), I also used a second source, a survey with wide coverage conducted annually through the Department of Justice's Uniform Crime Reporting Program. The UCR survey focuses on police agency employment data and provided staffing levels by year, although not agency budgets.[51]

I obtained crime data through the UCR's Offenses Known and Clearances by Arrest database. I obtained illicit drug use data from successive tranches of the National Survey on Drug Use and Health. Conducted by the Substance Abuse and Mental Health Services Administration within the U.S. Department of Health and Human Services, NSDUH is widely considered the leading source for drug usage data. It provides information at the national, state and sub-state levels.[52] I obtained annual economic data, usually on a county level, from several sources, and price level data from the Bureau of Economic Analysis. Appendix A provides a list of my data sources.

My analyses find little support for the premise that forfeiture proceeds help law enforcement fight crime, either in terms of solving more crimes or reducing drug usage. However, I did find evidence that police pursue forfeiture to raise revenue. Below I discuss the results of all three analyses in turn. (Full regression results for all analyses can be found in Appendix B.)

MORE FORFEITURE REVENUE DOES NOT MEAN MORE CRIMES SOLVED

Proponents insist proceeds from forfeiture help police fight crime. If proponents are right that forfeiture revenues flow back into fighting crime, we might expect police to solve more crimes as they take in greater equitable sharing revenue. Unfortunately for proponents, despite large datasets and two separate testing approaches, I find no meaningful relationship between forfeiture and crime solving.

To test this question, I calculated the proportion of reported crimes "cleared" by arrest, by year, for each agency represented in the UCR Offenses Known data series. Such "clearance rates" are a commonly used measure of how effective police are in solving crimes. The Offenses Known series records both reported crimes and clearances by arrest by crime type, allowing the calculation of clearance rates for the violent crimes of murder, manslaughter, rape, robbery, aggravated assault and simple assault and the property crimes of burglary, larceny, motor vehicle theft and arson. These "serious" crimes—unlike certain other crimes including drug crimes—rarely involve forfeiture proceeds, which means police are unlikely to be more motivated to pursue, and thus potentially to solve, these crimes because of the promise of forfeiture revenue. At the same time, there is no requirement that police use the funds to target the types of crime that most commonly involve forfeiture; indeed, an important rationale for forfeiture is that the proceeds can be used to target more serious crimes.[53] Looking at such crimes instead of crimes more likely to give rise to forfeiture therefore allowed me to do a clean test of whether more equitable sharing funds—not the potential of such funds in the future—help police solve more crimes.[54]

I constructed crime and forfeiture datasets using the four LEMAS years (2000, 2003, 2007 and 2012). The LEMAS data allowed me to control for both police budgets and staffing. I also constructed separate crime and forfeiture datasets for all years in the period 2004–2011, using the UCR staffing data, which provided the number of sworn officers by agency but not budgets. In both cases, I separated county police (i.e., sheriffs) from municipal police. Sheriffs' offices typically have a wider range of responsibilities than municipal police, often including court security, jail management and process service. Since the two types of agencies might spend equitable sharing funds quite differently, I put them into separate datasets.

Results suggest forfeiture does not help police solve more crime. The results of these analyses were statistically insignificant at conventional levels, suggesting additional forfeiture revenue does not translate into more crimes solved.[55] But even if the results were significant, the relationship between forfeiture and crime clearance would be vanishingly small. For example, the LEMAS data for municipal police suggest a $1,000 increase in equitable sharing funds *per officer* would mean solving just 2.4 more crimes per 1,000 reported offenses. So if an agency's clearance rate were, say, 270 per 1,000 offenses, receiving $1,000 more in equitable sharing funds per officer would mean increasing the clearance rate to just 272.4. A $1,000 increase in funds per officer would be substantial—total equitable sharing averages less than half of this[56]—yet such a windfall would make only a minor difference. Moreover, such tiny improvements in clearance rates would diminish as forfeiture revenue increases; for example, the first $500 per officer in a given year would have a greater impact than the second $500 per officer. These results suggest claims about forfeiture's crime-fighting importance are, at best, overstated.

Previous analysis along these lines is scant, but I have conducted similar studies testing the effects of LEMAS-reported forfeiture receipts, rather than equitable sharing proceeds, on crime clearance rates.[57] The results of those studies were broadly consistent with those reported here. My earlier studies found clearance rates improved with increasing forfeiture amounts, but the magnitude of improvements was less and less at greater forfeiture amounts. And while the results of the earlier studies were statistically significant, forfeiture's effects were, as here, very small.

MORE FORFEITURE MONEY DOES NOT MEAN LESS DRUG USE

Although forfeiture now applies to many non-drug crimes, drug trafficking remains a key focus. And the ultimate goal of reducing drug trafficking is, of course, to reduce illicit drug use. Equitable sharing revenues could, in theory, be used to attack drug use from two angles. First, they might flow back into traditional crime-fighting activities such as drug investigations and interdictions. And second, they can be used for drug education and other drug prevention programs that approach drug use from a public health standpoint.[58] If, as proponents claim, forfeiture combats drug trafficking, we might expect to see less drug use in jurisdictions where police take in more equitable sharing funds. Looking at no fewer than four drug use measures, I found no evidence that forfeiture proceeds led to reductions in any of them.

These results were based on analyses using NSDUH, a reliable survey of drug use. People who use illicit drugs tend, understandably, to be reticent about their drug use. As a result, drug use has long been notoriously difficult to measure. SAMHSA has made progress on this front over the years, however, refining NSDUH's survey methods to overcome people's reluctance to participate in the survey and improving the breadth of data collected.[59] From 2002 through 2014, the survey underwent no major relevant changes, making it possible to directly compare results over time.[60] This feature allowed me to explore whether increases in equitable sharing proceeds received by agencies within a particular NSDUH region were associated with reductions in drug use in those same regions. I controlled for police agency staffing, which could affect police effectiveness, as well as for demographic and economic factors sometimes associated with drug use: the proportion of the population age 15–24, the minority proportion of the population and the unemployment rate. The four NSDUH drug use measures I used were (1) use of any illicit drug in the previous year, (2) marijuana use in the previous year, (3) nonmedical use of prescription pain relievers in the previous year and (4) cocaine use in the previous year.

For none of these illicit drug use measures did I find increases in equitable sharing proceeds led to subsequent reductions in use. In short, to the extent forfeiture advocates hope increasing enforcement through forfeiture will reduce drug use, this does not appear to be happening.

FISCAL STRESS DOES MEAN MORE FORFEITURE ACTIVITY

The fact that law enforcement agencies can often spend forfeiture proceeds—and, indeed, in the case of equitable sharing proceeds, must use them as a budget supplement—has led to charges that agencies undertake forfeiture more to realize revenue than to disrupt or deter crime. Considerable anecdotal evidence, as well as some scholarly evidence, suggests there is at least some truth to these charges, and my results provide additional support. Using data for the period 2004 through 2014, I find a statistically significant link between increases in fiscal stress, as measured by local unemployment, and increases in equitable sharing activity, suggesting police do make greater recourse to forfeiture when local budgets are tight.

As measures of local and county fiscal well-being, I used unemployment rate and personal income, both standard proxies[61] and both aggregated to the county level. Unemployment works as a stand-in for fiscal health or stress because higher unemployment both reduces taxpayers' ability to fund municipal services and increases the need for many of those services. Higher unemployment also tends to go hand in hand with economic downturns, both locally and nationally, making it a good proxy for the ability of businesses and other ratepayers to provide municipal funding. Conversely, personal income can also serve as a proxy for fiscal well-being because as average incomes rise in a region so too does taxpayers' ability to pay for municipal services. Higher personal income also tends to accompany economic growth and so can stand in for the ability to raise taxes generally.

As in my tests of forfeiture's impact on crime clearance and drug usage rates, I used agency-specific equitable sharing data from CATS for this analysis. However, while the other two analyses explored the effects of equitable sharing funds on local policing outcomes, this analysis explores the effects of local economic conditions on equitable sharing behavior—that is, whether equitable sharing is a *response* by agencies to local economic conditions. This key difference meant looking at equitable sharing from the standpoint of seizures as well as funds received.

Every equitable sharing payout from the federal government to local law enforcement agencies begins with the seizure of an asset, whether as part of a joint federal–local operation or as a purely local operation that will lead to an adoption request. After a joint seizure, local agencies request a share of the asset's value; after an adoptive seizure, agencies ask the government to adopt the asset and remit their share (up to 80%) of the proceeds. Then the waiting begins. On average, it takes

about a year for equitable sharing funds to be distributed.[62] Any reactions to fiscal changes will thus be reflected in seizures but only indirectly, with uncertain lags, in the payout of equitable sharing funds. Fortunately, CATS includes seizure dates for all assets, and I was able to use these to match the annual equitable sharing amounts to changes in economic conditions.

Two additional factors could have made a difference in the results. First, agencies may react to fiscal stress by increasing not only the value of assets seized but also the *number* of assets seized. Even if an agency's forfeiture activity is motivated by a desire for revenue, the agency may find it difficult to predict which activities will lead to high-value seizures. For example, if officers increase traffic stops and accompanying seizures, we may see a considerable increase in the number of assets seized without a large change in the value of assets eventually forfeited. I therefore performed separate analyses of the effect of fiscal stress on the value of assets forfeited and on the number of assets seized.

Second, fiscal stress could, conceivably, encourage adoptive seizures in particular. Adoptions do not require the same type of coordination joint operations do and may therefore be more convenient for agencies. I have therefore separately analyzed the effect of fiscal stress on both the number and value of adoptive seizures.

In every case, I found that higher unemployment predicted more equitable sharing activity. For equitable sharing overall as well as for both joint operations and adoptions, the link between unemployment and both value of assets forfeited and number of assets seized was statistically significant. With respect to equitable sharing overall, a 1 percentage point increase in unemployment was associated with an 8.5 percentage point increase in the value of forfeited assets and a 9.5 per-

centage point increase in the number of assets seized (see Fig. 4). The latter result had slightly greater statistical significance. Finally, the results for adoptive and joint seizures were very similar, even though the former may be easier for local police to initiate. A possible explanation for why fiscal stress does not create a larger response in adoptive than in joint forfeiture is that police are already taking advantage of the relative ease of adoptive seizures on a routine basis.

Personal income, somewhat surprisingly, did not predict forfeiture behavior. The estimated effects were not statistically significant. One possible explanation is that personal income varies far less than unemployment over time. Its impact on fiscal stress and forfeiture may therefore be muted, particularly compared to unemployment.

Two limitations of these results are worth noting, both stemming from the proxies I used for fiscal stress and health. First, in addition to being associated with fiscal stress, unemployment could also lead to higher crime rates and thus more incidental forfeiture activity. However, my controlling for the number of reported major crimes helps address that.

A second limitation of these results is that the unemployment and personal income statistics are county level rather than by agency, and fiscal stress may affect different agencies within the same county differently. Ideally, I would have used law enforcement agency budgets as a measure of fiscal stress, but budget data were not—and are not—reliably available for the type of analyses I performed.[63] Nevertheless, the linkage between unemployment and forfeiture is at least highly suggestive, indicating a worsening economic environment leads to greater reliance on forfeiture and an improving economic environment to less.

Figure 4:
Local Unemployment and Police Equitable Sharing Activity

1% POINT
UNEMPLOYMENT

=

8.5% POINT
VALUE OF ASSETS FORFEITED

9.5% POINT
NUMBER OF ASSETS SEIZED
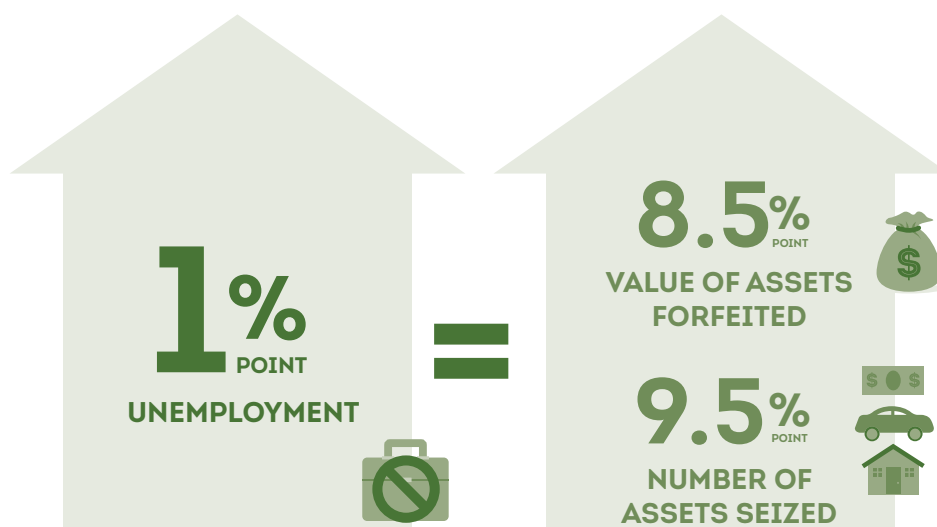
CONCLUSION

The results of this study question forfeiture proponents' claims that forfeiture—or at least equitable sharing, the nation's largest forfeiture program—fights crime effectively. At the same time, the results add to the small but growing body of scholarly evidence suggesting the ability to generate revenue is a significant motivator of police forfeiture activity, lending weight to critics' claims that law enforcement agencies use forfeiture to police for profit. I have not looked at civil and criminal forfeiture separately for reasons provided above. However, if civil and criminal forfeiture *combined* does not have a meaningful effect on crime fighting, it follows that civil forfeiture *alone* would be even further removed.

A natural further step would be to do a similar analysis of the effects of proceeds from state-law forfeitures on policing outcomes for those law enforcement agencies for which thorough, annual data are available after the year 2000. This may be possible for some states. While some of the generality of the current analysis would be lost, such an analysis could provide a more textured look at why the effects of forfeiture on policing outcomes are—or are not—largely inconsequential. Such an analysis might also test the effects of changes in, among other things, forfeiture regimes and the ability of agencies to avail themselves of equitable sharing funds.

As for whether and to what extent fiscal stress motivates seizure and forfeiture activity, further similar analysis could be done either at the state level or for a set of large police agencies nationally for which full budgetary characteristics could be developed. This would allow for the use of direct measures of fiscal stress rather than the proxies used here. Again, some generality would be lost, but the tradeoff would be more direct evidence of the relationship, if any, between budgetary changes and forfeiture changes.

As it stands, the weight of the scholarly evidence supports forfeiture critics. Given the serious civil liberties concerns raised by forfeiture, and especially civil forfeiture, the onus should be on forfeiture proponents to provide systematic, empirical evidence for their claims that forfeiture is a crucial law enforcement tool.

APPENDIX A: DATA SOURCES

Dataset	Download Origin
Uniform Crime Reporting Program Data: Offenses Known. Provided offenses known, offenses cleared by arrest and population served, by agency and year.	FBI's Uniform Crime Reports, accessed through Inter-university Consortium for Political and Social Research
Uniform Crime Reporting Program Data: Police Employee Data. Provided the number of sworn officers and civilian employment, by agency and year.	Criminal Justice Information Services Division, FBI
Law Enforcement Management and Administrative Statistics survey. Provided police budgets and the number of sworn officers, by agency for the years 2000, 2003, 2007 and 2013.	U.S. Bureau of Justice Statistics, accessed through ICPSR
Consolidated Assets Tracking System datasets, including DAG71_T, DISPOSAL_T, NCIC_CD_L, ASSET_T. Provided equitable sharing amounts and agency identification, by individual claim.	Asset Forfeiture Management Staff, U.S. Department of Justice
Covariate data: unemployment rates, by county and year.	U.S. Bureau of Labor Statistics
Covariate data: Annual County Resident Population Estimates by Age, Sex, Race, and Hispanic Origin. Provided minority proportion in the population and age distribution, by county and year.	Population Division, U.S. Census Bureau
Covariate data: personal income and expenditures by county and year.	Regional Product Division, Bureau of Economic Analysis, U.S. Department of Commerce
Gross Domestic Product: Implicit Price Deflator, quarterly series, BEA Account Code: A191RD3.	Bureau of Economic Analysis, U.S. Department of Commerce
National Survey on Drug Use and Health, sub-state series.	Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services

APPENDIX B: METHODS AND RESULTS

All of the regressions used fixed effects panel methods with robust standard errors. All panels were balanced.

EQUITABLE SHARING AND CRIME CLEARANCES

These tests explore whether forfeiture, as measured by equitable sharing distributions, has a measurable impact on the rate at which police solve crimes. There were two regression specifications for this analysis. Both treated the clearance rate—1,000 times clearances by arrest divided by offenses reported—as the dependent variable. The first used the Law Enforcement Management and Administrative Statistics survey data for 2000, 2003, 2007 and 2013 to supply agency budgets and the number of sworn police officers, while the second used the annual data available through the Uniform Crime Reporting Program for the number of sworn officers. Below I provide more detail on the two panels.

FOUR-YEAR PANEL

The four-year panel includes data corresponding to the four years of data gathered by the LEMAS survey since the year 2000. The advantage of this panel is that it includes police budgets as a covariate; the shortcoming is that the four years (2000, 2003, 2007 and 2013) are not evenly spaced and do not allow use of my full set of crime and covariate data.

The Offenses Known data provide reported crime and crimes cleared by arrest only for UCR codes 01 through 09 (see Table B1 for a listing of all UCR crime codes). Summing total crimes and clearances for these codes together, by agency and year, allowed me to calculate the dependent variable CLEAR as 1,000 x (reported incidents cleared by arrest / reported incidents). Multiplication by 1,000, which results in a clearance rate per thousand incidents, conforms the measure to the standard reporting units. The mean rate was 265 clearances per thousand incidents in the panel data.

My regressors were equitable sharing proceeds per sworn officer (hereafter referred to as forfeiture per sworn officer or just forfeiture), operating budget per sworn officer, sworn officers per population served, the natural logarithm of the population served, and year dummies for 2003, 2007 and 2010, with the year fixed effect measured against year 2000. Forfeiture per sworn officer averaged $700 annually, and operating budget per sworn officer averaged $114,300 annually. However, I denominated each of these variables in thousands of dollars to make the regression coefficients easier to interpret. I included quadratic terms for both forfeiture and operating budget to reflect likely diminishing marginal benefits of

increased funds. I measured sworn officers per capita as 1,000 x number of sworn officers per population served. The natural log of the population served was just that. The timing was year t for forfeiture and year $t+1$ for the other variables. The specification took the form:

Clearances/thousand offenses = β_1(1000 x Forfeiture/officer$_{it}$) + β_2(1000 x (Forfeiture/officer)$^2_{it}$) + β_3(1000 x Budget/officer$_{it}$) + β_4(1000 x (Budget/officer)$^2_{it}$) + β_5(Number of officers$_{it}$) + β_6(Log of population served$_{it}$) + β_7(Year 2003 dummy) + β_8(Year 2007 dummy) + β_9(Year 2009 dummy) + ε_{it}

Where i indicates the ith agency and t indicates the change in the level of the variable from period $t-1$ to t.

Table B2 provides the regression of forfeiture and other variables onto CLEAR for municipal police agencies in the columns headed All Reported Crimes. Forfeiture per officer has a coefficient of 2.426 on its linear term and -0.302 on its quadratic term. Neither coefficient is statistically significant. Their joint marginal effect is 2.426 – (0.604 x Forfeiture). To provide a sense of scale, consider the implied impact of forfeiture receipts on clearances at the overall mean forfeiture of $700 per officer (0.700 in the units used in the regression). The marginal impact of a $1 increase in forfeiture per officer is a clearance rate increase of 0.002 per thousand incidents. The cumulative effect at the mean of $700 per officer implied by the regression coefficients is approximately 1.5 additional clearances per thousand incidents, against a mean of 250. Besides being insignificant statistically, the effect of forfeiture is very small in a practical sense.

I applied the same methodology to three other dependent variables: index crime (or serious violent and property crimes), violent crime and property crime. Tables B1 and B2 define each of these in terms of the UCR crime codes. As usually defined, index crime does not include two of the 01 to 09 codes, those for negligent manslaughter (01B) and simple assault (08). This can matter because simple assault has a very large number of reported offenses. Removing these categories to create a variable CLEAR1, I obtained the output shown in the columns headed Index 1 Crimes in Table B2. The forfeiture

coefficient increases relative to all reported crime but remains statistically insignificant. A further breakout is between violent crime (columns headed Violent Crimes, which includes codes 01A, 02, 03 and 04) and property crime (columns headed Property Crimes, which includes codes 05, 06, 07 and 09). The effects of forfeiture on subsequent policing reach a weak level of statistical significance (at the 10% level) for property crime but remain small in practical terms.

Table B3 provides the corresponding results for county sheriffs' offices. This covered fewer agencies than the municipal panel, with larger standard errors resulting. The results show no statistically significant effect of forfeiture upon clearance rates.

EIGHT-YEAR PANEL

As an alternative regression approach, I used annual equitable sharing data from 2004 to 2011 rather than the four LEMAS survey years. The regression tested the impact on clearance rates in the succeeding years, 2005 through 2012. This had the advantage of being a larger and temporally evenly spaced panel. However, LEMAS had provided both the number of officers and the operating budgets by agency. I was able to recover the number of officers from a UCR source but did not have access to operating budgets by agency and thus was not able to control for this covariate. Otherwise this specification was the same as the first.

Results using this structure for municipal police agencies showed very low estimates for the impact of forfeiture on each definition of clearances (Table B4). In no case was forfeiture statistically significant. For the smaller county sheriffs' office panel, the coefficients on all reported crimes and violent crimes were again small and statistically insignificant (Table B5). However, while small, the forfeiture coefficients for Index 1 crimes and the subset of property crimes were statistically significant. The interpretation is that an increase (decrease) in forfeiture in one year is associated with an increase (decrease) in property crime clearances in the next year. But while statistically significant, the impact is practically very small, with an implied increase in clearances of 3.5 per 1,000 incidents as the cumulative effect of all forfeiture funds.

Finally, I note that statistical significance must be interpreted appropriately in this context. First, the databases include all agencies for which I had data, for the panel period, from each of the sources. They do not include agencies, a minority and mostly small in size, that did not participate in equitable sharing at all. For inference purposes, the years selected were effectively random, determined by the LEMAS schedule or the availability of consistent annual data. Statistical significance is thus a measure of the reliability of the results if applied to years or agencies not included in the data. Second, I have reported the results of several regressions. The odds of a false positive—of statistical significance indicated when none exists—are thus increased beyond the indicated power of the tests (1%, 5%, 10% levels). This should inform the reader's interpretation, although I note that highly significant (1% level) outcomes will remain significant at least at the 5% level under any possible multiple comparisons adjustment.

Table B1: Codes Used in the UCR Crime Reports

01A Murder and non-negligent manslaughter
01B Manslaughter by negligence
02 Forcible rape
03 Robbery
04 Aggravated assault
05 Burglary (breaking or entering)
06 Larceny theft (not motor vehicles)
07 Motor vehicle theft
09 Arson

PART I CRIMES:
Index 1 Crimes: 01A, 02, 03, 04, 05, 06, 07, 09
Violent Crimes: 01A, 02, 03, 04
Property Crimes: 05, 06, 07, 09

08 Other assaults (i.e., simple assault)
10 Forgery and counterfeiting
11 Fraud
12 Embezzlement
13 Stolen property (buy, receive, possess)
14 Vandalism
15 Weapons (carry, possess, etc.)
16 Prostitution and commercialized vice
17 Sex offenses (not rape or prostitution)
18 Drug abuse violations (total)
180 Sale/manufacture (subtotal)
185 Possession (subtotal)
18A Sale/manufacture of opium, cocaine and their derivatives
18B Sale/manufacture of marijuana
18C Sale/manufacture of truly addicting synthetic narcotics
18D Sale/manufacture other dangerous nonnarcotic drugs
18E Possession of opium, cocaine and their derivatives
18F Possession of marijuana
18G Possession of truly addicting synthetic narcotics
18H Possession of other dangerous nonnarcotic drugs
19 Gambling (total)
19A Bookmaking (horse and sports)
19B Number and lottery
19C All other gambling
20 Offenses against family and children
21 Driving under the influence
22 Liquor laws
23 Drunkenness
24 Disorderly conduct
25 Vagrancy
26 All other non-traffic offenses
27 Suspicion
28 Curfew and loitering violations
29 Runaways
998 (M) Not applicable

Note: The UCR Offenses Known ("Return A") data report number of offenses for each of the "Part I" crimes (including code 01B) as well as for simple assaults (code 08), a non-Part I crime. The UCR Arrests by Age, Sex and Race data report arrest data for all crime codes. Codes other than Part I are referred to as "Part II."

Table B2: Effects of Forfeiture on Crime Clearance Rates
Municipal Police, Four-Year Panel Using LEMAS Data

Variables	All Reported Crimes		Index 1 Crimes		Violent Crimes		Property Crimes	
	Coefficients	S.E.	Coefficients	S.E.	Coefficients	S.E.	Coefficients	S.E.
Forfeiture	2.426	3.345	4.179	2.748	6.975	6.061	4.256*	2.570
$(Forfeiture)^2$	-0.302	0.201	-0.365**	0.173	-0.721*	0.380	-0.345**	0.163
Budget	0.194	0.201	0.423**	0.173	0.451	0.289	0.401**	0.168
$(Budget)^2$	-0.001***	0.000	-0.002***	0.000	-0.001	0.001	-0.002***	0.000
# of Officers	25.979**	11.287	25.701***	8.857	30.625	22.492	24.715***	7.949
Population	97.597***	27.355	84.180***	21.461	67.022	45.801	88.147***	20.549
Year 2003	6.539	4.917	4.551	3.889	2.570	10.356	4.876	3.650
Year 2007	23.529***	5.569	18.240***	4.300	-4.941	10.605	17.840***	4.069
Year 2013	52.075***	9.121	43.501***	6.834	17.203	13.923	42.107***	6.354
R^2	0.743		0.723		0.667		0.747	
F Test	8.75***		7.88***		6.45***		8.66***	

* p-value < 0.10, ** p-value < 0.05, *** p-value < 0.01.

Definitions – dependent variables. Units are clearance rates per 1,000 reported crimes:

All Reported Crimes: Clearance rates for crime codes 01 through 09, including 01B and 08.

Index 1 Crimes: Clearance rates for crime codes 01 through 09, excluding 01B and 08.

Violent Crimes: Clearance rates for crime codes 01A, 02, 03 and 04.

Property Crimes: Clearance rates for crime codes 05, 06, 07 and 09.

Definitions – regressors, per agency basis:

Forfeiture: Equitable sharing proceeds per sworn officer.

Budget: Budget per sworn officer.

# of Officers: 1,000 x number of sworn officers per population served.

Population: Natural logarithm of the population served by the agency.

Year 2003, Year 2007 and Year 2013: Year fixed effects relative to year 2000.

Table B3: Effects of Forfeiture on Crime Clearance Rates
County Sheriffs' Offices, Four-Year Panel Using LEMAS Data

Variables	All Reported Crimes		Index 1 Crimes		Violent Crimes		Property Crimes	
	Coefficients	S.E.	Coefficients	S.E.	Coefficients	S.E.	Coefficients	S.E.
Forfeiture	0.383	16.750	-3.363	15.256	-12.530	27.485	-6.547	13.809
$(Forfeiture)^2$	-1.365	3.935	-1.248	3.825	3.924	6.483	-0.931	3.460
Budget	0.349	0.296	0.325	0.244	0.412	0.426	0.274	0.221
$(Budget)^2$	-0.000	0.001	-0.000	0.000	-0.001	0.001	-0.000	0.000
# of Officers	3.050***	1.062	1.417	1.019	1.867	1.853	1.148	1.001
Population	110.196***	39.001	128.958***	39.902	112.890	70.678	127.155***	39.555
Year 2003	-17.280	10.655	-10.098	9.767	1.349	18.159	-7.933	9.258
Year 2007	-25.544**	12.354	-20.080*	11.319	-20.627	20.263	-12.297	10.030
Year 2013	-6.400	22.057	-3.218	20.387	-18.384	29.441	4.127	17.500
R^2	0.782		0.792		0.706		0.806	
F Test	11.12***		11.73***		8.33***		12.38***	

* p-value < 0.10, ** p-value < 0.05, *** p-value < 0.01.

Definitions – dependent variables. Units are clearance rates per 1,000 reported crimes:

All Reported Crimes: Clearance rates for crime codes 01 through 09, including 01B and 08.

Index 1 Crimes: Clearance rates for crime codes 01 through 09, excluding 01B and 08.

Violent Crimes: Clearance rates for crime codes 01A, 02, 03 and 04.

Property Crimes: Clearance rates for crime codes 05, 06, 07 and 09.

Definitions – regressors, per agency basis:

Forfeiture: Equitable sharing proceeds per sworn officer.

Budget: Budget per sworn officer.

# of Officers: 1,000 x number of sworn officers per population.

Population: Natural logarithm of the population served by the agency.

Year 2003, Year 2007 and Year 2013: Year fixed effects relative to year 2000.

Table B4: Effects of Forfeiture on Crime Clearance Rates
Municipal Police, Eight-Year Annual Panel

Variables	All Reported Crimes Coefficients	S.E.	Index 1 Crimes Coefficients	S.E.	Violent Crimes Coefficients	S.E.	Property Crimes Coefficients	S.E.
Forfeiture	-0.004	0.769	0.143	0.731	-0.308	1.221	0.308	0.733
(Forfeiture)^2	0.004	0.008	0.001	0.006	0.005	0.019	-0.000	0.006
# of Officers	33.963***	6.742	29.128***	5.996	52.033***	17.421	24.681***	5.414
Population	89.963***	19.594	69.219***	17.676	113.949***	38.376	70.721***	17.171
Year 2005	-1.458	3.749	-3.911	3.441	-12.415**	5.988	-5.112	3.506
Year 2006	1.838	3.323	-0.749	2.943	-19.750***	6.020	-0.884	2.931
Year 2007	12.128***	3.376	12.496***	2.977	-5.893	6.367	12.579***	2.891
Year 2008	24.268***	3.658	23.927***	3.413	8.447	6.324	23.101***	3.431
Year 2009	21.262***	3.651	18.705***	3.186	14.021**	6.150	16.893***	3.141
Year 2010	20.596***	3.470	17.720***	3.051	18.705***	6.518	16.551***	3.028
Year 2011	24.187***	3.920	23.986***	3.465	11.637*	6.969	24.030***	3.407
R^2	0.778		0.759		0.732		0.773	
F Test	32.93***		29.10***		27.90***		30.95***	

* p-value < 01, ** p-value < 0.05, *** p-value < 0.01.

Definitions – dependent variables. Units are clearance rates per 1,000 reported crimes:

All Reported Crimes: Clearance rates for crime codes 01 through 09, including 01B and 08.

Index 1 Crimes: Clearance rates for crime codes 01 through 09, excluding 01B and 08.

Violent Crimes: Clearance rates for crime codes 01A, 02, 03 and 04.

Property Crimes: Clearance rates for crime codes 05, 06, 07 and 09.

Definitions – regressors, per agency basis:

Forfeiture: Equitable sharing proceeds per sworn officer.

Budget: Budget per sworn officer.

# of Officers: 1,000 x number of sworn officers per population.

Population: Natural logarithm of the population served by the agency.

Year 2005, Year 2006, Year 2007, Year 2008, Year 2009, Year 2010 and Year 2011: Year fixed effects relative to (match) year 2004.

Table B5: Effects of Forfeiture on Crime Clearance Rates
County Sheriffs' Offices, Eight-Year Annual Panel

Variables	All Reported Crimes Coefficients	S.E.	Index 1 Crimes Coefficients	S.E.	Violent Crimes Coefficients	S.E.	Property Crimes Coefficients	S.E.
Forfeiture	0.994	1.905	3.302***	1.276	2.738	3.238	3.480***	1.247
(Forfeiture)^2	-0.002	0.037	-0.032	0.022	0.044	0.056	-0.045**	0.022
# of Officers	-0.093	0.628	-0.515	0.379	-0.014	0.741	-0.463	0.403
Population	20.290	23.799	22.719	14.162	21.109	31.069	24.330	15.506
Year 2005	-12.219*	6.503	-11.669**	5.189	-9.729	12.656	-12.597***	4.620
Year 2006	-9.905*	5.879	-10.748**	4.950	-21.456**	10.330	-10.488**	4.642
Year 2007	-2.310	6.002	2.592	5.459	-2.497	11.219	2.473	5.022
Year 2008	11.782**	5.819	9.285**	4.692	-2.859	10.722	7.719*	4.452
Year 2009	9.039	6.476	8.099	5.119	5.981	11.322	7.462	4.824
Year 2010	11.631*	6.277	7.352	4.837	22.452*	12.634	8.936*	4.560
Year 2011	15.062**	7.209	11.096*	5.943	12.476	13.085	13.406**	5.675
R^2	0.794		0.781		0.651		0.802	
F Test	31.77***		29.48***		17.73***		32.63***	

* p-value < 0.10, ** p-value < 0.05, *** p-value < 0.01.

Definitions – dependent variables. Units are clearance rates per 1,000 reported crimes:

All Reported Crimes: Clearance rates for crime codes 01 through 09, including 01B and 08.

Index 1 Crimes: Clearance rates for crime codes 01 through 09, excluding 01B and 08.

Violent Crimes: Clearance rates for crime codes 01A, 02, 03 and 04.

Property Crimes: Clearance rates for crime codes 05, 06, 07 and 09.

Definitions – regressors, per agency basis:

Forfeiture: Equitable sharing proceeds per sworn officer.

Budget: Budget per sworn officer.

# of Officers: 1,000 x number of sworn officers per population.

Population: Natural logarithm of the population served by the agency.

Year 2005, Year 2006, Year 2007, Year 2008, Year 2009, Year 2010 and Year 2011: Year fixed effects relative to (match) year 2004.

Table B6: Effects of Forfeiture on Illicit Drug Use
Annual Data, Rolling Average NSDUH Data

Variables	All Illicit Drugs		Marijuana		Nonmed Use		Cocaine	
	Coefficients	S.E.	Coefficients	S.E.	Coefficients	S.E.	Coefficients	S.E.
Forfeiture	0.000072	0.000125	-0.000130	0.000177	0.000104	0.000067	0.000072*	0.000039
# of Officers	-0.003670	0.003700	-0.001570	0.004870	-0.000840	0.002280	-0.002150*	0.001250
Population	-0.008640*	0.004390	-0.008040	0.005040	-0.001360	0.002000	-0.000190	0.001650
Unemployment	0.000415	0.000297	0.000330	0.000341	0.000143	0.000164	0.000189**	0.000089
Minority	-0.036040	0.054600	-0.196610***	0.068300	-0.023650	0.028800	-0.017000	0.015800
Proportion 15–24	0.040357	0.101500	0.000729	0.128000	-0.096880	0.059000	0.023407	0.034700
Year 2005	0.001937*	0.001070	0.000162	0.001310	0.002225***	0.000509	0.000333	0.000333
Year 2007	0.002861***	0.001070	-0.001060	0.001340	0.003506***	0.000528	-0.000170	0.000331
Year 2009	0.007136***	0.001410	0.005772***	0.001680	0.000626	0.000746	-0.004640***	0.000426
Year 2011	0.008970***	0.001400	0.009096***	0.001680	-0.002250***	0.000712	-0.007860***	0.000394
Year 2013	0.015360***	0.001230	0.019691***	0.001570	-0.005720***	0.000620	-0.007440***	0.000335
R^2	0.853		0.880		0.749		0.805	
F Test	21.22***		27.02***		10.43***		10.45***	

* p-value < 0.10, ** p-value < 0.05, *** p-value < 0.01.

Definitions – dependent variables. Units are the proportion of the respondents who have engaged in the listed activity in the previous year:

All Illicit Drugs: Use of any illicit drug.

Marijuana: Use of marijuana.

Nonmed Use: Nonmedical use of prescription pain relievers.

Cocaine: Use of cocaine.

Definitions – regressors, per agency basis:

Forfeiture: Natural logarithm of equitable sharing proceeds per sworn officer.

# of Officers: Natural logarithm of the number of sworn officers.

Population: Natural logarithm of the population served by the agency.

Unemployment: Unemployment rate.

Minority: Minority proportion in the population.

Proportion 15–24: Proportion of population age 15–24.

Year 2005, Year 2007, Year 2009, Year 2011 and Year 2013: Year fixed effects relative to year 2003, where the year is the middle of the three-year NSDUH rolling average period.

FISCAL STRESS AND EQUITABLE SHARING

These tests address whether increased financial stress on police agencies causes them to pursue forfeiture, as measured by equitable sharing activity, more actively. In contrast to the preceding regressions, here forfeiture is the dependent variable, and I use covariates of fiscal stress to determine whether such stress has a significant association with forfeiture. The structure was annual data for all variables.

As regressors, I included the number of sworn officers as directly influencing the amount of seized assets; the unemployment and personal income of each county as proxies for fiscal stress; the minority proportion of the population and proportion of the population age 15–24 as widely used correlates of police activity; the number of offenses reported also as a measure of demands upon police; and the population served. My principal regressions were in logarithms on the equitable sharing, number of sworn officers, number of offenses and population served. The model for one example took the form:

Log of equitable sharing = β_1(Log of number of officers$_{it}$) + β_2(Unemployment rate$_{it}$) + β_3(Personal income$_{it}$) + β_4(Minority proportion$_{it}$) + β_5(Proportion aged 15–24$_{it}$) + β_6(Log of population served$_{it}$) + β_7(Year 2005 dummy) + β_8(Year 2006 dummy) + β_9(Year 2007 dummy) + β_{10}(Year 2008 dummy) + β_{11}(Year 2009 dummy) + β_{12}(Year 2010 dummy) + β_{13}(Year 2011 dummy) + β_{14}(Year 2012 dummy) + ε_{it}

Where i indicates the ith agency and t indicates the change in the level of the variable from period $t-1$ to t. The unemployment rate, personal income and minority proportions are measured at the county level, then applied to the agencies within the respective counties.

The dependent variable could be defined as either equitable sharing (forfeiture) requests by local agencies or equitable sharing (forfeiture) receipts by those agencies. Another way of looking at this is that equitable sharing requests represent the number of assets seized, while equitable sharing receipts represent the value of assets forfeited. Results for both are provided in Table B7. The unemployment rate is a statistically significant and material predictor of forfeiture under either definition. The estimate of 0.095 in the first column, for example, implies that a 1 percentage point increase in the unemployment rate implies a 9.5 percentage point increase in equitable sharing requests made by local agencies. The relative unimportance of the number of sworn officers, personal income, proportion of the population age 15–24 and total population holds across all regressions, as does the importance of some of the year dummies. Minority proportion of the population has a statistically significant negative coefficient, indicating a negative relationship between changes in the minority share and changes in forfeiture, but the level of the coefficient is very small.

All sets of the regressions showed reasonably strong goodness of fit, with R^2 values ranging from 0.6 to 0.8. Additionally, the F test decisively rejected the null of no joint significance of the regressors in all cases.

Table B7: Effects of Fiscal Stress on Forfeiture
Annual Panel Data

Variables	Forfeiture Requests		Forfeiture Receipts	
	Coefficients	S.E.	Coefficients	S.E.
Unemployment	0.095***	0.030	0.085***	0.030
Personal Income	0.000	0.000	0.000	0.000
# of Officers	0.311	0.534	0.459	0.492
Offenses	-0.071	0.180	-0.041	0.188
Minority	-0.068**	0.030	-0.067**	0.031
Proportion 15–24	-0.102	0.155	-0.118	0.151
Population	1.024	0.802	0.961	0.840
Year 2005	0.127	0.103	0.141	0.099
Year 2006	0.297***	0.113	0.338***	0.109
Year 2007	0.209*	0.124	0.262**	0.122
Year 2008	0.012	0.122	0.078	0.123
Year 2009	-0.296*	0.169	-0.197	0.170
Year 2010	-0.268*	0.161	-0.163	0.163
Year 2011	-0.111	0.162	0.007	0.168
Year 2012	-0.126	0.141	-0.035	0.145
Year 2013	-0.429***	0.148	-0.337**	0.153
Year 2014	-1.393***	0.157	-0.471***	0.160
R^2	0.580		0.564	
F Test	6.83***		7.21***	

* p-value < 0.10, ** p-value < 0.05, *** p-value < 0.01.

Definitions – dependent variables:

Forfeiture Requests: Natural logarithm of the dollar value of equitable sharing requests by agency.

Forfeiture Receipts: Natural logarithm of the dollar value of equitable sharing receipts by agency.

Definitions – regressors, per agency basis:

Unemployment: Unemployment rate, in percentage points.

Personal Income: Per capita personal income.

# of Officers: Natural logarithm of the number of sworn officers per population.

Offenses: Natural logarithm of number of offenses reported to police.

Minority: Minority proportion in the population.

Proportion 15–24: Proportion of the population age 15–24.

Population: Natural logarithm of the population served by the agency.

Year 2005, Year 2006, Year 2007, Year 2008, Year 2009, Year 2010, Year 2011, Year 2012, Year 2013 and Year 2014: Year fixed effects relative to (match) year 2004.

ENDNOTES

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26 Equitable sharing distributions declined significantly in the later months of calendar year 2016. Although the precise causes have not been empirically determined, this may be due to a combination of Holder's restrictions on adoptive forfeiture and delays in posting to CATS.

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45 Carpenter et al., 2015; Pimentel, 2018; Blumenson, 1998; Hadaway, 2000; Drug Policy Alliance, 2015; Chi, 2002; Vecchi and Sigler, 2001.

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47 U.S. Department of Justice Office of the Inspector General, 2017, p. 16.

48 U.S. Department of Justice Office of the Inspector General, 2017, pp. 20, iii.

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52 See SAMHSA's NSDUH webpage for a fuller description: https://www.samhsa.gov/data/data-we-collect/nsduh-national-survey-drug-use-and-health

53 *Caplin & Drysdale, Chartered v. United States*, 491 U.S. 617, 629 (1989).

54 Conducting such an analysis using data on drug and other crimes that more often involve forfeiture would make the direction of causality difficult to determine. The particular availability of the forfeiture tool with respect to those crimes is intended precisely to encourage enforcement, so higher clearance rates for those crimes could stem from police being more highly motivated to pursue those crimes by the promise of future revenue instead of, or in addition to, their being more efficient due to having greater resources at their disposal.

55 For the municipal police agency datasets, forfeiture has no statistically significant association with clearance rates with one exception: property crimes analyzed using the four-year panel. In that case, there was weak significance, at the 10% level, but the estimated effect was immaterial in practical terms. For the county dataset that takes into account changes in police budgets (i.e., the four-year panel), forfeiture had no statistically significant association with clearances. For the annual county dataset,

EQUITABLE SHARING AND DRUG USE

The purpose of these tests was to investigate whether forfeiture, as measured by equitable sharing distributions, has a measurable impact on illicit drug use, as measured by the Substance Abuse and Mental Health Services Administration through the National Survey on Drug Use and Health. Structurally, I used annual data organized as a fixed effects panel, with the drug outcomes included as the three-year overlapping averages that NSDUH reports.

I treated four NSDUH outcomes as dependent variables in separate regressions: all illicit drug use in the past year, marijuana use in the past year, nonmedical use of prescription pain relievers in the past year and cocaine use in the past year. I used NSDUH data at the regional level, the most detailed level possible from the surveys. The data have the odd feature of being reported in overlapping three-year tranches: 2002–2004, 2004–2006, 2006–2008, 2008–2010, 2010–2012 and 2012–2014. The survey immediately preceding 2002 was for the non-overlapping period 1999–2001 and used different methodologies than the later iterations. Starting with the 2014–2016 survey, methodologies again changed. Consequently, I restricted the analysis to the six survey periods listed above, starting in 2002 and ending in 2014.

To place the other variables on the same basis as the NSDUH outcomes, I averaged them for three-year periods. I averaged the equitable sharing distributions for the three-year periods ending with the central year of the three-month NSDUH moving averages, creating an overlap with the first two years of those averages. I had two reasons for this. First, any effect on drug use from receipt of equitable sharing funds would likely be delayed, so allowing a delay between the independent (equitable sharing funds) and dependent (drug usage measures) variables makes sense. Second, there is a possible identification problem: Since many forfeitures result from drug arrests, one would expect increased drug use to be associated with increased equitable sharing distributions. Equitable sharing distributions lag property seizures by somewhat over a year on average, so the overlap of seizures with the NSDUH periods is minimized by introducing the one-year lag. I used a log transform of the equitable sharing amounts to reflect likely declining marginal product for forfeiture funds and to allow a more intuitive interpretation of the results.

I included three commonly asserted covariates for drug use: the unemployment rate, minority proportion of the population and proportion of the population age 15–24 years. For each, I calculated the average rates for the three years corresponding to the NSDUH years. I included the number of officers as a scaling variable for agency size. I included the log of population and year dummies for the last five of the six periods.

Table B6 provides the regression results for the four dependent variables. I used log transforms of forfeiture and some other regressors because this permitted more intuitive interpretations of the results.

The coefficients are generally small and are shown to six decimal places in Table B6. The first one, for all illicit drug use in the previous year, is 0.000072 when taken to six decimal places. This estimate suggests that a 1% increase in forfeiture receipts is associated with a 0.0072 percentage point *increase* in illicit drug use. Little should be made of the sign on this estimate, nor of the estimate itself, since it is not statistically significant. The estimates for the other three regressions also suggest increasing drug use with increasing forfeiture. However, the increases were again tiny, and the estimates for marijuana use and nonmedical use of prescription pain relievers were not significant. The estimate for cocaine use was statistically significant, though still miniscule. Across none of the regressions did increases in forfeiture lead to reductions in illicit drug use.

for which police budgets are not available, increased forfeiture was associated with an increased clearance rate for property crimes; since property crimes form a large majority of Index 1 crimes (murder, rape, aggravated assault, burglary, larceny, motor vehicle theft and arson), this led to a statistically significant association with clearances for those crimes taken together. However, again, the estimated effects were immaterial in practical terms. See Appendix B for the full results.

56 Source: author's calculations from CATS.

57 Kelly, B. D. (2015). Further results concerning the effects of asset forfeiture on policing. SSRN. https://ssrn.com/abstract=2647629; Kelly, B. D., & Kole, M. (2016). The effects of asset forfeiture on policing: A panel approach. *Economic Inquiry, 54*(1), 558–576.

58 U.S. Department of Justice, & U.S. Department of the Treasury. (2018). *Guide to equitable sharing for state, local, and tribal law enforcement agencies*. https://www.justice.gov/criminal-afmls/file/794696/download; U.S. Marshals Service. (n.d.). *Asset Forfeiture Program*. Retrieved (May 10, 2019) from https://www.usmarshals.gov/assets/; Federal Bureau of Investigation. (n.d.) *Asset forfeiture*. Retrieved (May 10, 2019) from https://www.fbi.gov/investigate/white-collar-crime/asset-forfeiture; Williams, M. R. (2002). Research note: Civil asset forfeiture: Where does the money go? *Criminal Justice Review, 27*(2), 321–329.

59 In 1999, SAMHSA broadened NSDUH's coverage to all 50 states and changed the interview method from paper and pencil to audio. It also began offering a modest monetary incentive for participation. Substance Abuse and Mental Health Services Administration. (n.d.) *National Survey on Drug Use and Health*. https://www.samhsa.gov/data/data-we-collect/nsduh-national-survey-drug-use-and-health

60 An oddity of the NSDUH data releases is that they occur in three-year overlapping tranches: 2002–2004, 2004–2006 and so forth. However, this did not prevent their inclusion into the annual panel data.

61 Francis, N. (2012). Revenue estimation. In R. D. Abel & J. E. Petersen (Eds.), *The Oxford Handbook of State and Local Government Finance* (pp. 497–514). New York, NY: Oxford University Press.

62 Source: author's calculations from CATS.

63 LEMAS does ask for budgets, but the survey was conducted only for years 2000, 2003, 2007 and 2013. The gaps in annual coverage make it difficult to infer fiscal stress or prosperity from budget changes, greatly lessening the survey's usefulness for my purposes. The LEMAS data could potentially lend itself to testing for particular states. However, such an approach would make for a less powerful analysis than an approach spanning nearly all agencies across the country.

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Brian Kelly is associate professor of economics at Seattle University. He specializes in applied microeconomics, particularly the economics analysis of law, market power and antitrust, and the empirical analysis of the effects of trade policy regimes.

Dr. Kelly's interest in forfeiture grew out of his teaching and research in the economic analysis of law, particularly incentive effects created by different legal regimes. He has conducted extensive research with respect to forfeiture with an emphasis on quantification. His current projects include quantitative assessments of the civil liberties impacts of forfeiture and the success of forfeiture in meeting its stated goals.

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ACKNOWLEDGMENTS

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