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Lessons from LIBOR for Detection and Deterrence of Cartel Wrongdoing

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I. INTRODUCTION

In late June 2012, Barclays entered a $453 million settlement with U.K. and U.S. regulators due to its manipulation of the London Interbank Offered Rate (Libor) between 2005 and 2009.[3] The Department of Justice (DOJ) Antitrust Division was among the antitrust authorities and regulatory agencies from around the world that investigated Barclays.

We hesitate to draw overly broad conclusions until more facts come out in the public domain. What we note at this time, based on public information, is that the Libor conspiracy and manipulation seems not to be the work of a rogue trader. Participation in a price fixing conduct, by its very nature, requires the involvement of more than one firm. In this case, the conspiracy seems to have been organized across firms and required the active knowledge of a number of individuals at relatively high levels of seniority among certain Libor setting banks. Such collusion across firms is at the core of illegal antitrust behavior. The Supreme Court has deemed combating the pernicious effects of cartels so central to antitrust's mission that it has stated that cartels are "the supreme evil of antitrust."[4]

The involvement of more than one bank in such a cartel is a significant corporate governance failure due to the coordination that such a cartel would have required among the various cartel members. It is perhaps even more surprising that the Libor cartel seems to have occurred in such a highly regulated industry after a wave of corporate governance reforms post-Enron and a push for greater internal compliance in the early 2000s. Yet, the very nature of the manipulation, in hindsight, seems rather obvious. The rate did not move for over a year until the day before the financial crisis of 2009 hit.[5] Also, quotes by the member banks that were submitted under seal moved simultaneously to the same number from one day to the next during that time

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[3] Press Release, U.S. Dep't of Justice, Barclays Bank PLC Admits Misconduct Related to Submissions for the London Interbank Offered Rate and the Euro Interbank Offered Rate and Agrees to Pay $160 Million Penalty (Jun. 27, 2012), http://www.justice.gov/opa/pr/2012/June/12-crm-815.html.

[4] *Verizon Commc'n Inc. v. Law Offices of Curtis V. Trinko*, 540 U.S. 398, 408 (2004).

[5] Rosa M. Abrantes-Metz et al., *Libor Manipulation?*, 36 J. BANKING & FIN. 136, 144 (2012). The authors mark the beginning of the financial crisis with three related announcements on August 9, 2007, concerning: "(a) a coordinated intervention by the European Central Bank, the Federal Reserve Bank, and the Bank of Japan; (b) AIG's warning that defaults were spreading beyond the subprime sector; and (c) BNP Paribas' suspension of three mortgage-backed funds." *Id.* at 140.

period.[6] Had any member bank that sets Libor or any antitrust authority undertaken an econometric screen, they likely would have detected these anomalies, undertaken a more in-depth investigation, and discovered the wrongdoing.

This essay explores the use of econometric screens, either by enforcement authorities or firms themselves, as a tool to both improve detection of potential price fixing cartel behavior and police illegal firm behavior.

II. THE USE OF ECONOMETRIC SCREENS

The art of flagging unlawful behavior through economic and statistical analyses is commonly known as screening. A screen is a statistical test based on an econometric model and a theory of the alleged illegal behavior, designed to identify whether manipulation, collusion, fraud, or any other type of cheating may exist in a particular market, who may be involved, and how long it may have lasted.[7] "Screens use commonly available data such as prices . . . market shares, bids, transaction quotes, spreads, volumes, and other data to identify patterns that are anomalous or highly improbable."[8]

As established through the identification of the alleged Libor conspiracy and manipulation, and other previous successes, screens can be very powerful tools when properly developed and implemented; however, they do require expertise. There are two golden rules of screens: (i) one size does not fit all; and (ii) if you put garbage in, you get garbage out.[9] Without expertise in developing a screen, the attempt at screening will likely fail. Such failure should not be attributed to the screening methodology itself generally, but to the errors in development and application in a particular case.[10]

In general, we can point to six requirements to appropriately develop and implement an effective antitrust screen for collusive behavior: (i) an understanding of the market at hand, including its key drivers, the nature of competition, and the potential incentives to cheat—both internally and externally—for the firm; (ii) a theory on the nature of the cheating; (iii) a theory on how such cheating will affect market outcomes; (iv) the design of a statistic capable of capturing the key factors of the theory of collusion, fraud, or the relevant type of cheating; (v) empirical or theoretical support for the screen; and (vi) the identification of an appropriate non-tainted benchmark against which the evidence of collusion or relevant cheating can be compared.[11]

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[6] *Id.* at 144.

[7] *See generally* Rosa M. Abrantes-Metz, *Design and Implementation of Screens and Their Use by Defendants*, CPI ANTITRUST CHRON. (Sept. 28, 2011), https://www.competitionpolicyinternational.com/file/view/6547 (describing the design of successful econometric screens).

[8] *Id.* at 2.

[9] *Id.* at 3

[10] *Id.*

[11] *Cf.* Rosa Abrantes-Metz & Patrick Bajari, *Screens for Conspiracies and Their Multiple Applications*, 24 ANTITRUST 66 (2009) (providing a survey of screening methodologies and their multiple applications); Joseph E. Harrington, Jr., *Behavioral Screening and the Detection of Cartels, in* EUROPEAN COMPETITION LAW ANNUAL 2006: ENFORCEMENT OF PROHIBITION OF CARTELS (Claus-Dieter Ehlermann & Isabela Atanasiu eds., 2007) (suggesting the increased use of screens to promote cartel detection).

III. SCREENS AND THE LIBOR

Worldwide investigations have been launched on allegations of a possible conspiracy by several major banks to manipulate the U.S. dollar Libor and Libor rates denominated in other currencies. These investigations followed the application of empirical screens that flagged unexpected patterns in the Libor setting, representing the latest example of the power of screens to flag potentially illegal behavior in the antitrust context.

Arguably, the investigations into Libor manipulation and alleged collusive activity began with a series of articles published in the *Wall Street Journal* in April and May of 2008 which alleged that several global banks were reporting unjustifiably low borrowing costs for the calculation of Libor.[12] The *Wall Street Journal* noticed that from January 2008, the banks' individual Libor quotes were too low when compared to their respective credit default swaps prices.[13]

Abrantes-Metz et al. followed with an August 2008 working paper in which these and other patterns were studied in greater detail using econometric screens.[14] This working paper noted that: (i) the Libor was essentially constant for a long period prior to the financial crisis, since at least January 2007, while comparable rates varied over time; (ii) most banks' quotes were identical for most of the same period while the banks' market implied credit ratings varied over time and in comparison to each other, meaning that some differences (even if slight) in their borrowing costs, and hence in their Libor quotes, would have been expected; and (iii) the Libor was unresponsive to changing market conditions in the late spring and early summer of 2008 when risk in the economy was already starting to increase.[15] Other research on the Libor was then conducted that identified additional irregularities.[16]

IV. THE NEW ANTITRUST PARADOX PART I

In 1978, Robert Bork published the *Antitrust Paradox* in which he decried the lack of sound economic analysis in antitrust law.[17] The paradox was that a law that was supposed to lead to greater efficiency actually raised prices because legal analysis was not rooted in economics.[18] The antitrust law of today is quite different from that of the period during which Bork wrote. In

[12] Carrick Mollenkamp & Laurence Norman, *British Bankers Group Steps Up Review of Widely Used Libor*, WALL ST. J., Apr. 17, 2008 at C7; Carrick Mollenkamp & Mark Whitehouse, *Study Casts Doubt on Key Rate*, WALL ST. J., May 29, 2008, at A1.

[13] Mollenkamp & Whitehouse, *supra* note 12.

[14] Abrantes-Metz et al., *supra* note 5.

[15] *Id.*

[16] *E.g.*, Connan Snider & Thomas Youle, *Does the Libor Reflect Banks' Borrowing Costs?* (Working Paper, 2010), *available at* http://www.econ.umn.edu/~youle001/libor_4_01_10.pdf; Rosa M. Abrantes-Metz et al., *Tracking the Libor Rate*, 18 APPLIED ECON. LETTERS 1 (2011); Rosa M. Abrantes-Metz & Albert D. Metz, *How Far Can Screens Go in Distinguishing Explicit from Tacit Collusion? New Evidence from the Libor Setting*, CPI ANTITRUST CHRON. (Mar. 13, 2012), https://www.competitionpolicyinternational.com/file/view/6642; Rosa M. Abrantes-Metz, *Libor Litigation and the Role of Screening*, CPI ANTITRUST CHRON. (Jul. 28, 2011), https://www.competitionpolicyinternational.com/file/view/6521.

[17] ROBERT H. BORK, THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF (1978).

[18] *Id.*

its present form, antitrust is perhaps the area in which the economic analysis of law has driven doctrinal and policy developments more than any other substantive field.[19]

Antitrust cases addressing issues such as mergers, predation, tying, and bundling have applied industrial organization economics in identifying behavior that might distort the market.[20] This sophisticated analysis is not limited to agency practice. Antitrust case law cites law reviews that use economic analysis and economics journals in its decisions.[21] One cannot undertake antitrust analysis—whether by agencies or private parties—in either the merger area or civil antitrust litigation without significant economic analysis at every stage of decision-making. Even firms' business strategies take antitrust considerations into account.[22]

This rigorously applied industrial organization analysis of antitrust on the civil side is distinct from antitrust analysis on the criminal side. In certain critical ways, antitrust cartel enforcement in the United States looks more like other non-antitrust, white-collar crime enforcement than the heavily economics-driven antitrust monopolization or merger enforcement. Indeed, U.S. criminal antitrust enforcement is different not merely from other areas of antitrust but from some other areas of white-collar crime in which econometrics play a more significant role.

V. THE NEW ANTITRUST PARADOX PART II

The DOJ Antitrust Division's criminal enforcement does not only differ from the rest of the Antitrust Division in its lack of econometric screening. The reluctance to use screening methods also puts antitrust criminal enforcement at odds with some other types of financial crime enforcement. Indeed, screens are used regularly in the detection of financial wrongdoing, tax evasion, and bid rigging.[23] Econometric screens were employed to flag illegal behavior in financial markets in several notable instances, including the recent stock options backdating and spring loading cases from the mid 2000s and the 1994 break of an alleged conspiracy by NASDAQ dealers in which odd-eighths quotes were avoided.[24] Detection of both of these

[19] *See* Bruce H. Kobayashi & Timothy J. Muris, *Chicago, Post-Chicago, and Beyond*, 78 ANTITRUST L.J. 147, 147–54 (2012); *see also* Barak Orbach & D. Daniel Sokol, *Antitrust Energy*, 85 S. CAL. L. REV. 429, 439 (2012) ("The evolution of antitrust has been shaped by changing lines of economic thinking and ideologies.").

[20] For an overview of the literature, *see*, for example, OXFORD HANDBOOK OF INTERNATIONAL ANTITRUST ECONOMICS (Roger D. Blair & D. Daniel Sokol eds.) (forthcoming); ABA SECTION OF ANTITRUST LAW, ISSUES IN COMPETITION LAW AND POLICY (Wayne Dale Collins ed., 2008).

[21] *See*, for example, Leegin Creative Leather Prod., Inc. v. PSKS, Inc., 551 U.S. 877 (2007), which cited an economic textbook, and articles from the *Journal of Law and Economics*, *Rand Journal of Economics*, *Quarterly Journal of Economics*, and the *Journal of Political Economy* in addition to law review articles that use economic analysis.

[22] *See generally* Thomas B. Leary, *The Dialogue Between Students of Business and Students of Antitrust*, 47 N.Y.L. SCH. L. REV. 1 (2003).

[23] *See, e.g.*, Patrick Bajari & Jungwon Yeo, *Auction Design and Tacit Collusion in FCC Spectrum Auctions*, 21 INFO. ECON. & POL'Y 90, 100 (2009); Randall A. Heron & Erik Lie, *Does Backdating Explain the Stock Price Pattern Around Executive Stock Option Grants?*, 83 J. FIN.ECON. 271, 294 (2007); Mark Nigrini, *A Taxpayer Compliance Application of Benford's Law*, 18 J. AM. TAX'N ASS'N 72, 87 (1996); Robert H. Porter & J. Douglas Zona, *Detection of Bid Rigging in Procurement Auctions*, 101 J. POL. ECON. 518, 537 (1993); Robert H. Porter & J. Douglas Zona, *Ohio School Milk Markets: An Analysis of Bidding*, 30 RAND J. ECON. 263, 287 (1999).

[24] Rosa M. Abrantes-Metz, *The Power of Screens to Trigger Investigations*, 10 SEC. LITIG. REP., Nov. 2010, at 18–21.

scandals was triggered by the application of screens to financial data and generated large-scale public investigations as well as private litigation.[25]

Other regulatory agencies worldwide routinely use screens to help detect illegal behavior in other areas and markets, not only conspiracies and manipulations, but also insider trading, tax evasion, revenues management, and other types of accounting manipulations. These agencies include the U.S. Securities and Exchange Commission, the U.S. Commodities Futures Trading Commission, the U.S. Department of Transportation, and the U.S. Internal Revenue Service. [26]

VI. HOW SCREENS FIT INTO CURRENT ANTITRUST ENFORCEMENT

The most important recent development in criminal antitrust enforcement has been the introduction of the leniency program. Leniency destabilizes a cartel through defection of a cartel member who reports the cartel activity to antitrust authorities in return for a reduced penalty.[27] Yet, in spite of the success of leniency, current antitrust enforcement seems far from optimal deterrence of cartels, with detection rates of approximately twenty percent.[28]

We believe that the use of antitrust econometric screens will encourage increased cartel detection and increase costs for the creation of new cartels. Screens have already been used to detect anomalies in pricing in a number of jurisdictions. Notable screens include those done by the U.S. Federal Trade Commission,[29] Brazil's C.A.D.E.,[30] and Mexico's C.F.C.,[31] among others.

Screens complement the leniency program, as they are able to draw enforcers' attention to anomalous behavior that the leniency program cannot detect. It may well be that leniency is more likely to fail to detect some of the most successful cartels, whose members have less incentive to apply for leniency because they all enjoy significantly larger profits than under non-collusion. Ironically, these may also be the cartels that cause the most harm to consumers. Cases detected through leniency programs are, after all, self-selected. Screens might also assist in the detection of cartels in economic sectors different from those historically detected by leniency.

Successful screens provide enforcers clues about behavior that increase the likelihood of finding hard evidence of a conspiracy.[32] Increased enforcement activity due to the investigation

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[25] *Id.*

[26] Rosa M. Abrantes-Metz & Andrew Verstein, *Revolution in Manipulation Law: The New CFTC Rules and the Urgent Need for Economic and Empirical Analyses*, 14 U. PA. J. BUS. L. (forthcoming).

[27] D. Daniel Sokol, *Cartels, Corporate Compliance and What Practitioners Really Think About Enforcement*, 78 ANTITRUST L.J. 201, 204–07 (2012).

[28] Peter G. Bryant & E. Woodrow Eckard, *Price Fixing: The Probability of Getting Caught*, 73 REV. ECON. & STAT. 531, 535 (1991) (analyzing the period 1961–1988).

[29] *See* Rosa M. Abrantes-Metz et al., *A Variance Screen for Collusion*, 24 INT'L J. INDUS. ORG. 467 (2006) (searching for collusion in gasoline markets).

[30] *See* Carlos Emmanuel Joppert Ragazzo, *Screens in the Gas Retail Market: The Brazilian Experience*, CPI ANTITRUST CHRON. (Mar. 13, 2012), https://www.competitionpolicyinternational.com/file/view/6645.

[31] *See* Carlos Mena-Labarthe, *Mexican Experience in Screens for Bid-Rigging*, CPI ANTITRUST CHRON. (Mar. 13 2012), https://www.competitionpolicyinternational.com/file/view/6644.

[32] On what constitutes a conspiracy for antitrust purposes, see Louis Kaplow, *On The Meaning of Horizontal Agreements in Competition Law*, 99 CALIF. L. REV. 683 (2011); see also William E. Kovacic et al., *Plus Factors and Agreement in Antitrust Law*, 110 MICH. L. REV. 393 (2011); William H. Page, *Communication and Concerted Action*, 38 LOY. U. CHI. L.J. 405 (2007).

around the screen may be enough to encourage at least one firm to be more likely to defect from a cartel and to seek leniency.[33]

Similarly, as part of its overall compliance program, a company may choose to run its own cartel screen to ensure that its own compliance systems are effective. A company that finds unlawful behavior internally will get the benefits of leniency from antitrust authorities. In doing so, the investment in its good governance pays off because of a firm's own reduced penalties and in the increased costs that its rivals in the industry—and fellow cartel members—will face in terms of fines, imprisonment of key individuals, litigation uncertainty, and reputation costs.

VII. CONCLUSION

The alleged Libor collusion and manipulation is something that antitrust authorities or the banks themselves could have detected had they used econometric screens. We believe that as antitrust agencies use screens more often, firms will be more likely to use screens as a prophylactic measure in the regular risk assessments they undertake to comply with antitrust law. What explains the lack of adoption of screens by the DOJ is that it, like many organizations, is slow to respond to changes. However, in a world of uncertainty, organizations may copy other organizations, as competition will eliminate inferior ideas.[34] Given how many other antitrust agencies and other non-antitrust US agencies implement screens, we believe that imitation should overcome the uncertainty that DOJ Antitrust has with screens.

[33] We note that not all screens will be effective and that screens are more resource intensive than merely waiting for a leniency applicant to provide hard evidence. However, the investment in some screens by the agency will encourage more firms to essentially privatize enforcement and run their own screens in industries in which the possibility of collusion may be significant.

[34] *See* Armen A. Alchian, *Uncertainty, Evolution, and Economic Theory*, 58 J. POL ECON. 211, 213– 14 (1950).