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Multijurisdictional Enforcement Games

Kevin E. Davis*

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Abstract

Economic analyses of law enforcement generally focus on situations in which law is enforced by a single public agency in a single jurisdiction which faithfully follows its announced enforcement strategy. This does not reflect the reality of enforcement aimed at corporate crime, which commonly involves multiple agencies, often based in different jurisdictions. This chapter will discuss the analysis of multijurisdictional law enforcement, with particular reference to cases concerning foreign bribery. The premise is that this kind of interaction can be modelled as a dynamic multi-player game in which the players include both enforcement agencies and firms. The first step is to describe the structure of the game: the range of possible players, the actions open to them, and their preferences over outcomes, as well as when the players act and what they know about other players’ actions. The next step is to discuss how the enforcement game is likely to be played, meaning what strategies firms and enforcement agencies are likely to adopt. In principle, this kind of analysis can be used to formulate testable hypotheses about outcomes of interactions between regulators and firms. Unfortunately, opportunities to evaluate these kinds of hypotheses empirically are limited because many aspects of the structure of the game are difficult to observe, and firms’ misconduct and regulators’ enforcement activities typically are only observable when they result in formal sanctions. The chapter concludes with a discussion of some of the challenges inherent in normative analysis of the outcomes of multi-jurisdictional law enforcement games.

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Introduction

On December 15, 2008, Siemens AG, a German multinational corporation, publicly acknowledged that it had paid bribes totaling more than $1.4 billion to government officials in Asia, Africa, Europe, the Middle East and the Americas between 2001 and 2007. The acknowledgement was made as Siemens (along with three of its subsidiaries) pleaded guilty to violations of the US Foreign Corrupt Practices Act (FCPA) and simultaneously settled proceedings brought by the US Securities and Exchange Commission (SEC) and the Munich Public Prosecutor’s Office. The allegations subsequently led to settlements with the World Bank and governments or enforcement agencies in several other countries, including Greece, Italy, Nigeria and Switzerland.

As the Siemens case illustrates, economic crime, along with the enforcement efforts mounted in response, can be a multinational phenomenon. The potentially global scale of economic crime complicates efforts to analyze interactions between potential wrongdoers and law enforcement agencies. In simple models of crime and punishment a single representative actor decides whether or not to commit an offence taking into account sanctions and enforcement practices established in advance by a single enforcement agency (see e.g. Becker 1968, Arlen and Kraakman 1997, Garoupa 1997, Polinsky and Shavell 2007). In reality, a heterogeneous set of firms and individuals choose whether to engage in misconduct based on their beliefs about how enforcement agencies from multiple jurisdictions will decide to behave in the future. Sometimes these complications matter: enforcement or compliance strategies that are optimal in a world with a single enforcement agency that must commit to its strategy in advance might be
far from optimal in a world with multiple enforcement agencies that can tailor their strategies to respond to observed patterns of misconduct.

Despite the inherent challenges, there is considerable value in taking the time to understand and analyze enforcement and compliance in dynamic multijurisdictional settings. Regulation of foreign bribery is an important case in point. Since the turn of the century there has been a dramatic expansion in the number of countries that prohibit bribery of foreign public officials, with a corresponding increase in the number of agencies involved in regulating this kind of misconduct. Moreover, the U.S., Germany and a handful of other countries have begun to enforce their prohibitions on foreign bribery quite vigorously. The emergence of this new regime has been widely celebrated, but many questions about it remain unanswered. How will various countries enforce prohibitions on foreign bribery? How will firms respond? What kinds of data should we collect to figure out which enforcement or compliance strategies have been adopted? The answers to these questions will help to determine whether the new anti-bribery regime represents a path-breaking step toward reducing impunity or an unprecedented waste of enforcement and compliance resources. Similar questions can be asked about enforcement regimes aimed at many other kinds of transnational economic crime, ranging from email scams to money laundering to cyberterrorism.

This chapter points the way toward using game theoretic analysis to answer these kinds of questions. The premise is that law enforcement can be conceptualized as a dynamic multiplayer game involving various types of firms, individuals, victims, public officials and enforcement agencies. Ideally it would be possible to use this kind of analysis to formulate testable hypotheses about the outcomes of interactions between firms and enforcement agencies. Unfortunately, game theoretic analysis is unlikely to be a reliable source for these kinds of
insights. There are too many factors that complicate the tasks of describing the structure of the game (i.e. players, objectives, sequences of actions and information structures), predicting how it will be played, finding empirical confirmation of those descriptions and predictions, and settling on normative criteria against which to evaluate outcomes. No tractable model can accommodate all these complicating factors. One of the main objectives of this chapter is to demonstrate the limits of models that ignore the various complications. The chapter focuses on enforcement of laws against foreign bribery, but many of the arguments carry over to enforcement of other laws.

**Players and actions**

Who plays the enforcement game? On one side we have potential wrongdoers. Most economic crime occurs in organizational settings and sometimes we treat the organizations as players of the enforcement game: ‘Firm X paid bribes in five different countries’ or ‘Bank Y engaged in money laundering’. Sometimes though, it is helpful to identify individuals as the players: the sales manager who pays the bribe, or the account representative who turns a blind eye to warning signs in a client’s explanation of her source of funds. The situation becomes even more complicated if we take into account corporate subsidiaries and joint ventures. In the Siemens case, for instance, investigations were aimed not only at the German parent company, but also at several of its subsidiaries, joint ventures between Siemens and other companies, and several individual Siemens employees.

Misconduct sometimes involves multiple wrongdoers who are not part of the same formal organization. In fact, some offenses necessarily involve multiple actors; bribery is a classic example since it necessarily involves both a payer and a recipient. A complete specification of any given law enforcement game should include all of these actors.
Potential wrongdoers do more than simply decide whether or not to engage in misconduct; avoiding or preventing misconduct can entail many distinct actions. This is especially obvious in the case of organizational actors which act through multiple agents. For instance, a firm that wishes to prevent bribery can turn down opportunities to do business in high-risk countries, screen potential employees for honesty and integrity, train existing employees to refrain from unlawful payments or ensure that its incentive compensation scheme does not effectively award bonuses for bribery. Organizational actors must also choose whether and to what extent to gather information about their agents’ past misconduct through surveillance and audits. And both individual and organizational actors must decide whether and when to report past misconduct to various enforcement agencies. Potential wrongdoers also must decide whether to devote resources to substitutes or complements for illegal activity. For instance, lobbying can serve as a substitute for bribery while opaque accounting practices can serve as a complement.

On the enforcement side of the game are public agencies that engage in monitoring, investigation, adjudication and sanctioning as well as dissemination of information about these activities. (For present purposes I will assume that legal standards are established prior to enforcement and ignore legislatures and other actors involved in the lawmaking process.) Those agencies include, at a minimum, police, criminal prosecutors and courts. Specialized regulatory agencies (e.g. securities regulators) as well as bodies such as legislative committees also play a role sometimes. And thinking more broadly, officials charged with public procurement act as enforcement agencies to the extent they take violations of law into account when deciding whether someone is eligible to be awarded a public contract. Similarly, any government agency that serves the business community might play an enforcement role to the extent it receives and
passes on information about suspected misconduct. To further complicate matters, because enforcement agencies are organizations, there is always the option of treating individuals within the agency – prosecutors, police officers, parliamentarians etc. – rather than the agency itself as the players of the enforcement game. This will be appropriate if leaders of the organization find it difficult to induce individual employees or agents to keep their behavior in line with a coherent set of organizational objectives. And of course, these enforcement agencies and agents may be scattered across multiple countries.

When a multinational enterprise like Siemens bribes a public official, any or all of these agencies can participate in the enforcement game (see, Spahn 2012; Davis, Jorge and Machado 2015a). The firm may be charged by criminal prosecutors in the jurisdiction where the official is located. The official’s government might also initiate civil proceedings in any jurisdiction where the firm or its assets are located to recover compensation for the harm it suffered (such as overpayment in public procurement) as a result of the bribe. At the same time, if the case is sufficiently scandalous it might become the subject of a parliamentary investigation. Meanwhile, the US Department of Justice (DOJ) may bring criminal charges for violation of FCPA and the SEC might impose civil and administrative sanctions. These proceedings may unearth evidence of bribery in other jurisdictions which might launch their own criminal, civil, administrative or legislative proceedings. Those proceedings might lead procurement officers in various countries to bar the firm from doing business with the government. Moreover, if the bribes were paid in connection with a project financed by an international financial institution such as the World Bank, that institution might bar the firm from working on future projects for a specified period of time. That debarment might lead other international financial institutions to debar the firm.
automatically pursuant to a formal cross-debarment agreement (see e.g. Agreement for Mutual Enforcement of Debarment Decisions, April 9, 2010).

A complete model of the enforcement game will also include victims of misconduct and other private actors whose actions directly affect the impact of public law enforcement. Sometimes victims represent a discrete and easy to identify class of people – think of the victims of Internet scams. Sometimes the victims are more diffuse. For instance, in the case of foreign bribery, potential victims include the government and general population of countries whose officials might be bribed as well as firms who might be placed at a competitive disadvantage to the bribe-paying firm. Victims initially influence the enforcement game by taking precautions, which typically make misconduct more difficult for at least some actors. After misconduct has occurred, victims can influence law enforcement by providing information to enforcement agencies and imposing their own sanctions, whether by legal or extra-legal means. For instance, competitors or shareholders might bring civil actions against firms or individuals who have engaged in bribery, and foreign governments might use evidence of bribery as a basis for escaping their obligations under tainted procurement contracts.

Private actors other than victims can also play a role in the enforcement game. The most obvious examples are whistleblowers, people who provide information about misconduct to enforcement agencies. Private actors who are not victims also sometimes sanction misconduct, such as when unions or NGOs or trading partners organize boycotts of firms that have a reputation for misconduct (Ayres and Braithwaite 1992).

Victims and private actors are often ignored in models of law enforcement. It is common to assume that opportunities to commit crime and the rates at which crimes are reported are
exogenously determined. This methodological shortcut is harmless so long as it is reasonable to assume that victims and other private actors do not behave strategically – that is to say, so long as victims do not adjust their behavior in response to beliefs about the actions of other players. But like many shortcuts, assuming that the behavior of victims is exogenously determined is dangerous because victims often do behave strategically. Beliefs that competitors will comply with prohibitions on foreign bribery might prompt firms to enter markets where they would otherwise feel vulnerable to unfair competition. Lack of confidence in law enforcement might discourage victims and whistleblowers from reporting.

*The role of legal norms*

Legal norms obviously play a significant role in determining the players in the enforcement game and the actions open to them. In the case of enforcement agencies, jurisdictional rules, that is to say, rules that determine which instances of wrongdoing or which actors the agency is allowed to pursue, play a crucial role in the analysis. In the international context, these rules are typically based on principles of either territoriality or nationality (although notable exceptions exist, including in the case of anti-bribery law). As a result, enforcement agencies are usually limited to investigating or prosecuting actors who either are nationals or who engage in misconduct within their territory. And when it comes to imposing sanctions, such as arrest or attachment, jurisdiction is typically limited to assets or individuals located within the territory of the relevant agency.

Naturally, legal norms also determine agencies’ investigative powers and the types of sanctions they can request or impose. Those sanctions include not only direct fines and penalties but also “collateral” sanctions such as being deprived of licenses or barred from bidding on public contracts. Legal norms can also grant agencies more or less discretion. For instance, in
some jurisdictions, the legality principle prevents prosecutors from exercising discretion over which cases to prosecute and what charges to bring. By contrast, in the United States and other jurisdictions, enforcement agencies have broad discretion to engage in plea bargaining or charge bargaining. Similarly, fines and penalties may either be left entirely within the discretion of the court or governed by mandatory rules.

Law also governs the conduct of private actors in the enforcement process. This includes the extent to which firms can conduct private investigations of their employees and threaten to fire them if they fail to cooperate. In the United States, firms have broad latitude to investigate their employees and fire them if they fail to cooperate. In other countries that have not embraced the US concept of employment-at-will it may be more difficult to wield the threat of termination. Meanwhile in China, private individuals retained by foreign firms have been imprisoned for conducting investigations on the grounds that they have asserted powers that belong exclusively to the state. Law affects the conduct of whistleblowers in particularly distinctive ways. The US SEC’s whistleblower program allows people who provide information about violations of the FCPA and other securities laws by publicly traded firms to recover up to 30 per cent of sanctions collected from the firm. The law that creates the rewards program also protects whistleblowers from retaliation.

Resource constraints

The actions open to enforcement agencies, potential wrongdoers, and victims, are determined in part by the resources available to them. On the enforcement side, skilled personnel, office space and information technology, as well as access to social networks and other media, are critical determinants of agencies’ abilities to investigate, monitor, prosecute, sanction and disseminate information. Private actors draw on the same kinds of resources to
train, monitor, investigate and sanction agents who might engage in wrongdoing as well as to avoid being victimized themselves. Some of these resources can be purchased in the marketplace, but access to social networks and know-how often can only be acquired over time and with experience.

**Objectives**

*Objectives of private actors*

A critical step in game theoretic analysis is to specify the players’ objectives, or more precisely, their preferences over possible outcomes of the game. It is conventional to assume that private actors’ preferences are driven by a desire to maximize expected financial returns. The implications for players’ decision-making processes are straightforward. Potential wrongdoers weigh the expected benefits of wrongdoing against the expected costs of sanctions. Potential victims attend to the expected costs of being victimized, the costs of precautions, the costs of reporting, and the expected value of compensatory legal remedies. Meanwhile, for other private actors, the costs of participating in enforcement, including the costs of retaliation, are weighed against benefits such as bounties offered to whistleblowers.

Although the assumption that private actors are motivated primarily by financial incentives is fairly standard in the literature, common sense and an increasingly substantial amount of empirical literature suggest that other factors influence preferences in relation to compliance strategies. Some studies focus on cognitive factors, such as people’s tendencies to deceive themselves about whether their conduct is dishonest and to weigh short-term benefits more heavily than the relatively long-term consequences of being sanctioned. These tendencies vary from person to person. They can be exacerbated by factors such as stress or tiredness and
past misconduct. Other studies focus on situational rather than individual factors, such as competition, cultural or professional identity and the perceived legitimacy of norms (Langevoort, in this volume).

Objectives of public enforcement agencies and their agents

Enforcement agencies also have preferences over enforcement outcomes, including which cases are investigated and prosecuted and what sanctions are imposed. In the foreign bribery context, there are important questions about whether U.S. enforcement agencies should give priority to prosecution of foreign as opposed to domestic firms, and whether they should focus on cases that involve corruption in countries with relatively weak anti-corruption institutions. There is also controversy over whether fines, penalties, damages and forfeitures collected in foreign bribery cases should remain with the U.S. Treasury or be remitted to the governments who employed the corrupt officials.

What should we presume about the preferences of enforcement agencies? First, like wrongdoers, some enforcement agencies care about their finances. Virtually every agency is subject to resource constraints and so, all other things being equal, some agencies will prefer to achieve any given outcome at the lowest possible cost. This assumption is not universally valid though. Agencies that seek to maximize their power and influence might wish to maximize the size of their budget. Perhaps more plausibly, agencies might also care about the financial benefits that flow from their actions. For instance, US enforcement agencies arguably have an interest in enforcement strategies that yield large fines and penalties for the US Treasury because total recoveries are an easily communicable way of demonstrating effectiveness to Congressional overseers (Lemos and Minzner 2014).
At the same time, it is reasonable to presume that factors beyond financial returns play a role in shaping the preferences of public enforcement agencies. For starters, we should acknowledge that in well-functioning enforcement agencies most individual agents are likely to care primarily about achieving the conventional objectives of law enforcement, namely retribution, prevention (which includes both deterrence and incapacitation) or compensation. This still leaves considerable room for divergent preferences. Consider enforcement of the FCPA. If retribution is the objective, then at any given point in time the agency will assess outcomes by looking at whether sanctions for previous misconduct vary in accordance with defendants’ culpability, however conceived. By contrast, if prevention is the objective, the focus will be on how potential wrongdoers will behave in the future. Finally, if compensation is the objective, the focus will be on the welfare of victims (Davis 2015).

An agency’s preferences over enforcement outcomes might also be influenced by its views on whether it ought primarily to serve the interests of nationals or foreigners. Again, consider enforcement of the FCPA by US agencies. At one extreme, self-interested agencies will judge enforcement outcomes according to whether they respond to the concerns of US nationals. This typically will mean focusing on the interests of U.S. nationals who are stakeholders – shareholders, creditors, employees, suppliers and customers etc. – in firms that are economically disadvantaged by foreign bribery. (Those interests can be served by a variety of enforcement strategies, including, targeting foreign rather than domestic firms, targeting domestic firms in order to give them a credible reason to ‘just say no to bribery’, or targeting any firm whose actions embarrass the United States in the eyes of allies.) At the other extreme, altruistic agencies will be concerned mainly about the people represented by the officials who have been bribed, especially if no other anti-corruption institutions are capable of protecting them (Davis
Alternatively, an agency might take an intermediate ‘cosmopolitan’ approach and give equal weight to the interests of US nationals and foreigners. The legislative history of the FCPA includes statements consistent with all of these viewpoints (Davis 2012).

Combining three distinct conceptions of the general objectives of law for enforcement and three conceptions of the objectives of FCPA enforcement yields at least nine distinct types of preferences: self-interested retribution...altruistic compensation, etc. In practice, of course, an agency may give weight to several motivations or objectives and pursue them simultaneously. This increases the number of possible types of preferences to include combinations such as ‘self-interested retribution and prevention, with greater weight given to retribution’.

Another complication in analyzing enforcement objectives is that individual agents within an agency might have different objectives from those endorsed by the leaders of the agency. For instance, the preferences of individual U.S. prosecutors in FCPA cases might run towards easy high-profile cases (Lemos and Minzner 2014). Easy cases allow individual prosecutors either to earn more wins with the same amount of effort or to expend less effort. High-profile cases help individuals’ careers. Winning a high-profile case may be a good way for a prosecutor to earn a promotion. It may also be a calling card for an attorney who wants to leave government and go into private practice (although there is always the risk that prospective clients will take aggressive prosecution as a signal of implacable hostility to their interests). In the U.S. it is common for successful prosecutors to leave the government and obtain jobs with prominent law firms where they earn, literally, millions of dollars.

A final complication is that the objectives of both enforcement agencies and individual agents (especially political appointees) might be shaped by the whims of individual political
leaders to whom they report or, in the cases of democratically accountable actors, the vagaries of public opinion (Gordon and Huber 2009). There is no reason to expect objectives shaped by such forces to be either well-defined or stable over time. For instance, agencies subject to political influence might pursue different objectives depending on the political clout of the prospective defendants.

**Timing of the enforcement game**

*The single-stage game*

An enforcement strategy is an algorithm that specifies all the actions to be taken by an enforcement agency whenever it has an opportunity to act, over the course of the entire game. Those actions include establishing the range of possible sanctions, monitoring, investigating, and imposing sanctions on specific actors. An enforcement strategy can include specifications that certain actions should only be taken if the game to date has been played in a particular way (e.g., impose higher sanctions if but only if the defendant has failed to cooperate in the investigation). Similarly, a compliance strategy specifies actions to be taken when private actors have opportunities to engage in prevention, monitoring, investigation and reporting. As in other games, the strategies in the enforcement game can include both pure strategies and mixed strategies. A pure strategy identifies with certainty the action to be taken whenever an agent has the opportunity to act. By contrast, a mixed strategy identifies the probability with which each member of a set of actions should be taken (e.g. self-report fifty per cent of the time when competitors are being investigated).

When are enforcement and compliance decisions made? Ever since Becker’s (1968) pioneering contribution, and despite forceful objections from Tsebelis (1989, 1990, 1995), most
economic analyses of law enforcement have assumed, often implicitly, that law enforcement is a two-stage game in which enforcement agencies move first and potential wrongdoers move second (see generally Garoupa 1997, Polinsky and Shavell 2007). In the case of economic crime, law enforcement appears to involve a different – and somewhat more complicated – sequence of moves:

1. Enforcement agencies decide on a schedule of sanctions setting out at least the range of possible sanctions.
2. Organizations and potential victims decide what preventive measures to adopt.
3. Potential wrongdoers decide whether to engage in misconduct.
4. Wrongdoers and other private actors and enforcement agencies decide how to allocate their resources to collecting data on past misconduct through monitoring and investigation.
5. Wrongdoers and other private actors decide whether to report misconduct.
6. Enforcement agencies decide what sanctions to impose.

This sequence of moves differs from the sequence assumed in conventional models in one key respect: wrongdoers decide whether to engage in misconduct before enforcement agencies settle on their enforcement strategy. In other words, wrongdoers move first and enforcement agencies move second. Following Graetz et al (1986), compliance with tax law is often modeled in this way. Otherwise, few economic analyses of law enforcement, with the notable exception of Leshem and Tabbach (2012), have deviated from the conventional assumption that enforcement agencies are first movers (see also Spengler 2014 and Tsebelis 1989, 1990, 1995).
The conventional model presumes that successful law enforcement requires detecting wrongdoers in the act, as in the case where a police officer catches someone in the act of breaking into a car (see e.g. Di Tella and Schargrodsky 2004). In this scenario, the key enforcement decision is to ensure that agents are in the right place at the right time. Unless the wrongful act takes a long time to complete, the enforcement agency’s decision must be made before, or perhaps at roughly the same time as, wrongdoers choose their targets. By contrast, the model outlined above presumes that agencies initiate investigations and prosecutions after misconduct has occurred. This kind of reactive enforcement may or may not be common in cases of street crime – the situation is changing with the increased prevalence of video surveillance – but it is certainly common in cases of corporate misconduct, which often is not detected until well after the wrongful acts have been completed.

The law clearly permits reactive enforcement. For example, in the United States, federal criminal law generally allows a defendant to be prosecuted so long as they have been indicted within five years after the commission of an offense (28 U.S.C. § 2462). And this five year limitation period can be extended by agreement or in cases in which the government requires evidence from a foreign country (18 U.S. Code § 3292). These lengthy limitation periods provide ample time for enforcement strategy to change after a wrongdoer has engaged in misconduct, including as a result of changes in the availability of resources. Moreover, the combination of short budget cycles and broad prosecutorial discretion make it implausible for U.S. enforcement agencies to commit themselves to any particular enforcement policy until the expiry of the applicable limitation period. FCPA enforcement is a case in point. The US ramped up enforcement beginning sometime around 2006, but the cases resolved in 2007 generally involved misconduct that began at least five years earlier.
The fact that compliance actions typically are chosen before rather than after enforcement strategies are determined has several important implications. First, compliance decisions are made in the face of uncertainty about what sanctions will be imposed. In other words, firms may face enforcement outcomes that are neither completely certain nor completely improbable. Moreover, the uncertainty will involve not just risk but also ambiguity. This means that agents may not be able to calculate the probabilities of outcomes with much confidence. Why the uncertainty? Prohibitions on retroactive lawmaking generally ensure that the range of potential sanctions can be determined by looking to the laws in force at any given time, but no comparable legal mechanisms bind enforcement agencies to specific enforcement strategies. Firms and individuals are forced to make predictions about whether their misconduct will be investigated or sanctioned by extrapolating from past enforcement actions and by interpreting speeches, hiring patterns etc. to draw inferences about the preferences of enforcement agencies in future periods. Predictions based on these kinds of extrapolations are unlikely to be able to rule out many possibilities (which implies risk) and those predictions are also very likely to be wrong (which implies ambiguity).

The fact that enforcement decisions are made after compliance decisions also has implications for enforcement agencies’ ability to achieve deterrence. If enforcement takes place only after misconduct has occurred and involves no implicit commitment to make similar enforcement decisions in subsequent cases, then, virtually by definition, enforcement ought to have no deterrent effect. Potential wrongdoers might be deterred because they believe that the agency will enforce because it seeks to achieve objectives such as retribution or compensation or incapacitation, but the deterrent effects will be quite different from those suggested by conventional models (Leshem and Tabbach 2012). Alternatively, potential wrongdoers might be
deterred if this sort of enforcement game is played repeatedly; they might believe that the agency will engage in enforcement after-the-fact in order to build or maintain a reputation that will deter in future periods.

A third implication of presuming that enforcement decisions follow misconduct is that enforcement decisions can be conditioned on information that becomes available after the misconduct has occurred (Graetz et al 1986, Leshem and Tabbach 2012), including information about the prevalence of misconduct, social harm or enforcement costs. For instance, instead of selecting firms at random to be investigated for foreign bribery, an agency might focus on firms that local press accounts have connected to documented instances of public sector corruption, especially when there are allegations that the corrupt acts have caused considerable harm to the public, involve multiple firms in an industry, or will be the subject of a local investigation. Allocating investigative resources on the basis of this kind of information is efficient because it allows resources to be concentrated on cases where the likelihood of detecting harmful wrongdoing is relatively high. This information also makes it possible for an agency to focus on cases in which the costs of any resulting enforcement actions are likely to be spread across several firms in an industry and shared with other enforcement agencies. From a firm’s perspective the probability of being sanctioned for foreign bribery is significantly higher if it faces agencies that can draw on these kinds of information rather than agencies that pre-commit to random allocations of investigative resources.

The fact that enforcement agencies can condition their decisions on information about misconduct is related to the idea that players will act in the face of uncertainty. In order to calculate the probability of being sanctioned a firm will have to take into account not just its own decisions about compliance but also the compliance decisions of other firms in its industry, as
well as the interactions among multiple enforcement agencies’ decisions. It is quite possible that there will be multiple combinations of strategies those other players could reasonably pursue, in other words, the enforcement game might have multiple equilibria. In these circumstances, each player in the game will act in the face of uncertainty – so-called strategic uncertainty – about the consequences of its actions.

**Multi-stage enforcement processes**

The process of deciding what sanction to impose can be modeled as a single stage of the enforcement game, but in fact it involves several distinct functional stages: monitoring, investigation, prosecution, adjudication, and sanctioning. These functions are frequently performed by different organizations working in sequence. Take the case of money laundering. Financial Intelligence Units monitor suspicious transactions. The police and agencies such as the U.S. Federal Bureau of Investigation investigate more credible allegations of wrongdoing. Attorneys-general conduct prosecutions that lead to adjudication by courts or administrative agencies. Finally, sanctions are administered by still other agencies such as, in the US federal system, the Marshals Service (which executes forfeitures) and the Bureau of Prisons. Ideally, information generated at each stage in the process serves as an input in later stages of the process.

To further complicate matters, in some legal systems it is possible to bypass certain stages in the enforcement process. For instance, if a wrongdoer self-reports it is often possible to skip the monitoring and investigation stages. In the US, FCPA cases largely avoid adjudication. In recent years virtually all FCPA cases aimed at organizational defendants have been resolved through pre-trial agreements between prosecutors and the target firms with very little oversight from the courts.
Coordination

Another way to increase the realism of the enforcement game is to allow for the possibility of coordination, among enforcement agencies or other actors. Coordination in this context can be defined as *working together to achieve a common goal* (Davis, Jorge and Machado 2015b). Working together involves sharing resources and information. Indicia of coordination are: acknowledgement of common goals; sharing of information required to pursue the common goals; provision of information about the effects of actions (feedback); adjustment of actions or objectives in response to feedback; and adoption of rules or processes for assigning activities among various actors. These in activities in turn, generally require *coordination mechanisms*. Those include organizations or social networks that establish channels for information flows and opportunities for face-to-face interaction, as well as protocols for making decisions or formulating rules. These organizations, networks or protocols can be established through hierarchical commands or adopted by explicit or implicit agreements, all of which may or may not be legally binding (Davis, Jorge and Machado 2015b).

There are several prominent examples of coordination mechanisms among enforcement agencies. The more established mechanisms include: prohibitions on double jeopardy and jurisdictional rules, both of which serve to limit overlaps in jurisdiction; formal agreements such as Mutual Legal Assistance Treaties and memoranda of understanding among securities regulators; intergovernmental organizations such as the Financial Action Task Force or the OECD Working Group on Bribery in International Business Transactions; and a myriad of informal social networks. Enforcement agencies also create ad hoc coordination mechanisms to pursue specific cases, such as the arrangements between U.S. German agencies that led to the Siemens settlement or, in domestic contexts, interagency task forces. Among private actors,
potential coordination mechanisms include: general purpose trade associations; specialized associations such as the Wolfsberg Group (an association of global banks concerned with anti-money laundering and related issues); and various forms of cartels, contracts or joint ventures. Few mechanisms exist, however, to coordinate the actions of private plaintiffs and public enforcement agencies.

For the purposes of game theoretic analysis, when coordination is possible the extent of coordination should, ideally, be modeled as a choice – agencies might choose whether to conclude and abide by MOUs or firms might choose whether to join trade associations or cartels. The extent to which actors choose to coordinate will determine the extent to which it is appropriate to treat groups of individuals or organizations – whether or not they are formally constituted as organizations – as distinct players in subsequent stages of the game. Naturally, accounting for the possibility that actors will choose varying levels of coordination will make the analysis of a multi-jurisdictional enforcement game much less tractable.

Repeated play

An even more realistic specification of the enforcement game would allow for repeat play. In repeated games different actions can be adopted in different rounds. This allows for the possibility of using rewards and punishment to induce other players to pursue strategies that would be unattractive if the game was played only once. For example, an enforcement agency in Country A might target firms from Country B in an effort to encourage the enforcement agency in Country B to step up enforcement. There is some evidence that this kind of inducement can be effective. Kaczmarek and Newman (2011) found that countries whose firms were prosecuted for violations of the FCPA were twenty times more likely to enforce their own laws against foreign bribery. Similarly, an enforcement agency might abide by a publicly announced but legally
unenforceable strategy of granting leniency to firms that self-report, even though it might be tempted to throw the book at them after hearing about their crimes, in order to reap the reward of receiving self-reports in future periods.

Repeated games also allow players in the enforcement game to learn, both about other players and the environment (see e.g. Sah 1991, Pogarsky et al 2004, Friehe 2008). For instance, a firm that makes a low investment in compliance in early rounds of the game might learn how prosecutors respond and adjust its levels of compliance effort accordingly in later rounds. Enforcement agencies can learn too. For example, investigators in a particular agency may become more adept at investigating complex economic crimes through learning-by-doing (Davis 2010). Under these conditions it might be rational for anti-corruption agencies in developed countries to limit extraterritorial enforcement in early rounds of the enforcement game in order to allow agencies in less developed countries to acquire experience.

**Possible outcomes**

In simple models of law enforcement a single enforcement agency chooses its enforcement strategy in advance of any misconduct, in a one-shot game, with the aim of deterring a single representative wrongdoer. Higher penalties and/or probabilities of detection induce greater compliance, or at least greater investments in compliance. The agency’s optimal strategy involves setting the expected penalty facing wrongdoers at a level that equals or – in the case of acts whose harms are unquestionably greater than their benefits – exceeds, the social harm. This typically implies setting fines at the highest level feasible, supplementing those fines with more costly sanctions as necessary, and then choosing a level of enforcement effort that does not entail unduly high enforcement costs. In the standard model, the optimal enforcement
and compliance strategies generally remain constant over time so long as no exogenous shocks alter fundamental parameters of the game (see generally, Polinsky and Shavell 2007).

These results do not necessarily hold when we complicate the basic model. This is not the place to analyze all of the possible equilibria of dynamic multijurisdictional enforcement games. A few possibilities are worth highlighting though because they diverge from the predictions of the standard model and are likely to arise when there are multiple wrongdoers or enforcement agencies, or when enforcement strategies are chosen before compliance strategies, or when the enforcement game is played repeatedly.

Collective action problems among wrongdoers

We begin with a complication that is now reasonably well-understood. Economic crime is often a collective activity. This is certainly the case for foreign bribery. At the very least it involves the actions of a bribepayer and a bribe recipient. Those actors may be individuals. But at least one of them, the recipient of the bribe, invariably represents an organization, and typically the bribepayer is acting on behalf of an organization as well. This means that many other individuals within the respective organizations are implicated in failing to prevent the misconduct and neglecting to detect or report it after the fact.

Enforcement strategies can be crafted to create collective action problems among wrongdoers, that is to say, to induce them to pursue strategies that represent sub-optimal ways of pursuing the common objective of committing crime. The classic example is the enforcement strategy behind the famous prisoners’ dilemma, namely, imposing lower sanctions on wrongdoers who confess to a crime relatively early on. Selective grants of leniency can be used to induce leaders of firms to invest in monitoring that increases the risk of detecting wrongdoing.
or to self-report wrongdoing on the part of their employees or trading partners (see e.g. Arlen and Kraakman 1997, Basu 2011). As a result, the optimal enforcement strategy may involve penalties that are well below maximal levels. These strategies generally work on the assumption that there is no honor among thieves. If potential wrongdoers’ preferences include a disposition to be loyal to their peers then the prospect of leniency may not induce them to defect.

Collective action problems among agencies

Collective action problems can also arise among enforcement agencies, offsetting the potential benefits of redundancy among agencies (Ting 2003). When these problems arise the optimal enforcement strategy for any individual agency may involve either over-enforcement or under-enforcement relative to situations in which either there is a single agency or a group of agencies are able to coordinate in pursuit of a common objective (Davis 2010).

In the case of over-enforcement, agencies’ combined strategies result in more investigations or prosecutions, or greater sanctions, than are required to achieve the common objective, perhaps because agencies free-ride on one another’s efforts. If the objective is retribution, over-enforcement might entail sanctions that are disproportionately large in relation to the defendant’s culpability. Alternatively, regardless of the outcome, subjecting a defendant to the burden of being investigated or prosecuted multiple times might itself be viewed as a disproportionate sanction. Similarly, if the objective is deterrence, the concern is that multiplicity of proceedings will result in over-deterrence. One particularly troubling scenario occurs when a prosecution is based on information about wrongdoing that a firm has self-reported to an enforcement agency in another jurisdiction in return for a promise of leniency. This prospect undermines firms’ incentives to self-report.
Under-enforcement, naturally, involves the opposite of over-enforcement. It can occur if agencies limit their enforcement, to the point where enforcement is sub-optimal from a collective perspective. The most plausible concern is that agencies will refrain from enforcement in the hopes of free-riding on the actions of other agencies (see, for example, Ting 2003).

**Partial enforcement and displacement**

Sometimes an enforcement agency will choose a strategy that involves partial enforcement, meaning one that allows certain kinds of misconduct to go unpunished even though the benefits of targeting that misconduct for enforcement would exceed the costs. The most obvious explanation for partial enforcement is the presence of legal limits on the agency’s jurisdiction. International law generally frowns on efforts to sanction actors with no connection whatsoever to the country of the agency imposing the sanctions. Agencies may also choose partial enforcement for more practical reasons. For instance, a self-interested enforcement agency in Country A that is subject to even modest resource constraints may focus its efforts on bribery that places its firms at a competitive disadvantage and ignore bribes paid in markets where it has no economic interests. This strategy will be particularly effective if other enforcement agencies have difficulty detecting the misconduct tolerated by A’s enforcement agency (cf. Stephan 2012, 66-67).

Compliance strategies will tend to reflect the limits of agencies’ enforcement strategies. For example, suppose it becomes known that an anti-corruption agency will refuse to sanction actors based overseas. Higher levels of enforcement effort will simply induce greater levels of bribery by actors located in foreign jurisdictions, assuming the foreign agencies’ enforcement strategies remain constant (Davis 2002). This is an example of the widely-discussed phenomenon of crime displacement (see generally Johnson et al 2014, Broude and Teichman...
The magnitude of displacement will depend in part on the extent to which actors are mobile, meaning that they can move from one jurisdiction to another or commit crimes while remaining beyond the reach of enforcement agencies of interested jurisdictions.

*Non-stationary equilibria*

When an enforcement game is played repeatedly, equilibrium enforcement and compliance strategies may not entail identical behavior in each round of the game, even if there are no exogenous shocks that alter the basic parameters of the game. To begin with, the equilibrium might include mixed strategies. For example, it might make sense for an agency to randomly select crimes for investigation rather than consistently targeting the most socially harmful behavior. The intuition here is that a consistent pure strategy would allow a category of firms to evade prosecution consistently. Second, an agent’s optimal strategy might require that play in earlier rounds triggers reward or punishments in a subsequent round. For instance, US FCPA enforcement strategy might entail reducing future enforcement in order to reward enforcement agencies in other countries for stepping up their level of enforcement in the past. It is also plausible that the parameters of the game will change over time as a result of endogenous factors. For instance, US enforcement agencies might find it either more or less appealing to sanction firms that pay bribes in poor countries as local enforcement agencies in those countries learn from experience (depending on whether local enforcement serves as a complement or a substitute for US actions).

*Uncorrelated enforcement and compliance strategies*

In conventional models of law enforcement, current levels of enforcement are presumed to have a direct effect on current compliance decisions. This is not necessarily the case in a world in which enforcement agencies are second movers. In this kind of world, the ultimate
consequences of compliance decisions made in the current period will be determined by the enforcement strategies that agencies pursue in future periods. The challenge for potential wrongdoers is to anticipate those strategies. However, if enforcement strategies are prone to change over time then strategies being pursued in the current period will not necessarily provide insight into the ones that will be pursued in future periods. The recent history of FCPA enforcement demonstrates that an agency that is currently imposing light penalties and exerting little effort might dramatically increase both sanctions and effort in future periods. Similarly, high levels of penalties and enforcement effort in current periods may say little about future enforcement strategies. For all these reasons, current enforcement strategies may play only a limited role in potential wrongdoers’ assessments of the consequences of their current compliance decisions. This in turn means that the compliance decisions of actors who are motivated primarily by fear of legal penalties will not necessarily be influenced directly by current enforcement practices.

**The empirical challenge**

So far we have discussed how one might in theory go about describing the structure and predicting the play of a multijurisdictional enforcement game. In practice, it can be extremely challenging to observe and document either the structure of such a game or how it has been played.

As far as the structure of the game is concerned, it is generally straightforward to identify the players because formal legal norms normally identify the relevant enforcement agencies and define the class of potential wrongdoers. With this information in hand it is not likely to be
difficult to identify potential victims or whistleblowers. However, the sheer number of players can make it difficult to manage the resulting data.

It is not quite so straightforward to determine the strategies open to the various players. To some extent these are defined by legal norms, as in the cases in which a statute defines the sanctions an enforcement agency can impose. In other cases, however, the set of feasible actions will depend on actors’ resources and expertise. Both these parameters can be difficult to measure and are subject to change over time.

An even greater challenge is to ascertain the preferences of all these actors. Even if we make the simplifying assumption that private actors are motivated primarily by financial considerations, we still have to specify the preferences of actors on the enforcement side. Enforcement agencies generally make only vague statements about their organizational objectives that are open to multiple interpretations. For example, the US Department of Justice has embraced the following strategic goals (among others):

Objective 2.2: Prevent and intervene in crimes against vulnerable populations and uphold the rights of, and improve services to, America’s crime victims.

Objective 2.3: Disrupt and dismantle major drug trafficking organizations to combat the threat, trafficking, and use of illegal drugs and the diversion of licit drugs.

Objective 2.4: Investigate and prosecute corruption, economic crimes, and transnational organized crime

Objective 2.6: Protect the federal fisc and defend the interests of the United States (United States Department of Justice 2014, 10)
Collecting data about the structure of an enforcement game becomes even more complicated when there is doubt about the appropriate units of analysis. For instance, on the enforcement side the default approach is to treat the enforcement agency as the appropriate unit of analysis. But if enforcement agencies regularly coordinate their actions then it may be preferable to treat the group of agencies as a single actor. For instance, in the FCPA context, the DOJ and the SEC have issued a joint statement on enforcement policy (Criminal Division of the U.S. Department of Justice and Enforcement Division of the U.S. Securities and Exchange Commission 2012), which suggests that they coordinate their actions enough to be referred to jointly as ‘US enforcement agencies’. The same may be true of the major multilateral development banks to the extent their debarment actions are coordinated by their cross-debarment agreement (Agreement for Mutual Enforcement of Debarment Decisions, 2010). Unfortunately, less formal coordination mechanisms such as social networks may be much more difficult to observe. It can also be difficult to determine whether individuals within an organization are aligned with stated organizational preferences. If they are not, then the individuals may be the appropriate unit of analysis.

The best response to the challenge of determining the structure of a complex multijurisdictional enforcement game almost certainly includes significant amounts of qualitative research, i.e. in-depth interviews and ethnography. Given the number of agencies and individuals involved in multijurisdictional enforcement this can be a daunting task (see e.g. Davis, Jorge and Machado 2015b).

Collecting data on how enforcement games have been or are being played can also be challenging. In the typical situation, only the first and last steps of the game, namely, announcement of the range of sanctions and imposition of sanctions, are readily observable. Both
firms and enforcement agencies tend to provide less than full information about other aspects of their behavior. As a result, prevention, wrongdoing, monitoring, investigation, and self-reporting generally cannot be observed with confidence. It is also difficult to observe consequences associated with various outcomes. For instance, the extent to which the US has an economic interest in the welfare of multinational firms is not always clear, and so it may be difficult to determine whether sanctioning any given firm is consistent with self-interested objectives. For all these reasons it can be very difficult to determine what compliance and enforcement strategies have been adopted at any given time.

It is particularly difficult to use observable data from cases in which sanctions have been imposed to determine whether agencies are pursuing deterrence-oriented strategies. This is most obvious when the optimal deterrent strategy involves inconsistent behavior. The extreme case is when the agency wants to maintain or develop a reputation for pursuing an unpredictable enforcement strategy. Even if deterrence demands an enforcement strategy that is consistent over time, it is likely to include the practice of imposing higher sanctions for misconduct perceived to have a lower probability of detection. External observers will typically find it difficult to observe either the actual or perceived probability of detection. Recall that the probability of detection generally should not be regarded as an exogenous factor because enforcement agencies can decide which cases to investigate and prosecute after misconduct takes place.

These obstacles have not kept scholars from trying to study the relationship between enforcement and compliance. Karpoff et al (2015) make an ambitious effort to determine whether recent efforts to enforce the FCPA are sufficient to deter firms from committing foreign bribery (see also Hines 1995 and Cuervo-Cazurra 2008). They conclude that sanctions are too low based on estimates of the probability that a publicly traded bribe-paying firm will face
bribery charges (6.4%), the average value of a contract procured through bribery (2.64% of market capitalization), and the average cost of fines, investigation costs and reputational losses associated with being prosecuted for foreign bribery (5.1% of market capitalization). These estimates are, however, rather crude. For instance, the estimate of the value of contracts procured through bribery seems likely to be biased upwards because it is based on changes in firm value that occurred when contracts were publicly announced. Firms probably only choose to make announcements of this kind for relatively large contracts.

A more fundamental concern is that Karpoff et al estimate the probability that a bribe-paying firm will be sanctioned by using a statistical model to identify the characteristics of firms caught paying bribes. They then, effectively, assume that the firms caught were randomly selected from all the firms in the population with similar observable characteristics. They calculate the probability of detection by examining the entire population of firms to determine what proportion of firms that have the characteristics of bribepayers were actually caught. There are two main difficulties with this approach. First, the assumption that firms that resemble those caught paying bribes also paid bribes may not be valid. What if enforcement agencies decide which firms to investigate and prosecute only after misconduct has taken place and then select firms based on information that is not observable to the researchers? Second, the implicit assumption that past rates of detection reflect future probabilities of detection is suspect because there is no guarantee that enforcement strategies will be consistent over time.

To put this in more concrete terms, suppose that over a three year period, out of 1000 firms, 5 are sanctioned for paying bribes, and all 5 are large multinationals operating in the oil and gas sector. Suppose that another 95 large multinational oil and gas firms were not sanctioned. Is it reasonable for a researcher to infer that all or virtually all large multinational oil
and gas firms paid bribes? And even if that is true, can we infer that the probability of detection at all relevant points in time is $5/100 = 5\%$? The answers to these questions are no and no. First, the enforcement agency may have received information unobservable to the researcher that allowed them to target the only 5 oil and gas firms that paid bribes, implying that the probability of detection, at least for oil and gas firms, was 100%. Imagine, for instance, that the agencies based their decisions about who to investigate on complaints from victims (including competitors). Second, the enforcement agency might have decided to focus its efforts in a single sector to take advantage of economies of scale in enforcement. This means that we cannot use the data on enforcement outcomes to draw any inferences whatsoever about whether firms outside the oil and gas sector paid bribes.

For similar reasons, even if the probability of detection was 5\% during the three year period, there is no reason to believe that figure reflects the probability of detection in future periods. There are many reasons why the enforcement strategy might shift in future periods: complaints from victims might cause the agency to identify foreign bribery in other sectors as sources of concern; it may target another randomly selected sector for enforcement in order to avoid predictability; or, local enforcement agencies may become more effective in sanctioning public officials for corruption in the oil and gas sector, thereby reducing the value of prosecuting firms for foreign bribery.

Despite these challenges it is valid to draw certain types of inferences about enforcement strategies from observable outcomes. Several studies examine how FCPA sanctions vary across firms. The results suggests that firms incorporated outside the US pay higher penalties than firms incorporated inside the US in cases with similar observable characteristics (Garrett 2011; Choi and Davis 2014). Sanctions were also higher when the home country of the firm was wealthier,
had strong institutions or a regulator with whom US agencies have a cooperative relationship (McLean 2012; Choi and Davis 2014). Meanwhile, analyses of how sanctions vary depending on the countries implicated in the misconduct, i.e. the countries in which bribes are paid, suggest that sanctions are higher when bribes are paid in relatively corrupt countries (Choi and Davis 2014). If we assume that agencies are motivated by retribution, which arguably implies that sanctions should be based primarily on publicly available information, then these variations shed light on the extent to which US enforcement agencies are influenced by self-interest as opposed to cosmopolitanism or altruism.

Normative challenges

Suppose we overcome the empirical challenges described in the previous section and are able to map the structure of particular enforcement game, identify the enforcement and compliance strategies adopted over a particular timeframe, and describe the outcomes. At that point it would be useful to be able to evaluate the outcomes with a view to possible changes in strategy. For instance, in the area of foreign corrupt practices, it would be useful to answer questions such as: Are penalties being imposed on firms and individuals in proportion to their culpability? Does the current approach to regulation of foreign corrupt practices cause firms to make excessive investments in compliance? Or, does it reflect a waste of resources on the part of US law enforcement agencies? Are the benefits of enforcement actions, in terms of either deterrence or financial recoveries, distributed equitably across affected countries?

The answers to these kinds of questions depend on the answers to basic normative questions about the objectives of law enforcement. As we have already seen, there are several potentially conflicting points of view on these issues. The ways in which an analyst evaluates the
outcomes of an enforcement game will depend on whether or to what extent he or she believes that law enforcement should aim at retribution, prevention or compensation, and where they fall on the self-interest-altruism continuum.

To further complicate matters, evaluation of an enforcement regime might involve procedural criteria such as transparency and accountability, as well as the substantive criteria listed above. Evaluations based on these kinds of procedural criteria might conflict with those based on some of the other criteria we have mentioned. For instance, a highly transparent enforcement strategy might score low marks in terms of deterrence because it provides too much information to wrongdoers – it is not necessarily a good idea to tell the mice where the traps have been set. Similarly, an enforcement strategy that relies heavily on extraterritorial enforcement might be highly effective in terms of substantive outcomes, but deeply problematic in terms of accountability because the relevant enforcement agencies are not accountable to the people they purport to be protecting (Davis 2010).

In a multijurisdictional setting, multiple answers to questions about the applicable evaluative criteria are not only possible, but probable. The mere fact that people have organized themselves into distinct political units and have different ways of life makes it quite plausible that they will arrive at different conclusions about how to evaluate law enforcement systems and their operations. As a result, issues such as whether a particular enforcement system is or is not effective, or whether reforms are warranted, may be hotly contested. And the differences of opinion seem likely to track jurisdictional boundaries.
Conclusion

Efforts to analyze multijurisdictional dynamic law enforcement games face major challenges, some theoretical, some empirical, others normative. The theoretical challenge is to develop models that capture more of the complexity of the real world of law enforcement. But no single model can capture all the relevant complications. Therefore, in addition to developing more complicated models, it might be helpful to develop simple models that focus on complications that so far have been neglected in the literature. The empirical challenge will be to determine which models provide the most useful insights in any given context. Overcoming these theoretical and empirical challenges will require significant effort. But even if those efforts are successful it may be difficult to achieve consensus around the appropriate criteria for evaluating enforcement games. As a result, uncontested conclusions about critical aspects of modern law enforcement may remain elusive.

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