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Title: Big Bad Banks: Bid Rigging and Multilateral Market Manipulation

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Statement: This paper is a work in progress and is intended for later revision and publication. The Paper does not necessarily represent the position of the American Antitrust Institute.

“Money laundering, market rigging, tax dodging, selling faulty financial products, trampling homeowner rights and rampant risk-taking – these are some of the sins that big banks have committed in recent years” (Eavis 2014a: B1).

“LIBOR....dwarfs by orders of magnitude any financial scam in the history of markets” – MIT Prof. Andrew Lo (quoted in Taibi 2014).

“Wall Street’s compensation practices can reward unhealthy levels of short-term risk-taking and entice bankers into ethical lapses” (Eavis 2014).

“Yes, the Wealthy Can Be DeservingThose who work in banking....decide, in a decentralized and competitive way, which companies and industries shrink and which will grow” (N. Gregory Mankiw 2014).

Abstract

This paper assembles information from around the world of investigations and the resulting penalties imposed on price-fixing banking cartels (and similar violations) on the world's largest corporate banks and their employees. I find that there have been more than 400 instances of large banks involved in at least 63 separate illegal conspiracies to manipulate markets. These markets are huge in terms of affected revenues or assets and most are global in scope. A preliminary and partial estimate of affected commerce is \$1,432 trillion.

As of January 2014, the total amount of monetary penalties imposed is more than \$26 billion. Many investigations are incomplete, so I expect fines to climb to \$40 billion within the next three years. At least 46 bank employees have been indicted for price fixing and bid rigging. Moreover, several banks have also had serious legal non-monetary restrictions imposed, potentially the most important being Deferred Prosecution Agreements (DFAs) by U.S. authorities. With one minor exception, U.S. and UK antitrust authorities have declined to bring criminal charges against the banks.

Antitrust injuries are likely to rise to trillions of dollars, but compensation to victims will be difficult. Private damages suits are at very early stages and face many obstacles.

Introduction

Big for-profit banks have been roundly criticized in the press in recent years for many commercial, regulatory, and ethical lapses. After years of investigations by financial, bank and market regulators in the United State and abroad, billions of dollars of fines and other penalties have piled up on these entities. Among the accusations are predatory lending practices, risky investments, fraud, supervisory failures, being in an untouchable regulatory category (“too big to fail”), and undercapitalization contributing to the Great Recession. Less appreciated is the scale of the numerous investigations into criminal bid rigging, price fixing, and collusive market manipulation - and the huge penalties flowing from antitrust violations.

In this paper, I pull together information from around the world that identifies price-fixing banking cartels and antitrust-related investigations and resulting penalties imposed on the world’s largest corporate banks and their employees.¹

Scope

By “banking cartels and antitrust-related” allegations, I mean to include conventional collusive conduct (bid rigging, price fixing, market allocation, and the like) and *multilateral* conduct aimed at rigging prices or price indices in financial or commodities markets.² In every banking conspiracy examined in this paper, a cartel investigation either was either initially launched by an antitrust authority or an antitrust agency was part of a national task force of financial regulators.³ The penalties of interest include criminal fines, civil settlements, and individual penalties on bank executives.⁴ However, fraud or other violations of banking regulations by banks acting alone are excluded.⁵ Finally, I focus primarily on the investigations and prosecutions of cartel activity by

¹ I use the term “corporate bank” to distinguish for-profit, privately owned companies from government owned central banks like the Bank of England. However, see Footnote 6.

² In this paper, I include collusive market price manipulation alongside conventional antitrust violations because when multiple banks or bank employees are perpetrators, the two have many similarities and are often co-investigated (see next Footnote 4). In the United States, the DOJ Antitrust Division employs its criminal-law powers to investigate cartels, whereas the SEC typically prosecutes market manipulation as a civil matter. In other countries with different institutional arrangements, financial market regulators are less specialized or divide regulatory responsibilities in different ways. For more details, see the section “Types of Antitrust Cases Against the Big Banks ” below.

³ Frequently, because of the multiplicity of the charges being levied, financial, securities, commodities, or other market regulators simultaneously impose compound penalties. In the United States, multi-agency “task forces” are used to investigate large scale antitrust and market-manipulation allegations. These task forces are comprised of various combinations of the Antitrust and Criminal Divisions of the U.S. Department of Justice (DOJ), the Securities and Exchange Commission (SEC), the Commodities Futures Trading Commission (CFTC), and other agencies. Outside the United States, national antitrust authorities also cooperate with other financial-sector regulators.

⁴ I include all criminal and civil penalties (monetary and non-monetary consent decrees) imposed by antitrust authorities for price-fixing and bid-rigging infractions on banks and fines or imprisonment of their employees.

⁵ Thus, penalties purely for shady mortgage-lending practices, deceptive sales practices, insider trading, money laundering, failure to supervise traders, abetting Ponzi schemes, and securities’ fraud are excluded if carried out alone by a bank. (However, some of these infringements may be inextricably included as facilitating factors in carrying out antitrust conduct.) In addition, market price or price-index manipulation by a single bank or other single entity is excluded because exerting unilateral market power does not qualify as a conspiracy.

corporate banks among the 50 largest in the world in the past 25 years – those involving international conspiracies.⁶

Industry Concentration Is High

Scherer (2013: 2) calculates that U.S. top-ten asset concentration nearly trebled from 1985 to 2010, primarily because of horizontal mergers, and that high sectoral concentration led to increased systemic risk for the entire economy. National concentration is much higher and increasing in most other major industrial economies.⁷ Other students of the U.S. banking sector aver that the TARP was a mere palliative that cured none of the systemic regulatory problems with the big banks (Johnson and Kwak 2011). The too-cozy relationships between the regulators and the regulated, they opine, has led to increasing consolidation in U.S. banking, causing competitive problems that can only be solved through nationalization or asset divestitures. These views are miles apart from the more sanguine analysis of White (2013), who points to low levels of national concentration for the banking industry as a whole.

The potential dangers of collusion and other risky conducts in banking were laid bare by the global Great Recession that began in late 2007. One student of the industry concludes that it was caused by:

“...a perfect storm combining financial industry innovation, greed, and deception; imprudence on the part of beleaguered consumers; the legacy of prior crises leaving traditional institutions for home financing decimated; a securities-rating triopoly whose reward structure favored optimism over truth telling; abject regulatory failure; a ... misguided ... policy fostering more widespread home ownership; and dangerously expansive monetary polic[ies]...” (Scherer 2013: 1).⁸

Given the flare-up in collusion among banks in *international* markets (with presumably lower concentration than that of a single national market), a flaw in the previous analyses may be a too-broad product market definition for antitrust purposes.⁹ A glance at Table 2 shows that cartellists have typically colluded successfully within far more narrowly defined product scopes. When properly defined, concentration in many lines of business is high; some of these lines of business

⁶ The only example of a central bank being investigated for unilateral market manipulation of exchange rates is the Bank of England, which on March 5, 2014 announced that it had fired an employee for possibly fixing exchange rates like the U.S. dollar-British Pound from as early as July 2006 (Bray 2014). A second internal investigation is proceeding. If an employee of the Bank of England colluded with currency traders at other banks, it will be listed alongside the other defendants in in the *FOREX (Foreign Currency Exchange Market)* cartel.

⁷ In small economies like Ireland and Iceland, two or three banks typically hold dominant shares.

⁸ Although the author writes about the United States, its policies spilled over or were commonly found internationally

⁹ However, rising aggregate sectoral concentration indicators are likely of interest because they suggest that the relevant underlying antitrust markets are collectively growing more concentrated. Also, because most major banks tend to be financial conglomerates with many overlapping market interests, collusive schemes are going to be easier to form and facilitate than if banks were specialized entities.

have only three to five participants at the *global* level. Seventy percent of the global spot markets for foreign currency exchange ("FOREX") and controlled by seven banks (Longstreth 2014). Participating banks in the markets for pricing oil, gold, silver, foreign-currency exchange, payment-card fees, and rates for certain types of customer and interbank lending were able to define product markets sufficiently narrow in product or geographic scope to be cartelized.

Most of the 50 Biggest Banks Are "Guilty" of Collusion

Table 1 is a list of the world's 50 largest banks in 2013. Each has a market capitalization exceeding \$30 billion and in total they are worth \$4 trillion -- big banks by anyone's definition. Of the 50 banks, 29 (or 58%) have been penalized or are under formal investigation¹⁰ for price fixing or market manipulation. For shorthand, I shall refer to these 29 banks as "guilty," even though there is a small chance that one or two may be cleared of all charges or dismissed for lack of evidence.

The geographic mix of the 29 guilty big banks is diverse. There are four headquartered in Australia, two in Canada, three in Japan, two in Switzerland, five in the UK, nine in the United States, and one each in Brazil, France, Germany, and Sweden. On the other hand, none of the big banks in China, Hong Kong, Russia, or Spain has yet been implicated in a price-fixing case.

The guilty big banks are concentrated in five jurisdictions. All or virtually all of the top banks in Australia, Japan, Switzerland, the UK¹¹, and the United States¹² are guilty of price fixing somewhere in the world since 1990.

These geographic patterns suggest three hypotheses: (1) price-fixing big banks tend to be found guilty because they are headquartered in or do most of their business in countries with the most active antitrust authorities, (2) bank regulation was most lax in the five nations with the greatest concentration of big bad banks (namely, Australia, Japan, Switzerland, the UK, and the United States), or (3) the biggest banks are involved in a greater range of businesses than those below the top 50 and this conglomerate organization makes them hard to manage as well as statistically more prone to be caught (that is, even if guilt is a random process, some banking activities were more prone to price fixing than others, and big banks were caught because of their diversification was greater).

Types of Antitrust Cases Against the Big Banks

I have found 63 banking, financial, and commodities markets with price-fixing or multilateral market-manipulation convictions (or formal investigations presently in progress) (Table 2). Each of these international cartels has had an antitrust authority solely in charge or involved with other

¹⁰ Historically, a firm under formal investigation for an antitrust offense has a 95% chance of being subsequently found guilty and/or penalized.

¹¹ The inclusion of Standard Chartered is anomalous because, although headquartered in London, this bank does no business in the UK. All its revenues come from Asia and Africa. Its Pakistan affiliate was found guilty of collusively fixing interest rates in Pakistan.

¹² Of the 11 U.S. banks on the top 50 list, only the two smallest (Capital One Financial and Bank of New York Mellon) have *not* been charged with competition-law infringements.

regulatory authorities in investigating the violation. However, in a small number of cases, what was originally an antitrust investigation morphed into complex litigation requiring the powers reserved for other authorities; in a few other cases, an antitrust investigation was handed over entirely to a central bank, a financial regulatory authority, or even the jurisdiction's parliament. Contrariwise, investigations initiated by, say, a commodities-exchange authority are sometimes widened to include a competition law authority.

Antitrust agencies and other market regulators have detected four forms of competitive conduct that infringe on the laws of many nations in North America, Western Europe, and Asia. They are classic hard-core cartel price fixing (by far the largest), bid rigging, multilateral fixing of benchmark price indexes, and commodity-market-price manipulation.

(1) Classic Price Fixing (81%)

More than four-fifths of the cases are classic price fixing, that is, collusion over raising fees or blocking industry entry. Indeed, all the cases up to 2006 are classic price fixing.

Where the national banking sector was sufficiently concentrated or there was no tradition of cutthroat competition, banks recognized the possibilities for monopoly profits through collusion in mostly traditional lines of business. Many banking sectors had their bees heavily regulated by the government until the 1990s or later; when liberalization came, competition over fees caused profits to fall. Overt collusion was perceived as a route to restore profitability.

Classic collusion covered a wide range of selling prices: charge-card fees to retailers, inter-bank interchange fees, card currency-exchange fees, check-cashing fees, ATM fees, and interest rates on CDs, savings accounts, and loans. In some cases, collusion involved almost every bank in the country's industry: 42 commercial banks were punished for setting interest rates in Pakistan, 27 for agreeing to the prices of share-trading by NASDAQ market makers, 20 for setting charge-card fees in South Korea, 18 for UK loan interest rates, etc.

(2) Bid-Rigging (3%)

Only two of the banking cartel were engaged primarily or exclusively in bid rigging. They are: *Private Equity Buyouts* and *Municipal Bond Derivatives*, both of them U.S. cases. The *Derivatives* case is being very heavily prosecuted by the DOJ, as it potentially affects the interest paid on trillions of dollars of municipal financial assets. Several banks, brokerage firms, and their employees have been held responsible for failing to obtain competitive interest-rate bids.

The *Private Equity* case was filed by private plaintiffs in 2006. Plaintiffs allege that about ten private-equity firms (including one bank proper, Goldman Sachs) colluded on bidding for the business of managing going-private transactions over a five-year period. Damages arise from an infra-competitive price for the stock of the target company. It has not been settled but has survived a motion to dismiss.

(3) Conspiracies to Misrepresent Benchmark Price Indices (10%)

The six index-rate conspiracies began with allegations of two banks's coordinated manipulation of silver futures contracts by taking large short positions (lowering the future price of silver) in the

United States' Comex Exchange starting in June 2008. The CFTC closed its investigation after five years, but plaintiffs have pressed on to the 2nd Circuit Appeals Court after the District Court dismissed its class action in December 2012.

The second far-reaching case or cases shows how difficult it is to count the number of affected markets. Public knowledge of the *London Interbank Borrowing Rate (LIBOR)* case began in September 2008 with simultaneous three-continent joint raids by the U.S. DOJ, SEC, CFTC, UK Office of Fair Trading, and Japan FTC of allegations of collusion by a large number of banks on their reports of short-term lending rates to a company supervised by the British Bankers Association. (Later, news reports told of a leniency “marker” given to UBS AG by the Canadian Bureau of Competition on January 5, 2010). Raids in October 2011 by the EC and by the Swiss competition authorities were reported in early 2012; since then the German, Singaporean, Dutch, Swiss, and Hong Kong banking and antitrust authorities have opened probes of the related interbank loan rate indexes: the TIBOR/JPY LIBOR (Tokyo), EURIBOR (EU), SIBOR (Singapore), and Swiss Franc-denominated interest rates. There are now 20 large banks one or more non-bank trading firms known to be under suspicion, along with at least eight individual traders.

The first corporate penalties began on a piecemeal basis with civil fines by the US CFTC and DOJ on Barclays in June 2012. More large fines have been imposed by the UK and Japan Financial Standards Authority, US SEC, EC, and Swiss antitrust authorities (detailed below). The EC decision identifies two separate cartels that affected the EU, the *EURIBOR* and *JPY LIBOR Interest Rate Derivatives*. How many other separate cartels will be identified is difficult to say at this point.

The two most recent alleged index cartels appeared in 2013. One is allegedly organized to manipulate *Platt's Brent Crude Oil Price Index*. The EC raided companies in May 2013. Nine trading and financial firms are under suspicion. The second one to come to light in 2013 concerns interest rates based on the Swiss Franc.

(4) Commodities Market Price Manipulation (5%)

Spot trading in commodities is in the United States and in most other capitalist economies largely unregulated by government authorities. If there is a regulatory authority, it is a private, industry-supported institution, such as the London Metals Exchange. (Futures markets' contracts are a different story; these contracts are regulated by the U.S. CFTC and several parallel national authorities). “Commodities” includes items like physical objects (silver, gold, copper, aluminum, gems, and petroleum products), money, derivatives (the commodity is a contract), and Bit Coins.

There are three commodities cases: *Aluminum Storage*, the *London Gold Fix* and the *London Silver Fix*. The allegations in *Aluminum* are that storage of the metal by Goldman Sachs and other banks has been used to affect the London Metal Exchange (LME) international price index for aluminum.¹³ The two London precious metals cases allege collusive manipulation of cash prices by collusion

¹³ The direct complaints in this complex case concern the physical handling of aluminum, which is shuttled from one warehouse to another in the Detroit metro area. As it allegedly influences the LME price index, this case could reasonably have been categorized as a case of benchmark price manipulation.

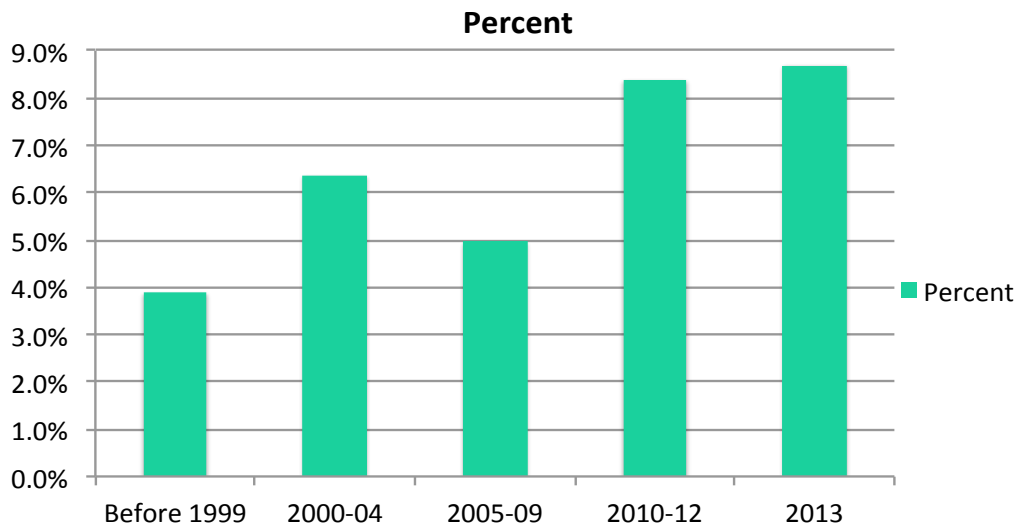
among the three to five designated banks that meet every business day to announce world cash prices for the two metals.

Banking Antitrust Cases Are Relatively Recent

Almost four-fifths of the 63 international banking-industry cartels were discovered by authorities after 1999, and half since 2009 (i.e., almost six per year during 2010-2013).

I examined the frequency of the discovery of the 63 banking-related antitrust cases relative to all other 854 international cartel cases in the PIC data set. For the entire period 1990-2013, the number of banking cartels comprised 7.0% of the non-bank cartels with sufficient data (Figure 1). That ratio rose from 3.9% before 1999 to more than 8% in 2010-2013.

1. Annual Rates of Discovery of Banking Cartels Relative to Non-Bank



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How Old and Durable are the Cartels?

Figure 2 shows the year that the banking cartels are accused of beginning to collude. Data are available for 50 of the 63 cartels (78%) because decisions containing this information have not been announced for about one-third of the alleged cartels. As a rule, the beginning dates tend to be slightly later than the true dates of the start of collusion because the dates must be proven with direct evidence.

The oldest discovered banking cartel began collusion in 1969. It is known as *Bank Debit-Card Interchange Fees -- Cartes Bancaires*, named after a trade association of hundreds of banks located in France and managed by a committee of about ten of the nation's largest banks.¹⁴ This case, investigated by France's Autorité de la Concurrence from September 1993 to April 2012, concerned setting interbank fees for debit cards. Collusion partially ended in October 2012 when the interchange fees were cut in half and fully ended in January 2, 2014 when the fees were set at *zero*.¹⁵ The French debit-card fee cartel lasted 540 months, the most durable cartel in the banking sector.

The second oldest cartel is from an EU case decided in 1992 encapsioned as *Eurocheque*. Eurocheques are money checks recognized by a consortium of banks across most of the EU, somewhat like travelers' checks but with more uses. In this case, the EC proved that collusion by a duopoly¹⁶ of multibank entities (Groupe des Cartes Bancaires and Eurocheque Intl.) on fees for Eurocheque issuance began as early as 1983. An EC Decision that imposed fines in March 1992 formally ended the practice, but collusion probably ended with the EC's raid in July 1990 (79 months). The third- and fourth-oldest cartels were also prosecuted by the EC: *Bank Debit-Card Interchange Fees (EU)* and *Bank Credit-Card Interchange Fees (EU)*. Both lasted from as early as 1985 to April 2010, more than 304 months.

The fifth-oldest cartel is *NASDAQ Market-Makers*, in which 27 banks and brokerage houses were found liable for collusion in raising the margins that comprised their revenues from May 1989 to May 1995 (60 months). This is the first contemporary price-fixing cartel discovered outside of Europe and the first to contain mostly U.S. financial institutions (a few were from Europe). This cartel was famously prosecuted by a class of private litigants, who were tipped off by an academic study of suspicious price patterns and who obtained a \$1.027-billion settlement that stood as a

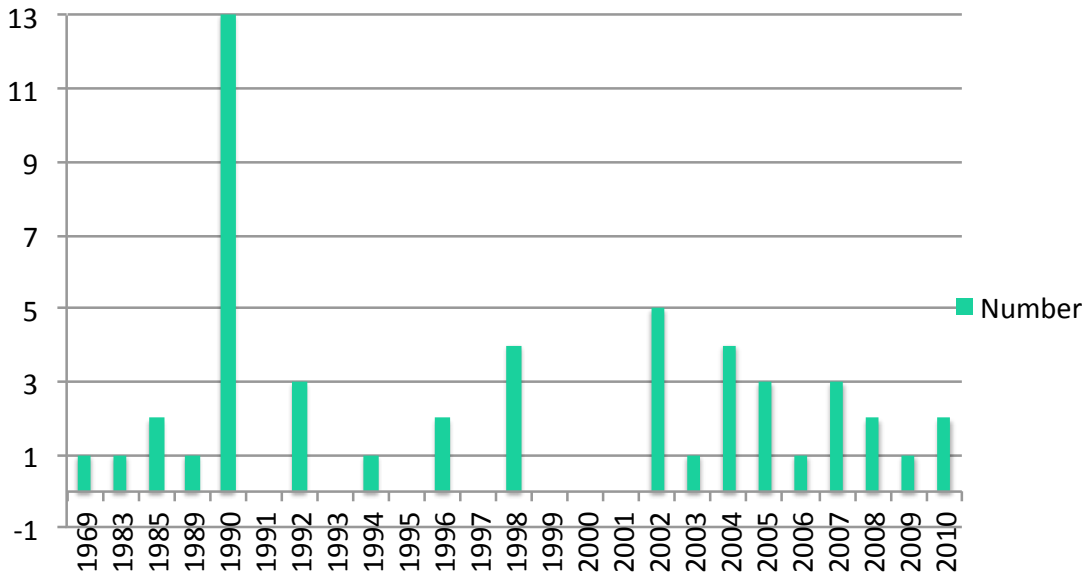
¹⁴ *Debit-Card Interchange Fees -- Cartes Bancaires* was a decision about seven cartelized bank fees, but only two of the fees generated significant income for the banks.

¹⁵ The Autorité reduced many banking fees using as a standard the marginal costs of the most efficient bank in the market. This judgment implies a rather rare competitive outcome: namely, that *all* the debit-card fees received by these banks were overcharges (at least for several years prior to the Decision). The overcharge rate is 100% of affected fees or, more properly, *infinite* relative to the competitive price.

¹⁶ In a sense, many hundreds of national banks in the EU that owned the two check-issuing groups were guilty of the infringement, but the EC (and other antitrust authorities faced with the same issue in subsequent similar cases) decided to hold only the two multibank entities responsible.

record in antitrust for many years. The defendants continued to collude for about a year after the first damages suit was filed.

2. Number of Cartels Formed, by Year, 50 Banking Cartels



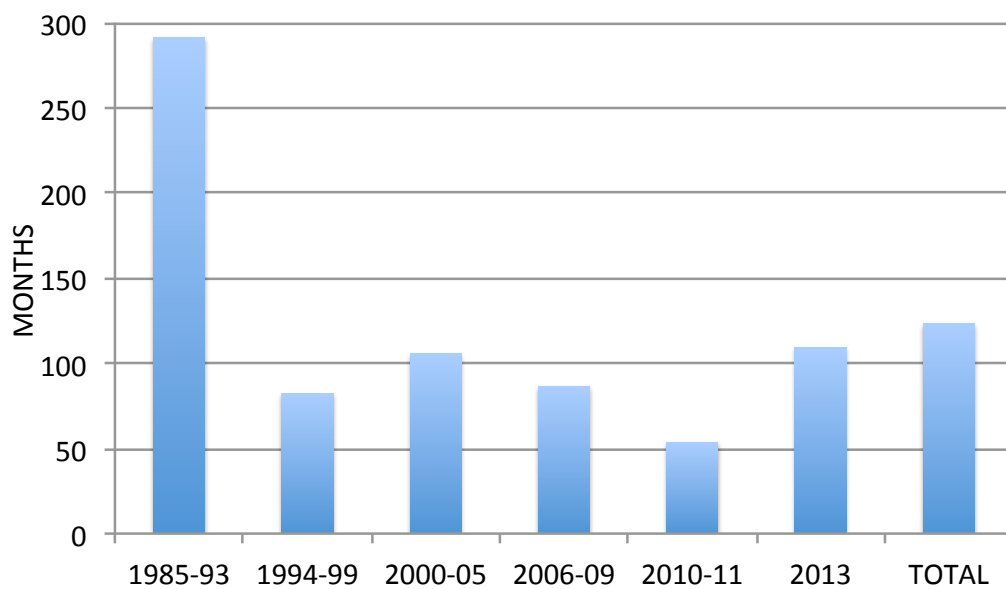
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On average, the banking cartels have endured for 123 months (Figure 3).¹⁷ This average is roughly three years longer than the typical contemporary cartel. Except for the first eight cartels that began operating during 1985-1993, duration varied from about 50 to 105 months. One reason that the very earliest cartels displayed such extraordinary longevity -- five times the length of a typical cartel -- is that Visa, MasterCard, Cartes Bancaires, and similar multibank associations put up spirited legal fights to retain what they believed to be their legal fee-setting rights. The EC and other EU antitrust authorities had to contend with lengthy battles over appeals in the European courts, and delays added to the defendants' supranormal profits.

3. CARTEL DURATION, by Year Formed



¹⁷ There are 44 observations currently available, so this average could change slightly as more is revealed about the 63 cartels. The histograms are averages of five to nine cartels.

Why the Surge in Price-Fixing Violations Now?

Price fixing seems to be in part an outgrowth of the newly conglomerated structures of the big banks. From 1933 until late 1999 when the Glass-Steagall Act was replaced with a law sponsored by Sen. Gramm of Texas, commercial and investment banking were strictly separated (Blinder 2014: 266)¹⁸. Commercial banks adhered to traditional core banking activities, whereas investment banks engaged in capital market activities. Commercial (and “retail”) banks¹⁹ were the only types allowed to issue and hold savings accounts; they also made business or personal loans and advised deposit holders on basic investment products. Investment banks, on the other hand, raised capital by underwriting securities or acting as an entity’s agent in selling securities; investment banks were involved in initial public offerings (IPOs), mergers and acquisitions, market-making, management services for bonds and equities, and trading in securities, derivatives, currencies, and commodities.

As the walls between commercial lending and investment banking came tumbling down after 1999, banks branched into new markets with greater growth possibilities (and attendant increases in risk). To take advantage of the growth of IPO fees in the “.com boom” years or to accommodate the launching of dozens of new derivatives, new units were acquired and stitched onto and among the more traditional commercial/retail banking segments. Large commercial banks became complex conglomerates with perhaps insurmountable governance and management issues.²⁰

In the 2007-2008 financial crisis, three large U.S. investment banks failed: Lehman Brothers, Merrill Lynch, and Bear Stearns (Blinder 2014: 100-130).²¹ The remaining two of the Big Five investment banks, Goldman Sachs and Morgan Stanley were hurriedly converted into bank holding companies so that they could receive U.S. Government loans from the \$700-billion Troubled Asset Relief Program (TARP). Goldman Sachs accepted \$14.9 billion and Morgan Stanley \$10 billion from taxpayers.²² In 2010 the Dodd-Frank Act incorporated the Volker Rule, which will be promulgated through rule-making in 2014 and which re-imposes much of the former Glass-Steagall separation.

A second reason mentioned by critics is the compensation practices in the industry, which have steadily moved toward the hedge-fund model (Blinder 2014: 81-84). A higher proportion of compensation comes in the form of annual bonuses tied to annual profits of employees’ profit

¹⁸ However, in April 1998, 19 months before president Clinton signed the law, Citibank and Travellers Insurance (illegally) announced their intention to merge.

¹⁹ Retail banks include credit unions and savings-and-loan banks. Commercial banks are also known as depository institutions.

²⁰ When Goldman Sachs and Morgan Stanley converted from investment banks to bank holding companies, they did not add commercial-banking activities to their portfolio of businesses. However, they have shed some of their lines of business since 2008.

²¹ The latter two investment banks were practically forced by the Treasury and Federal Reserve to be acquired in 2008 by Bank of America and JP Morgan, respectively.

²² In that same year, Goldman and Morgan Stanley paid out \$4.8 and \$4.5 billion in bonuses, respectively.

centers than was the case a decade or two ago. Similarly, top managers are getting more of their compensation in highly liquid stock options. Boards of directors fail to defer compensation, issue restricted stock, and tie it to long-term performance; and, lacking sufficient independence, boards consistently reward top executives large bonuses even after major governance failures and institutional penalties. Such compensation structures can lead to “short-term risk-taking and ethical lapses” (Eavis 2014b).

The third criticism, and perhaps the hardest to change, is the business culture or ethos in banking that was exposed by the financial crisis of 2007-2008.²³ Besides widespread fraud, disrespect for regulations, and criminal price fixing, an idea permeating bankers conduct was that depositors’ and bondholders’ money was theirs to play with. The President of the Federal Reserve Bank of New York has stated: “There is evidence of deep-seated cultural and ethical failures at many large financial institutions” (Dudley 2013). Notably, industry leaders failed to take up Dudley’s gauntlet (Eavis 2014a). Unlike some European bank CEOs, no U.S. CEOs resigned, offered to resign, or refused to accept unjustified bonuses.²⁴

Historical Evolution of Prosecutions

The oldest antitrust cases began by investigating the competitiveness of fees for ordinary lending and interbank fees for payment cards. Later, investigations began looking at manipulation of interest-rate reporting by banks. Most recently – and legally the least developed – are cases involving spot currency and physical commodity markets.

Interchange, ATM, and Other Bank Fees

Historically in the United States and all other countries, banking was subject to a wide range of regulations (White 2013: 5-11). Prudential regulation sets minimum capital requirements and insures deposits so as to minimize insolvency. Information regulation requires that financial reports and customer fees follow standardized formats. In the past economic regulations mandated upper limits on interest rates or numbers of branches, forbade intrastate banking, fixed commissions for equities transactions, and restricted entry into depositary banking. By the late 1980s or so, these entry-forestalling rules were largely gone. At the same time, in the United States and most other jurisdictions, antitrust enforcement became effective in the sector after liberalization (ibid. pp. 17-20).²⁵

²³ Oddly, for a book permeated with Old-testament language, other than vague references to “disgraceful lending practices” and the like, Blinder (2014) says nothing about this subject.

²⁴ The CEO of Rabobank resigned for the ethical lapses at his bank, and the CEO of Barclay’s refused a proffered \$4.5-million bonus.

²⁵ For U.S. merger enforcement, the DOJ and the Fed share responsibility.

In 1985, the EC began investigating four multibank entities (Groupe des Cartes Bancaire, American Express, Visa Inc., and MasterCard Inc.) for two separate price-fixing cartels, *Bank Credit-Card Interchange Fees* and *Bank Debit-Card Interchange Fees*. After a hard-fought legal battle of 22 years involving multiple appeals, in both cases the EC issued a decision without imposing fines that mandated very large reductions in the interchange fees,²⁶ because the fees were exorbitant relative to the banks' processing costs. Subsequent research identified the credit-card overcharges in the EU to be 133% to 250% (and debit-card 133% to 150%) of the post-decision mandated fees (Evans and Mateus 2011: 19-20). The banks' fee incomes on credit and debit cards during collusion were enormous: an estimated \$300 billion and \$171 billion in nominal revenues, respectively.

These were precedent-setting cases. Many other national competition authorities became concerned about the size of payment-card and ATM fees and how they were set. Extensive electronic networking and computerization of interbank fee transfers had rapidly lowered the costs per transaction, yet within and between many countries, fees had remained at stubbornly high historical levels or even had been raised.²⁷ By 2013, about 40 cartels fell into this category, five-eighths of the sample.

From 1992 to 2011, a large number of national antitrust authorities began investigating²⁸ uniform payment-card (credit and debit card) interchange fees²⁹ imposed by a cartel of their national banks or imposed on their national banks by Visa, MasterCard, or similar national multibank entities.

These national cases and the dates they began are:

- Canada (debit cards) 1992
- France (payment cards, ATM) 1993, 1993, 1993, 1993, 1993³⁰
- Korea (credit cards) 1997, 2000, 2004, 2011
- US private cases (both) 1989, 2004, 2005
- US DOJ (both) 1998
- Australia (credit cards) 1999
- Germany (credit cards) 2000
- UK (credit cards) 2000
- Australia (debit) 2000

²⁶ I will for convenience refer to such non-fine conduct-restraining decisions, some of them settled through negotiations with the defendants, as "consent decrees," because they resemble the consent decrees of the U.S. FTC.

²⁷ The first general-purpose charge card was Diners Club (1950). The predecessor of Visa, the first credit card, was launched in 1958. By 1970, over 100 million credit cards had been issued in the United States.

²⁸ In this report, only investigations of payment cards *begun or joined by antitrust authorities* are included. While the same authorities also resolved many of these cases, in some countries the central banks or legislatures took over and issued remedies (usually in the form of mandatory caps on fees, some as low as zero). In the EU, the EC achieved individual consent decrees with Visa and MasterCard, but the Parliament is debating formal regulations about bank transactions fees that will apply to all payment cards.

²⁹ The interbank interchange fee comprises about 80% of the total fees charged to merchants; the other components have generally not raised competitive concerns. In addition, total merchant fees have been subject to restrictive rules (e.g., "no surcharge" or "honor all cards") that can restrict competition among retailers (OECD 2012: 11-12).

³⁰ Multiple years indicate cases involving multiple targets, additional forms of illegal conduct, or fees from separate markets.

- Spain (credit cards) 2003
- Spain (debit cards) 2003
- Switzerland (credit cards) 2003, 2008
- Israel (credit cards) 2005
- New Zealand (credit cards) 2005
- Finland (credit cards) 2007
- Iceland (both cards) 2007
- Hungary (both cards) 2008
- Estonia (both cards) 2008³¹
- Italy (both) 2009
- EU (debit card) 2010
- France (check-clearing) 2010
- Latvia (both cards) 2011
- Turkey (credit cards) 2011

Like the EC, the national cases all resulted in caps on fees that were reflective of costs and were much lower than the collusive interchange fees. In some jurisdictions, monetary penalties were also imposed.³² In France, for example, consent orders or substantial fines were imposed by the Autorité de la Concurrence on six banking cartels.³³ In some other jurisdictions, such as Denmark, investigations resulted in a finding that interchange fees were not uncompetitive (OECD 2012: 20).

Loan Interest and Other Traditional Bank Rates

Several cartels were discovered to have been rigging old-fashion customer banking charges unrelated to ATM or payment-card fees. In the UK, for example, the Office of Fair Trading imposed substantial fines on 14 banks for briefly colluding on interest rates for lending. In 2002, the EC fined the eight largest banks in Austria for operating the *Lombard Club*, which fixed virtually all bank lending rates for six years. A second EC investigation turned up a conspiracy among a large number of EU banks on rules for translating the values of accounts in national currencies into euros when that currency became official in 1992; most banks agreed to revise those rules, but a group of mostly German banks resisted and were heavily fined. Several more broad scale antitrust banking investigations of traditional banking charges are currently in progress in Korea, Portugal, Bulgaria, Hungary, and the Netherlands.

³¹ Fees were lowered by the industry during the investigation; no case initiated (OECD 2012: 21).

³² Turkey, for example, levied record-setting fines of \$486 million on 12 national and foreign banks.

³³ They are: *Bank ATM fees, Cartes Bancaires Group; Bank ATM fees, Visa and MasterCard; Bank Debit-card interchange fees, Cartes Bancaires; Bank interbank check fee; Bank Payment-card interchange fees, Cartes Bancaires; and Bank payment-card interchange fees, Visa & MasterCard.*

Financial-Product Exchanges and Auctions

More recently, antitrust investigations have been directed at exchanges that trade in currency, set interest rates, or value derivatives. Many of these alleged schemes are international or global in scope.³⁴ In 2010, the DOJ began investigating the exchanges for *Credit Default Swaps (CDS)* and in 2013 word about a parallel investigation by the EC leaked out. The amount of assets held worldwide in CDS contracts is mind-blowing, something around \$200 trillion, so even tiny effects on interest rates for these derivatives could translate into huge injuries.

A largely completed criminal case in the United States is the sprawling bid rigging scheme involving *Municipal Bond Derivatives*. These are reverse auctions. About 50 banks and bond-services firms have been targets, and 15 individuals have been criminally indicted by the DOJ for rigging bids worth about \$2 trillion over a 20-year period. Dozens of private damages suits are on-going.

Interest-Rates Reporting

Potentially the largest set of interrelated cartels are those accused of manipulating the *London Interbank Offer Rate (LIBOR)*³⁵ and the Japanese Yen (*JPY LIBOR/TIBOR*), Euro (*EURIBOR*), Hong Kong dollar (*HKIBOR*), and other national currency interest rates for five years. These short-run rates are used to price mortgages, credit cards, corporate loans, and many other financial instruments (Goldstein and Protess 2014). More than \$600 trillion in assets presently are priced off of these rates.³⁶

According to press reports, preliminary investigations of *LIBOR* bid rigging began in January 2010, when a bank sought a marker for a leniency application in Canada (and probably other jurisdictions).³⁷ The first raids occurred in the EU in October 2010, followed by coordinated raids by U.S., UK, and Japanese antitrust authorities in April 2011. The number of authorities now known to be cooperating on these investigations is astounding: the US DOJ, US SEC, US CFTC, US Federal Deposit Insurance Corp., the U.S. Federal Reserve Bank, UK Financial Conduct Authority, the State of New York Department of Financial Services, many State attorneys general,³⁸ and antitrust authorities in Japan, Hong Kong, Netherlands, Singapore, Germany, and Switzerland. So far, fines by five authorities on five banks have amounted to \$5.1 billion, but there are at least 17 more corporate defendants in this sprawling case that have not yet paid fines.

³⁴ The U.S. *Silver Futures Contract* investigation by the CFTC is one exception.

³⁵ Technically, it was known as the “BBA LIBOR” (British Bankers’ Association LIBOR), but has been replaced with the Intercontinental Exchange LIBOR (“ICE LIBOR”).

³⁶ Figuring affected sales from these assets will be a major empirical issue in setting fines and determining damages.

³⁷ The U.S. DOJ granted partial leniency to UBS in July 2011. In December 2012, UBS was the first to conclude a U.S. plea bargain. By that time, UBS had fired more than 30 traders. Despite its cooperation, UBS paid a record \$1.1 billion fine. In a January 10, 2013 article in the *Wall St. Journal*, UBS’ profits from speculative LIBOR trading in 2008 alone were estimated to be \$654 million. Total U.S. fines for *LIBOR* are now very close to \$3.0 billion.

³⁸ The States are suing for \$6 billion in damages, and the FDIC is suing for unspecified damages it incurred when it was forced to take 38 banks into receivership.

On December 4, 2012, the EC became the first major authority to complete³⁹ two of its interest-rate cases, *EURIBOR and JPY LIBOR*.⁴⁰ Three large banks were fined \$1.414 billion for EURIBOR, and five were fined \$0.908 billion. Taken together, this \$2.322-billion dual decision is a new record for the EC. However, the zero fines for the two amnesty recipients reduced the total fines by 59%: the but-for fines were \$3.391 billion for UBS in *JPY LIBOR* and \$0.936 billion for Barclays in *EURIBOR*. The EC is presently investigating the Swiss Franc LIBOR. Reactions to the LIBOR cartels were intense in the EU; in December 2012, the EU Parliament began to consider a new law that would criminalize the manipulation of all financial benchmarks.

In early 2014, the U.S. DOJ began penalizing banks and traders involved in manipulating the JPY LIBOR. In January 2014, UBS was hit with \$475 million in U.S. fines, criminal and civil (DOJ 2014a). The press release suggests that this was a coordinated U.S.-UK action. The DOJ announcement is uncharacteristically humble in describing the degree of assistance from the UK FCA and the CFTC.⁴¹ The most intriguing part of the plea was the imposition of a *criminal* fine of \$50 million on RBS Securities Japan; the remainder of the \$475 million was imposed on the parent company, RBS PLC. Had a criminal fine been placed on the parent, it would have closed shop in the U.S. market, thereby increasing concentration. RBS PLC also agreed to a Deferred Prosecution Agreement (DPA), which is similar to a non-prosecution agreement except that the conviction *does not count when figuring a recidivism fine uplift*.

Thirteen traders have been charged in *LIBOR*. Some likely will receive severe, perhaps unprecedented antitrust sentences. In September 2013, three traders who worked for ICAP were indicted by the U.S. DOJ on three counts; each trader could serve a maximum of *30 years in prison for each count*!

A task force comprised of several U.S. agencies and a similar UK task force that includes its Financial Conduct Authority are sharing most of the prosecutorial labor in *LIBOR*. The two sides have decided to divvy up the work to avoid conflicting indictments, particularly for the individuals (bank officers and traders). There have been some unanticipated actions that have led to clashes between the two task forces and that required top-level negotiations to resolve (Goldberg and Protesch 2014).⁴²

³⁹ Reliable press reports say that three banks are still under investigation.

⁴⁰ Normally, the EC takes three or more years to complete its decisions, but most of the cartelists used the EC's fast-track "settlement" procedure.

⁴¹ "The Justice Department acknowledges and expresses its deep appreciation for [the FCA's and CFTC's] assistance" (DOJ 2014a: 2).

⁴² An interesting discrepancy in the *LIBOR* prosecutions is the Transatlantic treatment of Rabobank. The U.S. authorities obtained a guilty plea from Rabobank that involved \$800 million in fines. Moreover, when the DOJ indicted three Rabobank executives, it took pains to issue a very detailed press statement full of inculpatory details and quotes from emails and chat rooms (DOJ 2014). However, a speech by the EC Competition Commissioner says that Rabobank is innocent in *LIBOR* and *EURIBOR*!

Spot Currency Markets

Additional huge markets under investigation⁴³ are the nearly unregulated exchanges for *Foreign Currency Exchange Rates* (“FOREX”), which involves flows of \$3.5 trillion *per day*. The U.S., EU, UK, and Swiss authorities began investigating possible manipulation of the “WM/Reuters” currency-exchange rates by up to seven large commercial banks in late 2013.⁴⁴ In March 2014 came the shocking news that an employee of the Bank of England had been placed on leave and a second internal investigation launched concerning manipulation of the U.S.-dollar-UK Pound exchange rate (Bray 2014).⁴⁵ UBS is reportedly seeking antitrust leniency⁴⁶ in 14 *jurisdictions* and has suspended six of its FOREX traders in early 2014 (Bloomberg 2014, Flitter and McGeever 2014).

More than 20 FOREX traders have been suspended by all banks. Eight UBS, Rabobank, and ICAP traders have been indicted by the U.S. DOJ. Messages sent through Instant Bloomberg released show that the traders involved brazenly called themselves “The Cartel” and “The Bandits’ Club” (Vaughn et al. 2013, Goldstein and Protess 2014).

Commodity Markets

Three commodity markets are being investigated for price manipulation: Gold, silver, and crude petroleum.

The U.S. CFTC first announced investigations of the unregulated *London Silver Fix* and the *London Gold Fix* markets in March 2013. Twice daily, telephone conference calls are held to set the world cash (or “spot”) price of silver (three banks) and of gold (five banks) – a system in practice since 1919 (Melville 2014, Vaughn 2014). Because Deutsche Bank is involved in both markets, the German financial markets regulator BAFIN opened a probe in late 2013; the UK Financial Conduct Authority began a probe a month later. A private U.S. antitrust damages suit was filed in federal court in March 2014.

Based on a complaint received from a small Hungarian trader, in May 2013 the EC raided the offices of at least nine major European petroleum traders.⁴⁷ The EC is concerned about false submissions to the industry magazine *Platt’s Oil*, which publishes *Platt’s Dated Brent Crude Assessment*, an oil-price index used to price most of the world’s crude petroleum. The U.S., Korean, and Japan FTCs are also investigating these allegations.

⁴³ Note that I do not include a potentially large case involving manipulation of the *ISDAfix* benchmark for interest-rate swaps, mostly by ICAP traders (Taibi 2013). Assets affected are about \$379 trillion, and there is the possibility that *LIBOR* and *ISDAfix* may interact, causing multiplicative injuries. This case is to my knowledge solely under the investigation of the U.S. CFTC; should an antitrust authority become involved, it will be added to the list of cartels.

⁴⁴ One initial decision by a U.S. judge concluded that collusion was not possible because FOREX exchanges pricing was essentially cooperative (Longstreth 2014). The reasoning of this decision was severely critiqued by Vaheesan (2013).

⁴⁵ Sixty percent of FOREX trading occurs in London (40%) and New York (20%).

⁴⁶ UBS dodged a \$3.5-billion fine in the EU due to immunity, a record fine but for amnesty.

⁴⁷ The Norwegian state-owned oil company Statoil is seeking leniency.

The amounts of commerce affected are likely to be enormous. One study has found evidence of manipulation extending for ten years (2004 to 2013), which amount to about \$200 *trillion* dollars of affected commerce. The affected crude oil market may be even larger.

In 2014, several big banks announced the sale or impending divestment of their physical commodities businesses.

Harm to Markets and Customers

With most cartels, finding or estimating the size of market revenues affected by collusion is usually straightforward after plea agreements, sentencing memoranda, or an authority's decisions are posted.⁴⁸ In the case of the cases involving banking, affected sales are difficult to measure. In some cases, the *assets* affected are well known; the assets affected by just a few price-fixing schemes are approximately \$1 *quadrillion*.

But the associated flows of *revenues* (say, interest income, brokers' fees, and the like) are either well guarded secrets or must be approximated with complex computations (see box):

Affected sales in FOREX is Mind-Boggling

Several sources say that that amount of foreign currency changing hands worldwide is a staggering \$5.3 *trillion per day*. Private damages litigation has an expert report that finds statistical aberrations in FOREX trading about 26% to 34% of the afternoon fix from January 2003 to March 2014. If one multiplies the number of trading days (260) by 30% and by 11.25 years, then affected foreign currency trading volume is an unimaginable \$4.651 *quadrillion*.

However, fee income to traders will be a very small portion of that number because spreads are historically 0.5% to 1.0% of value traded and fee revenue will be a portion of the spread. Two studies (Lyons 1998, Yao 1998) find that banks' trading revenues are 0.11 to 0.73 basis points of trading volume. Hence, affected *FOREX cartel* fee revenues are \$51.2 to \$339.5 *billion*.

A k-industry cartels amounts to an unfathomable \$1,432 trillion (\$1.4 quadrillion).

Harm to customers starts with multiplying affected industry revenues times the percentage overcharge. So far, overcharge rates attained by the banking cartels have been sparsely reported. There are about 17 estimates of overcharges available for the oldest group of cartels -- interbank interchange fees -- that average 61% of fees. Total customer overcharges for these 17 cartels amount to \$347 billion. Two more cartels, *Municipal Bond Derivatives* and *NASDAQ Market-Makers*, have overcharges in the 3% to 4% range. However, as in the *FOREX* case above, some bank trading activity involves razor-thin margins. The change in margins attributed to price-fixing may be measured by a few basis points. It seems likely that antitrust injuries from banking cartels and market manipulation will rise to trillions of dollars worldwide.

⁴⁸ Unfortunately, decision reports often take four to six years after an investigation begins to be published.

Two Hundred and Nineteen of the World's Banks Are "Guilty"

Although the focus of this paper is on the world's biggest banks, many smaller banks and their banking associations⁴⁹ have been deemed guilty of price fixing, many of them the largest in their jurisdictions. At least 219 banks have been penalized or are currently under investigation for price fixing or multi-bank market manipulation (Table 3).⁵⁰ These banks have been accused or penalized for 444 instances of cartel conduct. Almost of these cases (432) were banking-industry cartels.

Of the 219 named banks, the 29 guilty Big Banks participated in 33.6% of these antitrust violations. However, the governing boards of Visa and MasterCard were known to be dominated by the Big 50 Banks, so it seems appropriate to add their violations to the list of Big Bank violations, bringing their share to 40% of the number of cases and 43% of the monetary penalties so far levied on them (Table 3).

Antitrust Penalties on Banks Total \$29 Billion

Prosecuting authorities around the world have imposed a wide variety of penalties on the big banks. The headline-grabbing monetary penalties include civil fines, mandatory restitution, and administrative fines for negligence or administrative failures. Corporate guilty pleas are often accompanied by detailed, embarrassing, and raunchy admissions of fraudulent and conspiratorial conduct. Both mid-level and high-level bank employees have been arrested and charged with crimes, some of them felonies. Three CEOs of large banks have resigned, and others have seen their reputations plummet to Congressional levels.

Guilty Pleas and Admissions of Criminal Liability

Price fixing is a criminal felony in the United States. Yet, only one bank, RBS Securities Japan, has had to make a criminal admission of guilt. Such an admission by a bank operating in the United States would be its death knell. Indeed, the former chief of the Criminal Division of the DOJ, Lanny Breuer, publicly stated that this maneuver was designed to save the parent RBS from a criminal plea. "Our goal here is not to destroy a major financial institution," he stated (Taibi 2013).

Individuals *are* being criminally charged and sentenced to prison terms, mostly by U.S. authorities, but also by UK authorities. (See section below for details).

Civil Corporate Fines

⁴⁹ Visa, MasterCard, and Cartes Bancaires were for many years industry associations owned and operated by thousands of member banks that issued their payment cards. These associations were converted to corporations in the past five years.

⁵⁰ I call them entities because three were associations and a few are government-owned. Note that the EC has prosecuted banking associations on at least eight occasions, has held the bank-members liable for \$10 billion in fines, but did not reveal the names of the approximately 28,000 banks (Table 3).

As of February 2014, civil fines of \$28.7 billion have been imposed for price-fixing offenses around the world by antitrust authorities, sometimes in concert with financial-security or banking regulators. Nearly all have so far come in the United States and the EU. Of the \$28.7 billion, 44% was imposed on the 29 of the Top 50 banks.

In a break from past practice, the SEC has begun including “admissions of liability” in the civil fine agreements signed with banks. Before 2012 or so, companies had been allowed to escape admissions of responsibility when paying large civil fines. No more.

Mandatory Restitution

Along with the fines, a few banks have been required to compensate customers for their losses. However, so far

Related Fraudulent Conduct

For several banks, price-fixing charges have been accompanied with additional charges of fraud. Fraud is widespread in the industry of late. JPMorgan handled the accounts of infamous Ponzi schemer Bernie Madoff for many years by ignoring warning signs and pointed questions for a few of its staff. The fraudulent involvement of big banks in the 2007-2009 housing crisis is well known. As many as 14 Swiss banks have assisted tax cheats in the U.S. through unregistered investment advisors to evade billions in taxes (Lowrey 2014).

“There is evidence of deep-seated cultural and ethical failures at many large financial institutions”

The level and longevity of illegal conduct within and among banks has caused some eminent observers of the global banking industry to quest whether it has any moral compass anymore. Perhaps the most trenchant comment came from the President of the New York Federal Reserve Bank, William C. Dudley (Eavis 2014):

“There is evidence of deep-seated cultural and ethical failures at many large financial institutions”

Litigation Reserves

The big banks have been socking away large litigation reserves so that, when large antitrust fines are announced, they can reassure their investors that there will be “no effect on earnings.” For example, between January 2010 and mid 2012, three big U.S. banks (Bank of America, Citibank, and JPMorgan Chase) set aside an additional \$29 billion in litigation reserves (Reilly 2012). However, most publicly listed banks are loath to reveal the *cumulated total reserves*, and financial analysts are usually unable to accurately estimate the total.⁵¹

⁵¹ For example, one independent research company estimates that Bank of America has \$50 billion in litigation reserves for mortgage-related legal costs alone (Reilly 2014). Credit Suisse is an exception.

Litigation reserves are important to investors in gauging the financial health of any corporation. If a company grossly underestimates the need for reserves, nasty surprises drive down the company's market capitalization. That happened to Deutsche Bank in 2013 and 2014. In January 2014, Deutsche Bank announced that its 2013 antitrust penalties had amounted to €2.5 billion, which lowered its total litigation reserves to €2.3 billion at year-end (Reuters 2014). The same thing happened in 2012.

Arrests and Charges Against Executives

At least 46 executives and traders have been arrested, indicted, or sentenced in four of these cartels (Table 3). Half of the indictments are from the *Municipal Derivatives* case. The others are connected with the *LIBOR*, *JPY LIBOR*, and *FOREX* cartels.

Resignations

Two prominent CEOs of prominent banks have resigned in the wake of cartel violations by their institutions. In July 2012, Robert Diamond, the CEO of Barclays Bank and his top lieutenant (COO Jerry del Missier) resigned; these resignations occurred one day after the Bank's Chairman resigned and one week after Barclays paid \$453 million in fines due manipulation of the LIBOR interest rate (Munoz and Colchester 2012). There was evidence that Messrs. Diamond and Missier sent instructions to traders to keep Barclay's interest-rate submissions higher than other banks.

A second resignation was that of Piet Moerland, CEO of Rabobank, in October 2013 (WSJ 2013). Unlike Diamond, Moerland was not personally implicated in LIBOR manipulation in which at least 30 Rabobank traders working in Utrecht, Yokyo, London, and New York are implicated. Moerland came to a Rabobank leadership position from teaching business administration at a university; he was known for having established a professorship of corporate governance at Tilberg University.

Deferred Prosecution Agreements

Several large banks convicted by U.S. authorities have signed Deferred Prosecution Agreements (DPAs). These DPAs are essentially warnings that the U.S. DOJ will criminally prosecute the bank if it is discovered to have repeated any of the same violations during the next few years. Should the DPA be invoked against the parent bank (or its holding company), it may well be forced to liquidate its U.S. assets and cease to operate. DPA's have an advantage similar to a *nolo contendere* plea: the defendant's prosecution cannot be used in invoking extra penalties for recidivism.

JP Morgan Chase Takes the Cake

Unfortunately for its investors and the industry's reputation, JP Morgan's (JPM's) fall from grace has been the steepest.

In 2008-09, JPM was highly regarded for its prudent management of its assets and for the wise leadership of its long-serving CEO, Jamie Dimon (Blinder 2013: 106).⁵² Lauded for its resilience during the Great Recession and the quality of its leadership, JP Morgan has at last count been accused of participating in 16 antitrust violations (a record number).⁵³ Moreover, it has stumbled badly in its response to the events.

JPM was Bernard Madoff's banker for many years. The Bank's handling of news of the Bernard Madoff Ponzi scheme was clumsy. The reports released by federal investigators portray a malfunctioning bureaucracy that, if not criminally complicit, facilitated the fraud. JPM increased its exposure to Madoff's fund in 2007, shortly before reporting "suspicious activity" to the UK regulators and the first arrests occurred 2008. JPM paid penalties of \$2.6 billion in connection with Madoff, and the "risk officer" who approved the increase to Madoff is now chairman of the risk unit.

In October 2013, shortly after its historic \$13-billion antitrust settlement with the U.S. Government (the largest on any corporation to date), JPM revealed that by the end of 2013 it had set aside \$23 billion in litigation reserves for its antitrust problems (Eavis 2014). As a guess by the bank's corporate leaders of how much fines and private settlements will cost JPM in the near term, it is a sobering number.

After years of antitrust investigations and \$20 billion in 2013 penalties, in January 2014, JPM announced that Dimon's compensation would rise 74% to \$20 million. The wisdom and fairness of the action was the subject of scores of press articles (e.g., Silver-Greenberg and Craig 2014).

The Demise of Arthur Andersen Weighs Heavily on U.S. Prosecutors.

"Rather than pursuing these cases under antitrust, the Department of Justice appears to be going to great lengths to avoid doing so" (Peterson 2013).

One of the puzzling aspects of the Big Bank cases is that many of the infringements appear to rise to the level of criminal violations, but the DOJ has so far resisted imposing criminal fines on the parent banks. Rather, large civil fines have been imposed or one of the banks' minor subsidiaries have been criminally fined.

Patterson (2013) explores the puzzle of how the U.S. prosecutors have so far handled antitrust charges in the market-manipulation cases. The puzzle is why the Antitrust Division has been involved in many of the plea agreements in the rate-setting scandals, yet "...none of those settlements has included antitrust liability" (*ibid.*). The Barclays' Statement of Facts does not mention collusion, yet sensitive rate information was passed on by its traders and eagerly solicited. The UBS

⁵² Blinder notes that JPM's balance sheet was called a "fortress" by the industry and that Dimon was an "acclaimed deal maker." During the Great Recession, JPM bought two large entities, Bear Stearns and Washington Mutual. At an "Investor Day" meeting in February 2014, Dimon said "I am so damn proud of this company."

⁵³ I exclude Visa (16) and MasterCard (12) from the rankings because they are banking associations rather than banks proper.

Statement of Facts specifically cites interbank collusion and its traders were charged with criminal price fixing, yet the corporate case ended with a fraud count only against UBS Securities Japan. Similarly, the DOJ filed a Criminal Information against RBS charging both fraud *and price fixing*; again, a Japanese subsidiary pled guilty for fraud only.

As Patterson notes, antitrust prosecutors abroad have had no compunctions in identifying and fining the LIBOR rate-setting conduct as “...collusion between banks who [sic] are supposed to be competing with each other” (Almunia 2012).

So, why the hesitancy of the Antitrust Division in bringing criminal antitrust charges against Barclays, UBS, RBS, and Rabobank? A leading explanation is that the DOJ wants to avoid “another Andersen” (see Box below). Were it to charge successfully a bank operating in the United States for a felony, that bank would have to exit the market and cause “collateral damage” to employees and market concentration (Peterson 2013).

The Demise of Arthur Andersen LLP

In 2002 Arthur Andersen was a Chicago-based multinational accounting partnership. In 2001 the firm had 85,000 employees, enjoyed revenues of \$9.3 billion, and had seen those revenues had tripled since 1992. It was one of the “Big Five” international accounting firms.

Auditors from Anderson’s office in Houston, Texas were identified as responsible for and complicit in a gigantic accounting fraud after the collapse of Enron Corporation, which claimed more than \$100 billion in revenues in its 2001 SEC report to shareholders, and was at the time the largest corporate bankruptcy in the Nation’s history. Worse, two Anderson officers were convicted in June 2002 of a felony, obstruction of justice. Because the SEC cannot accept audits from felons, Anderson was forced to surrender its CPA licenses and shed all its accounting clients. A dozen years later, a rump Arthur Anderson LLP is today involved in the “orderly dissolution” of the company.

The world went from five to four multinational accounting firms big enough to serve the largest corporations, a dangerously small number to generate competition (Foer and Ascher 2011).

Class

**Problems for
and Direct
Actions**

“Excluding an entire segment of an important market from antitrust law for fear of ‘collateral damage’ is questionable policy” (Peterson 2012).

One effect of holding back from the use of the full force of the antitrust laws is to reduce cartel deterrence by creating hurdles to private damages actions. By not obtaining criminal plea agreements on U.S. units of the big banks, there is no *prima facie* evidence of collusion to present in private cases. In March 2012, a private suit seeking LIBOR-related damages by direct purchasers was dismissed by a federal court. The court's reasoning hinged on the absence of proven antitrust injury. In essence, the decision asserted that the process of banks *individually* submitting rate quotes to the British Bankers Association (BBA) was by design not a competitive one. A critique of this decision suggests that, to the contrary, LIBOR was a per se violation by traders masquerading as a joint venture (Vaheesan 2012). If this precedent holds, private LIBOR suits will not have the advantages of the normal follow-on suits.⁵⁴

Suits by Freddy Mac have included the BBA as a defendant. By attacking the entire LIBOR structure and the harm created by the fraudulent submission of some of its members, such suits may have greater success for plaintiffs (Peterson 2012).

What Is the Future of Price-Fixing Penalties?

One indicator of future liability of the big banks is their recent total litigation reserves. Even when reported, these reserves have several limitations (Barrett 2002). Perhaps because auditors' communications are not privileged, such disclosures can be used by plaintiffs in damages lawsuits as admissions of guilt. Additionally, litigation reserves will usually include non-antitrust legal contingencies. For example, since 2008, the Bank of America has paid \$50 billion into its reserves for mortgage-related legal costs (Eavis 2014). Consider this statement in JPMorgan Chase's 2012 Annual Report to stockholders:

"The Firm has established reserves for several hundred of its currently outstanding legal proceedings. The Firm accrues for potential liability arising from such proceedings when it is probable that such liability has been incurred and the amount of the loss can be reasonably estimated.... During the years ended December 31, 2012, 2011 and 2010, the Firm incurred \$5.0 billion, \$4.9 billion and \$7.4 billion, respectively, of litigation expense. There is no assurance that the Firm's litigation reserves will not need to be adjusted in the future" (JPMorgan 2013: 324).

Some banks report on *additions* to their reserves, but most do not report on withdrawals.⁵⁵ The main problem is that, despite their importance in assessing a bank's long-term survival, few banks

⁵⁴ Peterson (2013) suggests that suits against the BBA itself and its member banks would have greater success, because collectively the members were responsible for oversight of the LIBOR process and its accuracy.

⁵⁵ The SEC has issued guidance memos to the industry on other reserves in the past, but none on litigation reserves. Accounting rules are discretionary.

report their *total* litigation reserves. There is a strong tendency for companies to avoid disclosing quantitative dollar reserves (as low as 10% do so) (Hennes 2008). When a bank does report on total litigation reserves, it is major news. In late 2013, JPMorgan Chase reported it had \$23 billion in such reserves, just before it agreed to pay \$13 billion in fines to the DOJ.

A second approach to estimating future litigation payouts is to rely upon investment analysts' of liability of banks for future penalties for specific antitrust violations. Unfortunately, when these investigations and private lawsuits are at an early stage, estimates can vary widely. For example, in September 2012, when a few major banks revealed that they were targets in the *LIBOR* rate-manipulation case, analysts estimated that defendants were on the hook for between around \$10 billion to as high as \$200 billion (Reilly 2012). Few of these estimates are public.

Preliminary Conclusions

I find that there have been more than 400 instances of large banks involved in at least 63 separate illegal conspiracies to manipulate markets. These 63 markets are huge in terms of affected revenues or assets and many are global in scope. As of January 2014, the total amount of monetary penalties imposed is \$28 billion. As many investigations are incomplete, I expect that total to climb to \$40 billion within the next three years. Moreover, several banks have also had serious legal non-monetary restrictions imposed.

Unfortunately for U.S. taxpayers, who will ultimately pay the billions in civil fines is up for grabs. Criminal fines are not a deductible business expense, but civil fines are tax loopholes through which asteroids can pass:

“If individual taxpayers are arrested, admit guilt and reach a civil settlement with the government, they cannot deduct the costs from their returns. But amazingly, a company is allowed to claim those costs as a business expense. JPMorgan Chase, for example, which has agreed to pay billions of dollars in fines for various transgressions, can deduct a large portion — and all the legal expenses — from its taxes.

“Ordinary citizens don’t deduct their parking tickets or library fines from their taxes,” U.S. PIRG, the federation of state public interest research groups, said in a statement. ‘Corporations like JPMorgan shouldn’t be able to deduct their settlements for wrongdoing either. The settlement loophole costs taxpayers billions each year’ ” (Sorkin 2014).

Most nations have a central bank and in many of those countries the central bank issues charters for banks and bank holding companies acts as a regulator over many, if not all, activities in the banking sector. So what role have these central banks played?

In the United States, the Federal Reserve Bank (“the Fed”) has largely stood on the sidelines. This may have changed in early 2013 when press reports leaked information about the existence of a probe by the Fed of U.S. banks with respect to alleged bid rigging of FOREX trading (Geiger and

Gage 2013). The Fed has the power to fine banks if lack of supervision allowed employees to manipulate currencies trading, which is otherwise a completely unregulated activity. In the UK, the Bank of England itself has been implicated in market manipulation. In Honk Kong, what is effectively the central bank has negotiated a consent decree with guilty banks.

The United States Treasury and similar institutions abroad mostly saved their big banks from collapse in 2008 by partial or full nationalizations. Others, like Ireland, essentially took on government/taxpayer liability in full. In Iceland, its three buccaneering banks were simply allowed to fail in October 2008, leading to a catastrophic decline in the national currency and economy and a quintupling of the unemployment rate (Popper 2014). Four executives of Kaupthing, the largest pre-crisis bank, were sentenced to multi-year prison terms in December 2013. The Icelandic banking sector is a timid shadow of its former self, and popular discontent is still widespread (See photo below).



Icelandic Sculptor Sees Bankers as Blockheads

The competitive problems associated with interbank credit- and debit-card payments in concentrated national banking sectors were the topic of discussion at an OECD multilateral meeting. A summary report says:

“There is no consensus among economists and policymakers on what constitutes an efficient fee structure for card-based payments, and it is not clear if payment competition

might do the trick. Regulation should be geared towards removing barriers of entry in payment markets and banning merchant (pricing) restrictions. ... Many [OECD] members are investigating these markets, and EU jurisdictions are implementing the EU Payments Service Directive....” (OECD 2012: i).

These huge and sometimes intertwined prosecutions of large multinational banks is straining the resources of the major antitrust authorities. For example, a July 2, 2013 article in the *Financial Times* reported that the Serious Fraud Office was out of money and had to turn down the opportunity to launch a criminal investigation in *LIBOR*.

Perhaps behavior modification has begun. There is little doubt that, contrary to their protestations, cartel fines and individual convictions are having effects on the big banks beyond often fleeting losses of reputation. At a time when most economies have seen robust recoveries, some banks have underestimated their needs for litigation reserves, and analysts have been pointing to antitrust penalties as major causes of shrinking profits. Other banks have cut thousands of jobs, reduced bonuses,⁵⁶ divested assets, or retrenched in other ways.

⁵⁶ Barclays announced plans to cut 12,000 jobs in 2013, but ironically the layoffs helped to raise bonuses for the lucky employees still at the bank (Slater and Scuffham 2014).

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TABLES

Table 1. Largest Banks by Market Capitalization, Billion U.S. Dollars, 2008 and 2013.

Rank 2013	Bank (Bad Banks in Bold) ^a	Coun- try	Mkt. Cap. 2013	Rank 2008	Mkt. Cap. 2008	Notes
1	Industrial & Commercial bank of China (ICBC)	China	233.6	1	173.9	IPO 2006
2	China Construction Bank	China	207.6	2	128.3	IPO 2005
3	HSBC Holdings	UK	202.4	4	115.2	
4	Wells Fargo & Co	US	200.2	6	98.0	
5	JP Morgan Chase & Co	US	187.6	3	117.7	
6	Agricultural Bank of China	China	142.9	--	--	IPO 2010
7	Citigroup	US	141.8	16	36.6	
8	Bank of America	US	133.2	8	70.7	
9	Bank of China	China	130.0	5	98.2	
10	Commonwealth Bank of Australia	Australia	122.3	25	29.6	
11	Westpac Banking Corporation	Australia	108.5	18	34.1	
12	Mitsubishi UFJ Financial Group (MUFG)	Japan	96.37	9	70.1	
13	Australia and New Zealand Banking (ANZ)	Australia	90.37	35	23.0	
14	Royal Bank of Canada	Canada	87.17	14	40.9	
15	National Australia Bank	Australia	82.38	29	27.2	
16	Itau Unibanco	Brazil	77.37	22	30.8	
17	Banco Santander	Spain	75.79	7	75.0	
18	Toronto-Dominion Bank	Canada	75.67	24	29.8	
19	American Express	US	75.57	--	--	new
20	Sberbank of Russia	Russia	71.45	--	--	State
21	Banco Bradesco	Brazil	71.00	27	28.0	
22	BNP Paribas	France	68.83	15	38.3	
23	Bank of Nova Scotia (Scotiabank)	Canada	68.83	30	27.2	
24	Goldman Sachs Group	US	68.00	--	--	new
25	UBS AG	Switzer- land	67.88	13	40.9	
26	Sumitomo Mitsui Financial	Japan	66.85	19	32.7	
27	US Bancorp	US	62.03	12	43.6	
28	Standard Chartered	UK	60.46	34	23.9	
29	Lloyds Banking Group	UK	59.89	--	--	UK

						rescue
30	Bank of Communications	China	57.28	--	--	
31	Barclays Plc	UK	57.03	--	--	
32	BBVA	Spain	53.40	10	45.1	
33	Mizuho Financial Group	Japan	53.15	21	31.8	
34	Royal Bank of Scotland Group (RBS)/Govt. of UK	UK	53.11	28	28.0	Top 8 no 2013 bonuses
35	Nordea Bank	Sweden	47.94	--	--	
36	Deutsche Bank AG	Germany	46.61	--	--	
37	China Minsheng Banking Corp (CMBC)	China	44.02	--	--	
38	Credit Suisse Group	Switzerland	43.44	23	30.4	
39	Morgan Stanley	US	43.44	--	--	
40	China Merchants Bank	China	43.11	31	26.4	
41	Bank of Montreal (BMO)	Canada	40.86	--	--	
42	Industrial Bank Co.	China	37.52	--	--	IPO 2006
43	BOC Hong Kong	Hong Kong	36.37	--	--	
44	Banco do Brasil	Brazil	35.90	--	--	
45	PNC Financial Services	US	35.87	--	--	
46	Capital One Financial Corp	US	33.64	--	--	
47	Bank of New York Mellon	US	32.79	--	--	
48	Canadian Imperial Bank of Commerce	Canada	31.98	--	--	
49	Hang Seng Bank	Hong Kong	31.98	32	25.1	
50	China Citic Bank	China	30.45	--	--	
-- = Below 35 th or new since 2008. State=Large State ownership Source: www.relbanks.com and Table 3 below a) Were it an independent entity, GE Capital would be in the top 20.						

Table 2. 63 Banking and Finance Markets Cartels, Penalized or Under Investigation, by Date of Discovery, 1985- December 2013

Market, Geographic Location	Firms in Cartel	Lead Authority	Discovery Date	Collusion		Money Penalties (\$ mil.)	Notes ^a
				Start Date	End Date		
Bank credit-card interchange fees, EU	2	EC	1985	1985?	2010	0.00	consent
Bank debit-card interchange fees, CA	2	CA	1992	early 1990s	1995	0.00	Fee cap of 0% ordered
Eurocheque, EU	2	EC	1992	1983	1990	7.80	
Bank ATM fees, Cartes Bancaires Group, FR	13	FR	1993	1990	2012	0	Fee cap of 0% ordered
Bank ATM fees, Visa and MasterCard, FR	2	FR	1993	1990	2013	0	Fee cap ordered
Bank Debit-card interchange fees, Cartes Bancaires, FR	13	FR	1993	1969	2012	0	Fee cap ordered
Bank Payment-card interchange fees, Cartes Bancaires, FR	13	FR	1993	1990	2012	0	Fee cap ordered
Bank payment-card interchange fees, Visa & MasterCard, FR	2	FR	1993	1990	2013	0	Fee cap ordered
Securities, NASDAQ market makers, US	27	US PVT	1994	1989	1994	1,027.00	
Bank credit-card interchange fees 2, KR	4	KR	1997	1998	1998	17.05	
Bank cards' transaction fees 1 ("Wal-Mart" case), US	2	US PVT	1998	1992	2003	3,383.00	
Bank cards' transaction fees 2 ("AMEX & Discover"), US	2	US PVT	1998	1992	2003	6,650.00	
Lombard Club banks, AT	8	EC	1998	1994	1998	117.30	
Bank cards' transaction fees 3 ("Merchant Discount"), US	18	US	1999	2004	2011	5,700.00	
Bank credit-card interchange fees, AU	2	AU	1999	1990	2003	0.00	consent
Euro-Zone bank fees	6	EC	1999	1998	2001	89.70	
Bank credit-card interchange fees 1, KR	20	KR	2000	1990	2005	6.17	
Bank credit-card interchange fees, DE	3	DE	2000	1990	?	0.00	pending

Bank credit-card interchange fees, UK	2	UK	2000	1990	2004	0.00	2nd probe started 2/2010
Bank debit-card interchange fees, AU	6	AU	2000	1980s	1994	0.00	consent
Currency conversion fees, charge cards, US	11	US	2001	1996	2005	403.00	
Bank credit-card interchange fees 1, CH	7	CH	2003	2005	2009	0.00	consent
Bank credit-card interchange fees, ES	3	ES	2003	1990	2005	0.00	consent
Bank debit-card interchange fees, ES	3	ES	2003	early 1990s	2005	0.00	consent
Bank credit-card interchange fees 3, KR	12	KR	2004	2004	2005	10.00	
Bank interest rates, IL	5	IL	2004	1998	2005	77.00	pending
Bank credit-card interchange fees, IL	3	IL	2005	1998	2006	0.00	consent
Private equity buyouts, US	14	US	2006	2003	2007		pending
Bank payment-card interchange fees, HU	9	HU	2006	1996	2009	10.40	
Bank credit-card interchange fees, NZ	9	NZ	2006	1990	2009	0.00	
Municipal Bond Derivatives, US	50	US	2006	1992	2011	913.00	23 execs
Bank credit-card interchange fees, FI	3	FI	2007	1990		0.00	consent
Bank payment cards, Iceland	3	IS	2007	2002	2006	4.69	
Banks, commercial loans, NL	3	NL	2007		2008 e		pending
Bank credit-card interchange fees 2, CH	7	CH	2008	2009	2010	0.00	consent
Bank interest rates, PK	42	PK	2008	2008	2008	3.03	
Banking, loan pricing, UK	18	UK	2008	2007	2008	45.20	
Silver futures contracts, US	2	US	2008	2008		0.00	
Bank interbank fees, IT	2	IT	2009		2009 e		pending
Banking, Bulgaria	4	BG	2009		2010 e		pending
Banks, electronic foreign currency services, SK	3	SK	2009	2007	2009	14.20	
ATM access fees, PK	28	PK	2010			12.01	
Bank debit-card interchange fees, EU	2	EC	2010	early 1990s	2010	0.00	consent
Bank interbank check fee, FR	11	FR	2010	2002	2007	503.60	
Credit-default-swaps	16	US	2010	2006	2012		pending

(CDS) exchanges, US & EU							
LIBOR Interest Rate (& 4 Related Rates), Global	13	EC	2010	2005	2010	3,655.00	9 execs
ATM access fees, US	2+	US	2011	?	?	0.00	Dismissed, but on appeal
Bank credit-card interchange fees 4, KR	20	KR	2011	2010	2011	0.00	
Banking, interchange fees, Latvia	22	LV	2011	2002	2011	10.85	
Banks, interest and credit-card rates, TR	12	TR	2011		2013?	486.00	
Banks, mortgage interest rates, Forints, HU	11	HU	2011	2011	2013	42.23	
Credit Default Swaps (CDS) 1, EU	18	US	2011			0.00	
Credit Default Swaps (CDS) 2, EU	10	US	2011			0.00	
EURIBOR interest rate derivatives, Global	7	EC	2011	2005	2008	1,414.00	
JPY LIBOR interest rate derivatives, Global	7	EC	2011	2007	2010	1,520.00	3 execs
Banks & brokerage, CD Rates, KR	4	KR	2012	?	?		pending
Aluminum storage, Global	4	US	2013	2010	2013		pending
Banks, PT	2+	PT	2013	?	?		pending
FOREX (Foreign Currency Exchange Markets), Global	9	UK	2013	?	?		1 exec, pending
London gold fix, Global	5	US CFTC	2013	?	?		pending
London silver fix, Global	3	US CFTC	2013	?	?		pending
Oil Price Index (Platt's Brent Crude), Global	9	EC	2013	2002	2013		pending
Interest Rates, Swiss Franc	9	EC USFTC	2013	2002	2013		pending
Total 63 Cartels	556 +					\$26,122.2	46 execs, 19 consent decrees

Source: John M. Connor, *Private International Cartels* Spreadsheet (January 2014)

a) Consent = shorthand for consent decree or similar mandatory conduct restriction but no monetary penalty. Number of known (named) executives sentenced or indicted and awaiting sentencing.

? = Unknown

+ = Minimum, probably larger, especially those showing "2+" above.

Note: In some of the cases above, decisions are under appeal. Only decisions by antitrust authorities are listed.

Table 2A. Summary of 63 Banking- and Finance-Markets Cartels, Penalized or Under Investigation, by Type of Conduct and Location of Activity, 1985- December 2013					
Conduct Type, Location	No. of Cartels	No. of Firms	Money Penalties (\$ mil.)	Penalty/ Cartel (\$ mil.)	Firms/ Cartel
Type:					
Bid Rigging	2	63	913.0	456.5	32.0
Classic Price Fixing	52	461+	18,620.2	358.1	8.9
Price Index Manipulation	6	35	6,589.0	1098.2	5.8
Commodities	3	12	0	NA	4.0
Location:					
Asian nations	11	165+	611.0	55.5	15.0
Eastern European nations	8	49	78.0	9.8	6.1
Global	12	106+	5,689.0	474.1	8.8
USA & Canada	10	134+	18,076.0	1,087.6	13.0
Western European nations	22	100+	768.0	33.9	4.5
TOTAL	63	577 +	26,122.0	414.6	9.2

Table 3. 222 Named Banks Participating in Cartels, Penalized or Under Investigation, 1990-2013						
Bank (Top 50 in Bold) ^a	Number of Cartels Alleged	Head-quarters	Lead Author-ities	Bank-ing Cartels	Bank Penalties (\$ mil.)	Notes ^c
Anonymous, smaller banks ^b	8	Many	EC	8	10,033.780	6 consent
A.G. Edwards	1	US	US	1	?	
AIG (American Intl. Group)	6	US	US	6	1,731.940	
Akbank TAS	1	TR	TR	1	73.400	
Akciju Comercbanka Baltikums	1	LV	LV	1	0.003	
Albaraka Bank Pakistan Limited	1	PK	PK	1	0.156	
Allied Bank	1	PK	PK	1	0.370	
American Express	3	US	DE FI US	2	49.500	1 consent
Apollo Group	1	US	US	1	?	
AS Latvijas Biznesa Bank	1	LV	LV	1	0.001	
Atlas Bank	1	PK	PK	1	0.370	
Australia and New Zealand Banking Group Limited	2	AU	AU NZ	2	0.000	2 consent
Bain Capital Partners	1	US	US	1	?	

Baltic International Bank	1	LV	LV	1	0.005	
Banco Bradesco	1	BR	BR	1	?	
Bank Al Habib Limited	1	PK	PK	1	0.780	
Bank Al-Falah Limited	1	PK	PK	1	0.780	
Bank Austria AG	1	AT	EC	1	28.700	
Bank fuer Arbeit und Wissenschaft	1	AT	EC	1	7.200	
Bank Hapoalim/Arison Family	1	IL	IL	1	21.200	
Bank Islami	1	PK	PK	1	0.156	
Bank Leumi	1	IL	IL	1	21.200	
Bank of America	12	US	US EC	12	687.900	
Bank of Nova Scotia	2	CA	US	2	?	
Banque de France/Govt. of France	3	FR	FR	1	0.000	3 consent
Banque Postale	3	FR	FR	1	0.000	3 consent
Banque Valartis	2	CH	CH	2	0.000	2 consent
Barclays Bank PLC	13	UK	EC PK UK US USPVT	13	664.489	2 amnesty
Bayerische Hypo- und Vereinsbank	1	DE	EC	1	24.900	
Bayerische Landesbank	3	DE	HU EC	2	2.938	
Bayern BANK/State of Barveria	1	DE	HU	1	0.460	
BC Card Co.	3	KR	KR	3	2.680	
Bear Stearns	1	US	US EC	1	?	
Bendigo Bank	1	AU	AU	1	0.000	1 consent
Bestway (Holdings) Ltd.	1	UK	PK	1	0.780	
Blackstone Group	1	US	US	1	?	
BNP Paribas	3	FR	FR EC	2	?	3 consent
BPCE (Banques Populaires Caisses d'Epargne)	3	FR	FR	2	0.000	3 consent
Budapest Bank HUF	1	HU	HU	1	0.837	
Burj Bank Limited	1	PK	PK	1	0.156	
Capital One Financial (CAF)	2	US	US	5	115.000	3 consent
Cartes Bancaires Group	5	FR	FR	2	0.000	3 consent
CDR Financial Products	1	US	US	1	?	
Ceskoslovenska Obchodna Banka	1	SK	SK	1	4.440	
China Development Bank	1	CN	US	1	?	
CIC (Crédit Industriel et Commercial)	1	FR	FR	1	27.200	
Citadele Bank/Govt of Latvia	1	LV	LV	1	2.410	
Citigroup	13	US	HU PK US EC	13	378.505	

Commerzbank AG	2	DE	EC	2	24.900	
Commonwealth Bank of Australia	2	AU	AU NZ	1	0.000	2 consent
Consorzio Bancomat	1	IT	IT	1	?	
Corner Bank AG	2	CH	CH	2	0.000	2 consent
Credit Agricole	3	FR	FR US EC	3	108.500	
Credit du Nord	4	FR	FR	1	9.100	3 consent
Credit Mutuel	4	FR	FR	1	59.400	3 consent
Credit Suisse Group AG	9	CH	US EC CH	9	72.738	
Deutsche Bank AG	12	DE	US PK EC	12	721.100	
Deutsche Verkehrsbank AG	1	DE	EC	1	12.500	
Dexia SA	1	BE	TR	2	9.800	
Discount Bank+Beinleumi Bank	1	IL	IL	1	0.000	1 consent
DnB Nordbank/DNB A/S	1	NO	LV	1	0.330	
Dresdner Bank AG	1	DE	EC	1	24.900	
Dubai Islamic Bank	2	DUBAI	PK	2	0.156	
Emirates Global Islamic Bank	1	UAE	PK	1	0.000	
Erste Group Bank AG	4	AT	HU SK AT	4	48.500	
Euro6000 SA	2	ES	ES	1	0.000	2 consent
Eurocheque Intl.	1	EU	EU	1	1.300	
Faysal Bank Limited	1	PK	PK	1	0.780	
Feld Winters Financial LLC	1	US	US	1	?	
Fifth Third Bancorp	2	US	US	2	115.000	
Financial Guarantee Insurance	1	US	US	1	23.000	
Finansbank AS	1	?	TR	1	23.000	
First International Bank of Israel	1	IL	IL	1	8.000	
First National Bank of Omaha	1	US	US	1	115.000	
First Southwest Co	1	US	US	1		
Fjölgreiðslumiðlun	1	IS	IS	1	2.010	
French Association of Banks - AFB	3	FR	FR		0.000	3 consent
Furman Selz	1	US	US	1	?	
General Electric Co./GE Capital	3	US	CH LT	1	119.437	
Genworth Financial Inc.	1	US	US	1	?	
George K. Baum & Co.	1	US	US	1	?	
Goldman Sachs Group	6	US	US EC	6	90.005	
Greiðslumiðlun	1	IS	IS	1	2.250	
Groupe BPCE	1	FR	FR	1	118.900	
Groupe des cartes bancaire	1	FR	FR	1	6.500	

Gunvor Group Ltd.	1	CY	US	1	?	
Habib Bank Limited	2	PK	PK	2	1.150	
Habib Metropolitan Bank Limited	1	PK	PK	1	0.156	
Halk Bank	1	TR	TR	1	38.200	
Hana Financial Group	1	KR	KR	1	?	
Hapoalim Bank	1	IL	IL	1	0.000	1 consent
HKEx	1	UK	US EC	1	?	
HSBC	16	UK	US FR TR UK	16	156.070	3 consent
Hyundai Motor + GE Capital	2	KR	KR	2	0.390	
ibrahim Fibres Ltd.	1	PK	PK	1	0.780	
ING Group	5	NL	NL	5	7.050	
Interac Direct Payment system	1	CA	CA	1	0.000	1 consent
IntercontinentalExchange (ICE)	2	US	EC US	2	?	
International Swaps and Derivatives Association (ISDA)	1	US	EC US	1	?	
Intesa Sanpaolo Group	2	IT	HU	1	4.500	
Investment Mgmt. Advisory Group	1	US	US	1	?	
Israel Discount Bank/ Bronfman Family	1	IL	IL	1	21.200	
J.C. Bradford	1	US	US	1	12.000	
JPMorgan Chase & Co.	16	US	US EC	16	801.000	
JS Bank Limited	1	PK	PK	1	0.156	
K and H Bank HUF	1	HU	HU	1	4.470	
Kashf Micro Finance Bank	1	PK	PK	1	0.156	
KBC Bank and Insurance Group	1	BE	HU	1	0.700	
Khadim Ali Shah Bukhari Bank Limited	1	PK	PK	1	0.156	
Kinsell Newcome & De Dios	1	US	US	1	?	
Koç Financial Services (KFS)	2	TR	TR	1	64.000	
Kohlberg Kravis Roberts	1	US	US	1	?	
Kookmin Bank	2	KR	KR	2	5.970	
Korea Exchange Credit Card Div.	2	KR	KR	2	3.140	
Kreditkort	1	IS	IS	1	8.950	
La Banque Postale	1	FR	FR	1	43.000	
Latvijas Hipoteku un zemes banka	1	LV	LV	1	0.110	
Latvijas Krajbanka	1	LV	LV	1	0.510	
LCL SA (f/k/a Le Crédit Lyonnaise)	4	FR	FR	4	27.400	3 consent

Legg Mason	1	US	US	1	?	
Leumi Bank/State of Israel	1	IL	IL	1	0.000	1 consent
LG Corp.	2	KR	KR	2	5.990	
Lloyds Banking Group	3	UK	UK	3	1.100	
Lotte Financial/Lotte Co.	1	KR	KR	1	?	
LTB Bank	1	Latvia	LT	1	0.001	
Magyar Takarekszovetkezeti Bank HUF	1	HU	HU	1	0.005	
Markit Group Ltd.	2	UK	US EC	2	?	
MasterCard Inc. (and Overseas Branches)	14	US	US AU DE FI FR HU NZ UK EC	10?	885.600	4 consent
Mayer & Schweitzer	1	US	US	1	55.000	
MCB Bank	1	PK	PK	1	0.370	
Meezan Bank Limited	1	PK	PK	1	0.156	
Mercuria Energy Group Ltd	1	CH	US	1	?	
Misirow Financial	1	JP	US	1	?	
Mitsubishi UFJ Financial Group (MUFG) (f/k/a Bank of Tokyo-Mitsubishi UFJ)	1	JP	EC	1	?	
Mizrahi Tefahot Bank	1	IL	IL	1	5.300	
Mizuho Financial Group Inc.	1	US	US EC	1	?	
Morgan Stanley	7	US	US EC	5	84.500	
Nash Weiss	1	US	US	1	?	
National Australia Bank	2	AU	AU NZ	2	0.000	2 consent
National Bank	1	PK	PK	1	0.370	
National Bank of Greece	1	GR	BG	1	?	
Natixis Groupe SA	1	FR	US	1	?	
New Zealand Post/Govt of New Zealand	1	NZ	NZ	1	0.000	1 consent
NIB Bank Limited/Temasek Holdings (Govt. of Singapore 66%)	1	SG	PK	1	0.780	
Nordea Bank	1	SE	Latvia	1	0.310	
Nordvik Bank	1	LV	Latvia	1	0.050	
Norinchukin Bank	1	JP	EC US	1	?	
Oberösterreich Landesbank	1	AT	EC	1	1.400	
Oesterreicher Postparkkasse AG	1	AT	AT	1	7.200	
Oesterreicher Volsbanken AG	1	AT	AT	1	7.200	

Olde Discount	1	US	US	1	18.000	
Oman Intl. Bank	1	OM	PK	1	0.000	
Oppenheimer & Co.	1	US	US	1	24.000	
OTP Bank	3	HU	HU BG	3	17.920	
PackerKiss Securities Inc	1	US	US	1	?	
Paine Webber	1	US	US	1	60.000	
Pakistan Banks Association	1	PK	PK	1	0.440	
Piper Jaffray	1	US	US	1	?	
PNB-Paribas	2	FR	FR	2	82.800	1 consent
PNC Financial Services Group	3	US	US	3	230.000	
Portigon Financial Services AG (f/k/a WestLB AG)	1	DE	US EC	1	?	
Post Finance	2	CH	CH	1	0.000	2 consent
PrivatBank	1	UK	LV	1	0.110	
Providence Equity Partners	1	US	US	1	?	
Prudential Financial	2	US	US	2	67.000	
R P Martin	2	UK	US EC	2	0.355	
Rabobank	2	NL	NL US EU	2	800.000	
Raiffeisen Zentralbank Oesterreich/RZB Group	4	AT	EU HU BG	4	32.760	
RBS Securities Japan/RBS (Royal Bank of Scotland)/Govt. of UK	9	UK	UK US EC NL FR JP PK	8	1,142.400	1 x recidivist
Regionala Investiciju Banka	1	LV	LV	1	0.003	
Rietumu Bank	1	LV	LV	1	0.210	
Robinson-Humphrey	1	US	US	1	12.000	
Royal Bank of Canada	1	CA	US EC	1	?	
Salomon Smith Barney	1	US	US	1	84.000	
Samba Bank Limited	1	PK	PK	1	0.156	
Samsung Group	4	KR	KR	4	140.784	
Saudi Pak Bank	1	PK	PK	1	1.160	
SEB Bank	1	LV	LV	1		
Security Capital Assurance Ltd	1	BM	US	1	?	
SEVIRE	2	ES	ES	2	0.000	2 consent
Shinhan Financial Group	1	KR	KR	2	2.800	
Silk Bank Limited	1	PK	PK	1	0.156	
Silver Lake Technology Management	1	US	US	1	?	
Sindh Bank Limited	1	PK	PK	1	0.156	
SISTEMA 4B	2	ES	ES	2	0.000	2 consent
SMP Bank	1	LV	LV	1	0.004	
Société Generale SA	10	FR	FR EC US	10	674.700	4 consent

Soneri Bank Limited	1	PK	PK	1	0.780	
Sound Capital Management Inc.	1	US	US	1	?	
Standard Chartered Bank Pakistan Limited/Standard Chartered	1	UK	PK	1	0.780	
State Bank of Pakistan	1	PK	PK	1	0.780	
Sumitomo Mitsui Banking Corp.	1	JP	US EC	1	?	
Summit Bank Limited	1	PK	PK	1	0.156	
SunTrust Banks	2	US	US	2	115.000	
Swedbank	1	SE	Latvia	1	5.580	
Tameer Microfinance Bank Limited	1	PK	PK	1	0.156	
The Bank of Khyber	1	PK	PK	1	0.156	
The Bank of Punjab	1	PK	PK	1	0.156	
Thomas H. Lee Partners	1	US	US	1	?	
Tong Yang Group (TYG)	1	KR	KR	1	0.390	
TPG Capital (Texas Pacific Group)	1	US	US	1	?	
Tradeweb Markets LLC	1	US	US EC	1	?	
Trafigura Beheer BV	1	NL	US EC	1	?	
Trasta Comercbanka	1	LV	LV	1	0.005	
Trinity Funding Co. LLC	1	US	US	1	?	
Troster Singer	1	US	US	1	66.000	
TSB Community Trust	1	NZ	NZ	1	0.000	1 consent
Türk Ekonomi Bankası (TEB)	1	TR	TR	1	4.500	
Türkiye Bankası (Isbank)	1	TR	TR	1	62.500	
Türkiye Garanti Bankası	1	TR	TR	1	91.000	
U.S. Bancorp	2	US	US	2	115.000	
UBS AG	11	CH	CH US EC	10	1,424.400	2 consent
UniCredit SpA	3	IT	HU BG Latvia	3	1.401	
United Bank	1	PK	PK	1	0.370	
VEF Bank	1	LV	LV	1	0.001	
Vereins- und Westbank AG	1	DE	EC	1	2.500	
Visa Inc. (and Overseas Branches)	14	US	FR CH US AU DE CA FI HU UK	14	4,527.300	2 consent
Vseobecna Uverova Banka	1	SK	SK	1	5.310	
Warehouse Financial Services Ltd.	1	NZ	NZ	1	0.000	1 consent

Wells Fargo	7	US	US EC	7	704.600	
Westpac Banking Corp.	2	AU	AU NZ	2	0.000	2 consent
Winters & Co. Advisors LLC	1	US	US	1	?	
Ziraat Bank/Govt. of Turkey	1	TR	TR	1	63.200	
SUBTOTAL: 29 Banks in Top 50	149			149	6839.2	
SUBTOTAL: 29 Banks in Top 50 plus Visa & MasterCard	177			177	12,252.1	
TOTAL OF 222 COMPANIES	444 violations	--	--	431	26,122.2	110 consent
<p>a) Includes a few non-bank companies like brokerage firms and system operators alleged to have participated in the price-fixing or market manipulation cartels in Table 2 above. In some legal cases, defendants were penalized but not named publicly by the authorities. I include amnesty recipients when they can be identified. Visa and MasterCard are bolded, because they were controlled at the times they infringed on competition laws by management committees composed largely the Big 50.</p> <p>b) Some antitrust authorities impose fines or consent decrees on banks anonymously. In other cases, a bank-owned organization is penalized. For example, 22,000 U.S. banks, each of which ended up with indirect monetary liability, own Visa and MasterCard in the United States.</p> <p>c) “Consent” means a non-monetary restriction on conduct was imposed (similar to what is called a “consent decree” in the U.S. “N x Recidivist” indicates which banks are recidivists in non-banking cartels and N is the number of instances.</p> <p>? = Amount of penalties unknown</p> <p>Consent = shorthand for consent decree or similar mandatory conduct restriction but no monetary penalty.</p> <p>Source: John M. Connor, <i>Private International Cartels</i> Spreadsheet (January 2014)</p>						