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Financial Benchmark Control as Monopoly Power

By SHARON E. FOSTER*

I. INTRODUCTION

Financial benchmarks control the price of an underlying asset. Control of price may evidence monopolization. This article examines financial benchmarks as currently utilized in financial markets, explains how financial benchmarks control price, establishes that financial benchmarks control price and explores United States antitrust law as it relates to monopolization by control of price. Additionally, this article extrapolates from the above issues of monopolization financial benchmark reform viability.

As used in this article, a benchmark is defined as: prices, rates, indices or figures that are: a) Made available to users, whether free of charge or on payment; b) Calculated periodically, entirely or partially by the application of a formula or another method of calculation to, or an assessment of the value of, one or more underlying assets, prices or certain other data, including estimated prices, rates or other values, or surveys; and c) Used for reference for purposes that include one or more of the following: determining the interest payable, or other sums due, under loan agreements or under other financial contracts or instruments; determining the price at which a financial instrument may be bought or sold or traded or redeemed, or the value of a financial instrument; and/or measuring the performance of a financial instrument.¹

The financial benchmarks discussed in this article include financial market benchmarks, such as interest rate benchmarks, foreign exchange benchmarks and certain commodity market

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1. Consultation Report, Int'l Org. of Sec. Comm'ns, Financial Benchmarks: Onnig H. Dombalagian, Chasing the Tape: Information Law and Policy In Capital Markets (89 (2015) CR01/13, January 2013, at Annex A, p. 48), <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD399.pdf>.

benchmarks. Major financial market benchmarks set prices in those markets and, hence, exert significant market power. While financial benchmark abuse through manipulation undermines market integrity, it is important to understand that financial benchmarks do serve important functions in financial markets provided they are not manipulated.

Financial benchmarks are important for setting price in financial markets because, when properly applied, they reduce costs and risks thus enhancing efficiency. As discussed in section II, it would be impossible to quickly determine the real market price for many financial products due to the vast size and complexity of many of these markets. Accordingly, this article does not argue for the elimination of financial benchmarks, but rather a more aggressive use of existing antitrust laws to provide a sufficient negative incentive to financial benchmark manipulation.

Even if financial benchmarks are free from manipulation, it is important to understand that financial benchmarks are not objective; there is a fallible human factor involved. This is important because we should not be led to believe that financial benchmarks impart information using an infallible mathematical methodology based purely on impartial data. As discussed in section III, the human factor can intercede at various stages in the production of financial benchmarks. Unregulated or underregulated financial benchmarks allows for increased human error and manipulation at the data input stage, the administrator stage and the end user stage.

To further explain the human factor in financial benchmark production, section IV discusses how financial benchmarks are calculated using examples from the electricity market, the financial benchmark for interest rates, the foreign exchange market, the derivative swaps market and the brent crude oil market. These examples are used in this paper because they involve financial benchmarks that were manipulated resulting in antitrust litigation which have provided us with several important case studies.

Having explained how financial benchmarks work, section V establishes that financial benchmarks determine price in many markets. Financial benchmarks are ubiquitous in setting prices in financial markets. This is the economic reality of these markets, in part, because of legal requirements that financial benchmarks be used, regulatory requirements that financial benchmarks be used and adhesion contracts that incorporate financial benchmarks.

Accordingly, prices in these markets are controlled by financial benchmarks.

This price control factor is critical because the ability to control price is one of the necessary elements to establish monopolization under the Sherman Act, §2. Section VI explains monopolization as having two critical elements; 1. Monopoly power which is the ability to control prices or eliminate competitors and 2. The conduct prong which has been described as anticompetitive conduct. Financial benchmark monopolization cases are examined here to illustrate how control of the financial benchmark equals the ability to control prices and how financial benchmark manipulation establishes a violation of the conduct prong.

Finally, section VII examines some of the financial benchmark reforms, with a particular focus on interest rate benchmarks. The purpose here is to illustrate how, even with reforms, the human factor will be ever present in financial benchmarks.

II. WHY FINANCIAL BENCHMARKS ARE IMPORTANT

Financial markets² are enormous consisting of investments in the trillions of dollars.³ The buying and selling of these investment vehicles, of necessity, requires the establishment of prices. But how does one efficiently establish “price” in such large markets? Fair market value has, since ancient times, been considered a just price most buyers and sellers would agree to.⁴ But it would be impractical to attempt to establish a fair market price in such “vast and complex” markets.⁵ Enter financial benchmarks, a pricing mechanism that looks at data from a sample of the market in question and applies that data to a mathematical formula to calculate an estimated “fair market” price.

2. Adam Hayes, *Financial Markets*, INVESTOPDIA (Feb. 23, 2021), <https://www.investopedia.com/terms/f/financial-market.asp#:~:text=Financial%20markets%20refer%20broadly%20to,smooth%20operation%20of%20capitalist%20economies> (In this paper, financial markets refer broadly to any marketplace where the trading of securities occurs, including the stock market, bond market, commodities market, forex market, and derivatives market, among others.).

3. Gina-Gail S. Fletcher, *Benchmark Regulation*, 102 IOWA L. REV. 1929, 1930-31 (2017).

4. Alphonse M. Squillante, *The Doctrine of Just Price-Its Origin and Development*, 74 COM L.J., (Nov. 1969), 333 (citing to ARISTOTLE'S ETHICS, (Penguin Classics edition), 261).

5. Andrew Verstein, *Benchmark Manipulation*, 56 B.C. L. REV. 215, 217 (2015).

Financial benchmarks are important to financial markets because they reduce transaction costs as parties do not have to compile their own price data,⁶ increase the disbursement of information,⁷ and enhance market transparency and liquidity.⁸ These benefits reduce barriers to entry, simplify transactions and increase efficiency.⁹ Today, the economic reality is that actual fair market prices are irrelevant in many markets; benchmarks determine price.¹⁰

III. THE HUMAN FACTOR - BENCHMARKS ARE NOT OBJECTIVE

Similar to the myth of the “rational man,” benchmarks persist in a mythical world of objective mathematical data.¹¹ Before the 2012 revelation of benchmark manipulation, the subjective, human elements, including avarice, have been ignored leaving benchmarks to exist in an unregulated environment.¹²

While benchmarks may be calculated using different methodologies, discussed in more detail below, all benchmarks have three key actors: input providers, benchmark administrators and end users.¹³ Each of these actors rely as much, if not more, on human factors rather than a pure, mathematical factor. For example, input providers provide the data upon which the benchmark is based. The greater the number of input providers, the more accurate the benchmark and the less likely the benchmark can be manipulated.¹⁴ But data input is not a simple bean-count; as with all data-based information bad data results in bad information – garbage-in,

6. Fletcher, *supra* note 3, at 1943-44; Verstein *supra* note 5 at 225-27; Gabriel Rauterberg, Andrew Verstein, *Index Theory: The Law, Promise and Failure of Financial Indices*, 30 YALE J. ON REG. 1, 13, 14 (2013).

7. Rauterberg, *supra* note 6, at 13; Fletcher *supra* note 3, at 1943-44; Verstein *supra* note 5, at 225-26; Vincent Brousseau et al., *The LIBOR Scandal: What's Next? A Possible Way Forward*, VOX (Dec. 9, 2013), <http://www.voxeu.org/article/libor-scandal-and-reform>.

8. Fletcher, *supra* note 3, at 1943-44; Rauterberg, *supra* note 6, at 13.

9. Fletcher, *supra* note 3, at 1944; Rauterberg, *supra* note 6, at 14.

10. Verstein, *supra* note 5, at 217; Fletcher, *supra* note 3, at 1943.

11. Rauterberg, *supra* note 6, at 15.

12. Fletcher, *supra* note 3, at 1933; Rauterberg, *supra* note 6, at 3.

13. Fletcher, *supra* note 3, at 1945.

14. *Id.*; see also Consultation Report, Int'l Org. of Sec. Comm'ns, Financial Benchmarks: Onnig H. Dombalagian, Chasing the Tape: Information Law and Policy In Capital Markets (89 (2015) CR01/13, January 2013, at Annex A, p. 12), <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD399.pdf>.

garbage-out.¹⁵ For example, the data that used to be submitted to calculate LIBOR¹⁶ was based upon input providers' "estimates." This data source was not purely mathematical, and in turn, it allowed for significant discretion as well as manipulation.¹⁷

To some extent, benchmarks are compiled based upon decision theory:¹⁸ selecting segments of data because using the entire universe of data is not practical primarily due to costs. This requires some subjective intervention.¹⁹ For example, Platts provides oil price data based upon actual transactions. However, Platts does not contact every buyer and seller of oil. Rather, it uses a market sample selecting who to contact, how to weigh the data, and estimates when data is not available. Such data input is inherently subjective.²⁰

There are two types of benchmark administrators: private service benchmark administrators who provide output data to clients who subscribe to their service and secondary business sources such as exchanges and trade organizations.²¹ In both instances, benchmark administrators select data sources, gather the data from input providers, determine weights to be assigned to data inputs, calculate the data inputs and disseminate the resulting outputs (benchmark price) to end users.²² As with data input, this selection of data process together with weighting considerations and methodologies require some subjective human input.

End users are parties who need the information to reduce transaction costs. In the financial services sector, this would include large actors in financial markets such as banks, insurance companies,

15. TechTarget Contributor, Definition garbage in, garbage out (GIGO), SEARCHSOFTWARE QUALITY (2008), <https://searchsoftwarequality.techtarget.com/definition/garbage-in-garbage-out> (George Fuechsel, an early computer programmer and instructor, is believed to have coined the term as a visual tool in teaching his students that a computer just processes what it is given.).

16. London Inter-bank Offered Rate.

17. Rauterberg, *supra* note 6, at 17.

18. See Herbert A. Simon, *Theories of Decision-Making in Economics and Behavioral Science*, 49(3) THE AMERICAN ECON. REV. 253, 272-73 (June, 1959) (In this paper, decision theory is meant to describe the use of selective information when using all possible information would be impracticable.).

19. Rauterberg, *supra* note 6, at 18-19.

20. *Id.* at 24.

21. Fletcher, *supra* note 3, at 1946.

22. Fletcher, *supra* note 3, at 1946; Consultation Report, Int'l Org. of Sec. Comm'ns, Financial Benchmarks: Onnig H. Dombalagian, Chasing the Tape: Information Law and Policy In Capital Markets (89 (2015) CR01/13, January 2013, at Annex A, p. 15), <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD399.pdf>.

and hedge funds.²³ Such end users reduce pricing transaction costs by referencing price to a benchmark rather than trying to set price on actual market prices; a costly endeavor.

Price benchmarks are generally easier to manipulate than the prices they represent. Two factors—concentration and voluntariness—greatly influence the potential for bias. Concentration reflects the fact that benchmark data is only a slice of all available data for that particular benchmark.²⁴ As discussed above regarding the oil benchmark, Platts, only a small percentage of actual transactions are used as the data input. Accordingly, the data input is concentrated. This is referred to as domain concentration where the input providers are limited to a small number. If there are only a few buyers and sellers in a market, this is referred to as participant concentration. Finally, liquidity concentration occurs when there are few trades within a market. Participant and liquidity concentration are related to the end user actors. All three forms of concentration can skew the benchmark to the point where we are not receiving information about market prices, but instead, we are receiving a benchmark price which may have very little to do with a free-market price.²⁵

While the above description of benchmarks identifies three separate actors, it is often the case that the input providers and the end users are the same party.²⁶ For example, in the LIBOR benchmark, input providers and end users were banks who needed the benchmark to set the price for interest rates.²⁷ To further add to the conflict of interest, the benchmark administrator for LIBOR was the BBA, a banking trade association.²⁸

IV. HOW BENCHMARKS ARE CALCULATED

Benchmarks use a variety of input mechanisms and mathematical formulas to determine a price or a rate for underlying assets.²⁹ This section examines the various mechanisms used to create

23. Fletcher, *supra* note 3, at 1945.

24. Andrew Verstein, *Benchmark Manipulation*, 56 B.C. L. REV. 215, 218 (2015).

25. *Id.* at 230-31.

26. Fletcher, *supra* note 3, at 1945.

27. Sharon E. Foster, *LIBOR Manipulation and Antitrust Allegations*, 11 DEPAUL BUS. & COM. L.J. 291, 296-97 (2013).

28. Foster, *supra* note 27, at 296-97; Fletcher, *supra* note 26, at 1945, 1960.

29. Fletcher, *supra* note 3 at 1930-31, 1945-46; Regulation (EU) No 596/2014 of the European Parliament and of the Council of 16 April 2014 on Market Abuse [Market Abuse Regulation], L 173/1 OJ 12.06.2014, recital (29); Gabriel Rauterberg & Andrew Verstein,

a pricing benchmark in the electricity market, interest rates, the foreign exchange market, the derivative swaps market, and the Brent crude oil market. Each of these markets have experienced benchmark manipulation indicating that various benchmark calculations have vulnerabilities.

A. BENCHMARK CALCULATION IN THE ELECTRICITY MARKET

In the *Merced*³⁰ case, the California electricity price benchmark was calculated as follows:

“A. THE ELECTRICITY MARKET

. . . Merced purchased peak electricity from another California irrigation district during the Class Period. Those contracts settled according to the Dow Jones Daily Index price for peak power at the northern California trading hub known as North Path 15, which is set by averaging market prices for electricity-related contracts at North Path 15. . .

Two types of electricity-related contracts are relevant to this case: contracts for next-day delivery of physical electricity, or “dailies,” and financial “swap” contracts by which parties agree to exchange payments depending on the daily index price on a specified settlement date at a specified location. The prices at which dailies and swap contracts settle are based on the index price published by certain exchanges.

Those exchanges calculate index prices based on transactions for electricity at specific trading locations. One of these exchanges is the Intercontinental Exchange (“ICE”), which calculates a Daily Index price based on the weighted average price of all day-ahead fixed-price physical electricity transactions at the relevant location. Dow Jones also calculates prices based on the same dates and trading hub locations, which Merced alleges move in lockstep with the ICE Daily Index price (collectively with the ICE Daily Index price, the “Daily Index Prices”). Market participants

Index Theory: The Law, Promise and Failure of Financial Indices, 30 YALE J. ON REG. 1, 17-24 (2013).

30. *Merced Irrigation District v. Barclays Bank PLC*, 165 F.Supp.3d 122 (S.D.N.Y., 2016).

trading in physical positions have the obligation to deliver or receive electricity at the Daily Index Prices, while those trading in purely financial positions, including swap contracts, have no obligation to deliver or receive physical electricity.

Although Barclays did not have the capability to provide or accept physical electricity, during the Class Period it traded both short-term contracts for physical electricity—which it then “flattened,” or offset, by purchasing or selling physical contracts for an equal volume of electricity in the opposite direction prior to delivery—and longer-term swap contracts that settled at prices set by the ICE Daily Index . . .³¹

The electricity market in *Merced* was priced based upon a benchmark known as the Dow Jones Daily Index for a particular geographic location, North Path 15. Dow Jones Daily Index, in turn, calculates its index from input data received from various trading exchanges such as the Intercontinental Exchange (“ICE”). ICE uses a weighted average price method to calculate price based upon actual transaction for a specific location. Data is taken from actual transactions on the ICE trading platform from trades by ICE members. So, the administrator and the data input providers are, in essence, the same.³² Further, the data input providers are the very people who become the end users.

B. BENCHMARK CALCULATION FOR INTEREST RATES

Regarding the LIBOR interest rate index, prior to 2012 the benchmarks were calculated as follows:

[T]he British Bankers Association, which administered LIBOR from its inception and through the relevant time period, would have participating banks submit data in response to this question, “At what rate could you borrow funds, were you to do so by asking for and then accepting inter-bank offers in a reasonable market size just prior to 11 am?” The rates are calculated by participating banks submitting data on a daily basis reflecting their estimated cost of

31. *Id.* at 128-29.

32. Wholesale Electricity and Natural Gas Market Data (June 18, 2020), <https://www.eia.gov/electricity/wholesale/>.

money for fifteen different time periods; overnight loans up to twelve-month loans. Participating banks are on panels consisting of six to eighteen banks with some banks on more than one panel. There are a total of ten panels; one for each of the ten major currencies included in the LIBOR calculations.

Banks are selected as participating banks on the panels based upon reputation, credit quality, and activity in London, as London is a major international financial market. The data provided by participating banks on a specific panel is then “trimmed” with the highest and lowest 25% rates eliminated, and the median rates used. For example, the U.S. Dollar LIBOR panel is comprised of eighteen participating banks which would submit data each day on each of the fifteen time periods. Looking at just one of those time periods for purposes of this example, say the overnight rate, of the eighteen data submissions, the high four and the low four would be eliminated with the middle remaining ten used to calculate the overnight interest rate for the U.S. Dollar LIBOR.³³

LIBOR is supposed to reflect the cost of money over various time periods. It was based upon estimates provided by a limited number of banks (data input providers) who were also end users. The administrator was a banking trade association.

C. BENCHMARK CALCULATION IN THE FOREIGN EXCHANGE MARKET

As for the foreign exchange market, the benchmarks were calculated as follows:

The FOREX case involved the manipulation of foreign exchange (FX) benchmark rates. FX benchmark rates are used to price certain foreign exchange financial transactions including foreign exchange swaps, cross currency swaps, spot transactions, futures, options, forwards and other derivatives. In general, FX benchmark rates are set based upon actual trades (bids and offers during the “fix period” (a one-minute window). The benchmark rate is determined by calculating the bid-offer spread based upon the fix period information and calculating a median which determines the rate.³⁴

Unlike LIBOR, foreign exchange data input was based upon actual trades, but only during a short time period. This data was

33. Foster, *supra* note 27, at 296-96.

34. Sharon E. Foster, *Antitrust Efficient Enforcer and the Financial Products Benchmark Manipulation Litigation*, 13 OHIO ST. BUS.L.J. 99, 144-45 (2019).

manipulated by not submitting trades during the fix period or submitting as many trades as possible during the fix period. The data input providers and end users were the same people.

D. BENCHMARK CALCULATION IN THE DERIVATIVE SWAPS MARKET

An interest rate benchmark for swaps known as the ISDAfix was calculated as follows:

The ISDAfix is an interest rate benchmark, issued in several currencies, used to price interest rate swaps. For example, one party may hold a financial instrument with a fixed interest rate while another party holds a financial instrument with a floating interest rate. These parties may enter into an agreement to swap fixed/floating interest rates. A “swaption,” is an option to enter into an interest rate swap at a specified rate on some set future date. The ISDAfix is the benchmark used to price these interest rate swaps.

USD ISDAfix rates and spreads are U.S. Dollar-denominated swaps for various maturity dates. The 11:00 a.m. USD rate is used for cash settlement of swaps and swaptions. The USD ISDAfix rate was set by a process that began at 11:00 am Eastern Time by capturing swap rates and spreads from U.S. based Swap Brokers. ICAP Plc, responsible for compiling ISDAfix benchmark rates data during the relevant time period, would circulate to a panel of banks and financial institutions (collectively “banks”) a set of reference points generated using the captured data and data reflecting executed trades and executable bids and offers at 11:00 am for US Treasury securities. ICAP requested the banks to submit the midpoint of where it would offer and bid a swap to a dealer. Banks could accept the reference rate provided at 11:02 a.m., submit a different value, or take no action. Thomson Reuters would then average the submissions resulting in the USD ISDAfix.³⁵

The USD ISDAfix price sought data input from end users during a brief time period, from a limited number of data input providers who could provide data not based on actual market conditions and then accept, reject or take no action based on that data which was then averaged by the administrator.

E. BENCHMARK CALCULATION IN THE BRENT CRUDE OIL MARKET

35. *Id.* at 148.

Benchmark calculation for the Brent Crude Oil index is as follows:

The cash settlement price for the ICE Brent Future is based on the ICE Brent Index ('The Index') on expiry day for the relevant ICE Brent Futures contract month. The Index represents the average price of trading in the BFOE (Brent-Forties-Oseberg-Ekofisk-Troll) cash or forward ('BFOE Cash') market in the relevant delivery month as reported and confirmed by the industry media. Only published cargo size (600,000 barrels) trades and assessments are taken into consideration in the calculation.

i. Calculation

The calculation of the ICE Brent Index will be the average of five values. These will be aggregated into a single figure for the final ICE Brent Index figure from the five standalone valuations at each of the sampling points.

Each of those five figures will be calculated by averaging the sum of:

1) The volume weighted minute marker for the second month ICE Brent Futures contract at the sampling time; and the sum of a weighted average of full cargo second month EFP trades and a weighted average of full cargo spread trades (between first and second months) in the Cash BFOE market, in the 30-minute period concluding at the sampling point in question; and

2) that same volume weighted minute marker to the sum of the straight averages of the independent assessment(s) specified in the Index methodology for the second month EFP value and the spread between the first and second month Cash BFOE markets at the sampling point; and

3) a weighted average of any full cargo first month Cash BFOE trades (if any) in the 5-minute period concluding at the sampling point in question.

Should trades occur in only one of the component markets of section 1 above, the missing trade-derived value will be replaced in the calculation above by an independent assessment of that component market at that time, but only where no trade in that component market has occurred.

Should trades occur in neither component market during the 30-minute period in question, then the value for that sampling time will

be calculated as per paragraphs 2 and 3 only, i.e., on the basis of independent assessments and any full cash cargoes only.

Should no trades occur in component market 3, then the value for that sampling time will be calculated as per paragraph 1 and 2 only, i.e. on the basis of independent assessments and/or any EFP and/or spread trade only.

ii. *Volume Weighted Second Month Minute Markers*

Tradable minute markers will exist for the second month ICE Brent Crude Futures contract at the following sampling times: 10:30, 12:30, 14:30, 16:30 and 19:30. Two of the second month minute markers already exist, which are calculated at 16:30 (the 'tradable ICE Brent London Minute Marker') and 19:30 (settlement). Please note, the 19:30 marker is a two-minute marker.

iii. *Full Cargo Second Month Efp Trades And Full Cargo Spread Trades (Between First And Second Months)*

For inclusion in the Index calculation, the full cargo EFP must be traded in the 30 minutes before the sample time, so 10:00:00 to 10:29:59 for the 10:30 sampling point, 12:00:00 to 12:29:59 for the 12:30 sampling point and so forth. If the cargo trades any time after 10:30 or 12:30 and so forth, it will not be included in the Index calculation. If the trade appears to be close to the cut-off, the Exchange will reach out to participants on one or both sides, and/or to brokers to clarify when the trade actually occurred.

iv. *Independent Assessments*

ICIS assess the M2 EFP and M1/M2 Cash BFOE Spread at 10:30, 12:30, 14:30, 16:30 and 19:30 on expiry day. These independent assessments of the M2 EFP and M1/M2 Cash BFOE Spread are used in the calculation of the Brent Index.

v. *First Month Cash Bfoe Trades*

To be included in the Brent Index, full cargo front month cargo trades must happen within 5 minutes of the cut-off time. These are at:

10:25:00 to 10:29:59, 12:25:00 to 12:29:59, 14:25:00 to 14:29:59, 16:25:00 to 16:29:59 and 19:25:00 to 19:29:59.³⁶

What is clear from the rather complex methodology used to calculate the Brent oil benchmark is that it is an average of five values. These five values represent the data input looking at volume during a two-month time period, price during a thirty-minute time period and a weighted average during a five-minute time period. When data is missing, independent assessment is used in lieu of actual market data. With the exception of the independent assessment, data input providers and end users are the same.

V. BENCHMARKS DETERMINE PRICE

It has been argued that even with benchmarks one can negotiate price.³⁷ If one can negotiate price, it is not likely that a party has control of price. However, this theoretical possibility is not a realistic probability as most markets are priced by benchmarks.³⁸ Indeed, not only are financial benchmarks used in most contracts to price financial products,³⁹ they are required under accounting standards and regulations for disclosure requirements.⁴⁰ Thus, it seems unlikely

36. ICE Futures Europe, *The ICE Brent Index* (date, time), https://www.theice.com/publicdocs/futures/ICE_Futures_Europe_Brent_Index.pdf.

37. See *Gelboim v. Bank of America*, 823 F.3d 759, 773 (2nd Cir. 2016).

38. Verstein, *supra* note 24, at 224-25.

39. Matthew C. Turk, *Regulation by Settlement*, 66 U. KAN. L.R. 259, 284 (2017).

40. Fair Value Measurement topic 820 FASB: *Ernst & Young, Financial reporting developments A comprehensive guide, Fair value measurement* (Revised July 2019) [https://www.ey.com/publication/vwluassetsdld/financialreportingdevelopments_bb1462_fairvaluemeasurement_25july2019-v2/\\$file/financialreportingdevelopments_bb1462_fairvaluemeasurement_25july2019-v2.pdf](https://www.ey.com/publication/vwluassetsdld/financialreportingdevelopments_bb1462_fairvaluemeasurement_25july2019-v2/$file/financialreportingdevelopments_bb1462_fairvaluemeasurement_25july2019-v2.pdf) (last visited ...); Financial Accounting Standards Board, *Proposed Accounting Standards Update: Financial Instruments – Credit Losses* (Topic 326), *Derivatives and Hedging* (Topic 815), and *Leases* (Topic 842), https://www.fasb.org/cs/ContentServer?c=FASBContent_C&cid=1176173177588&d=&pagename=FASB%2FFASBContent_C%2FGeneralContentDisplay (last visited...); Warren Gorham & Lamont, FASB Updates List of Permissible U.S. Benchmark Interest Rates for Hedge Accounting, Bank Auditing and Accounting Report (November 2018), 2018 WL 6444909; ASU 2018-16, *Derivatives and Hedging* (Topic 815): Inclusion of the Secured Overnight Financing Rate (SOFR) Overnight Index Swap (OIS) Rate as a Benchmark Interest Rate for Hedge Accounting Purposes; 17 C.F.R. § 229.1111; Fletcher, *supra* note 26, at 1943; Warren Gorham & Lamont *International Accounting and Financial Reporting, and Analysis*, WGL INTLACCT B25; Harold S. Bloomenthal & Samuel Wolff, *Securities Law Handbook | June 2020 Update*, Chapter 3. The Integrated Disclosure System, Part II. Regulation S-K, D. Other Disclosures, § 3:78. The LIBOR transition.

that one could negotiate price if the financial benchmark was required for accounting and regulatory purposes.

Pricing benchmarks have become “the de facto pricing mechanism for many markets.”⁴¹

Given risk factors and costs in trying to incorporate “real” market prices, for regulatory purposes such as accounting standards or into financial product contracts pricing benchmarks have become ubiquitous as pricing terms.⁴²

A. LEGAL AND REGULATORY REQUIREMENTS TO USE BENCHMARKS

There are numerous instances where the use of pricing benchmarks are legally required. As one scholar noted:

The law often imposes benchmarks upon private actors, publicly endorsing private hardwiring. It is common for regulations to require private actors to use benchmarks. For example, exchange traded funds obtain broad exemptions from the regulations applicable to mutual funds, provided that they are based upon a third-party benchmark; . . . ; ERISA conditions the ability of fiduciaries to self-deal in currency trades for the retirement plans they supervise on limiting their prices by the relevant benchmark; federal law requires natural gas prices to be “fair and reasonable,” but prices linked to a market benchmark are presumptively valid.⁴³

To add to the above list, the Financial Accounting Standards Board (“FASB”) promulgates accounting standards considered

41. John B. Kirkwood, *Market Power and Antitrust Enforcement*, 98 B.U. L. REV. 1169, 1178-79; 1181-85 (2018); Fletcher, *supra* note 3, at 1930, 1943-44; Matthew C. Turk, *Regulation by Settlement*, 66 U. KAN. L.R. 259, 284 (2017); Regulation (EU) No 596/2014 of the European Parliament and of the Council of 16 April 2014 on Market Abuse [Market Abuse Regulation or ‘MAR’], L 173/1 OJ 12.06.2014, recital (29); Verstein, *supra* note 24, at 217, 236; Vincent Brousseau et al., *The LIBOR Scandal: What’s Next? A Possible Way Forward*, VOX (Dec. 9, 2013), <http://www.voxeu.org/article/libor-scandal-and-reform>.

42. Verstein, *supra* note 24, at 224-25.

43. *Id.* at 227-28; see *Reforming Major Interest Rate Benchmarks*, Progress Report (18 December 2019), p. 41, <https://www.fsb.org/wp-content/uploads/P181219.pdf> (discussing the OSSG working to ease the transition from LIBOR to SOFR taking into account regulatory issues where benchmarks are required).

authoritative by state and national accounting regulators such as the American Institute of CPAs (AICPA).⁴⁴ The FASB defines benchmark interest rates as:

Benchmark Interest Rate

A widely recognized and quoted rate in an active financial market that is broadly indicative of the overall level of interest rates attributable to high-credit-quality obligors in that market. It is a rate that is widely used in a given financial market as an underlying basis for determining the interest rates of individual financial instruments and commonly referenced in interest-rate-related transactions.

In theory, the benchmark interest rate should be a risk-free rate (that is, has no risk of default). In some markets, government borrowing rates may serve as a benchmark. In other markets, the benchmark interest rate may be an interbank offered rate.⁴⁵

This definition sets interest rate prices by defining interest rates based upon a benchmark. Additionally, a list of approved interest rate benchmarks is provided by FASB.⁴⁶ Further, the capital asset pricing model (“CAPM”), an accounting model used to price risky securities, incorporates “risk-free rates” which include the proposed benchmark SOFR and LIBOR (a risk-free proxy rate).⁴⁷

Further, the Securities and Exchange Commission requires “a consistent comparison of composites to appropriate benchmarks” for

44. FASB Updates List of Permissible U.S. Benchmark Interest Rates for Hedge Accounting (last visited Oct. 25, 2018), https://www.fasb.org/jsp/FASB/FASBContent_C/NewsPage&cid=1176171490795.

45. FASB Accounting Standards Update, Derivatives and Hedging (Topic 815): *Inclusion of the Secured Overnight Financing Rate (SOFR) Overnight Index Swap (OIS) Rate as a Benchmark Interest Rate for Hedge Accounting Purposes*, No. 2018-16 (Oct. 2018), <https://asc.fasb.org/imageRoot/47/118700447.pdf>.

46. FASB Updates List of Permissible U.S. Benchmark Interest Rates for Hedge Accounting (Oct. 25, 2018), https://www.fasb.org/jsp/FASB/FASBContent_C/NewsPage&cid=1176171490795.

47. Andreas Schrimpf & Vladyslav Sushko, *Beyond LIBOR: A Primer on the New Benchmark Rates*, BIS Q. REV. 29, 30 (Mar. 5, 2019), https://www.bis.org/publ/qtrpdf/r_qt1903e.htm; Will Kenton, *Capital Asset Pricing Model (CAPM)*, INVESTOPEDIA (Apr. 1, 2021), <https://www.investopedia.com/terms/c/capm.asp>; Adam Hayes, *LIBOR Curve*, INVESTOPEDIA (Dec. 5, 2020), <https://www.investopedia.com/terms/l/libor-curve.asp#:~:text=The%20LIBOR%20curve%20and%20the,short%2Dterm%20floating%20rate%20instruments>.

performance advertising.⁴⁸ The New York Federal Reserve has established the Alternative Reference Rate Committee (“ARRC”) to ease the transition from LIBOR to SOFR because the LIBOR benchmark is widely used and legally required relating to financial market accounting requirements and tax issues.⁴⁹

B. CONTRACTS INCORPORATING BENCHMARKS AS PRICE INPUTS

Given the previously noted risk factors and costs in attempting to price based upon the “real” market price together with legal and regulatory requirements to use benchmarks, benchmarks have become a common pricing term in many financial products contracts.⁵⁰ While, theoretically some parties may have some choice about pricing terms, as a practical reality there is little to no choice due to legal requirements to use certain benchmarks as discussed above and contract of adhesion issues discussed below. The result is that the benchmark incorporated in the contract constitutes price.⁵¹

Perhaps the most concerning aspect regarding benchmark manipulation is the impact it had on retirement investment funds as these retirement accounts are largely an adhesion contract which reference a benchmark for price.⁵² An adhesion contract is generally defined as:

Contracts of adhesion are characterized by standardized forms prepared by one party which are offered for rejection or acceptance without opportunity for bargaining and under the circumstances that the second party cannot obtain the desired product or service except by acquiescing in the form agreement.⁵³

A typical retirement plan, such as a 401k, allows employees to contribute to an employer-determined set of assets which may

48. See SEC Compliance Alert (June 2007), <https://www.sec.gov/about/offices/ocie/complialert.htm>.

49. Reforming Major Interest Rate Benchmarks, Progress Report, 43-44 (Dec. 18, 2019), <https://www.fsb.org/wp-content/uploads/P181219.pdf>.

50. Verstein, *supra* note 24, at 226.

51. Verstein, *supra* note 24, at 228; Rauterberg & Verstein, *supra* note 29, at 9-11.

52. Verstein, *supra* note 24, at 236.

53. Rory v. Continental Ins. Co., 473, Mich. 457, 484 (2005) (citing to Morris v. Metriyakool,

418 Mich. 423 (1984); Patterson v. IIT Consumer Financial Corp., 14 Cal. App. 1659, 1664 (1993); Todd D. Rakoff, Contracts of Adhesion: *An Essay in Reconstruction*, 96 HARV. L. REV. 1173, 1177 (1983); Kenneth R. Davis, *The Arbitration Claws: Unconscionability In The Securities Industry*, 78 BOST. U. L. REV. 255, 284-85 (1998).

include mutual funds, bonds, stocks and real estate investment trusts.⁵⁴ Accordingly, the employee has no choice as to what funds are in the plan, the employer does. The employee does get to direct her contributions to specific funds within the plan. Critically, 401k plans and IRAs are considered ERISA plans which are deemed to be adhesion contracts.⁵⁵

Financial products, such as mutual funds, are a primary investment instrument included in retirement accounts, such as the 401k retirement accounts or IRAs. These retirement vehicles account for a significant portion of U.S. financial markets. For example:

Employer-sponsored retirement plans (DB [Defined Benefit plans such as pensions] and DC plans [Defined Contribution plans such as 401(k) and 403(b) plans] sponsored by private-sector and government employers), IRAs (including rollovers), and annuities play an important role in the US retirement system, with assets totaling \$27.1 trillion at year-end 2018 . . . down 4.7 percent from year-end 2017, but in line with the 5.3 percent decline in US stocks during the year. The largest components of retirement assets were IRAs and employer-sponsored DC plans, which together represented 60 percent of all retirement market assets at year-end 2018. Other employer-sponsored plans include private-sector DB pension plans (\$2.9 trillion), state and local government DB retirement plans (\$3.9 trillion), and federal government DB plans (\$1.8 trillion) . . .⁵⁶

Many US households have accumulated resources earmarked for retirement . . . Across all age groups, 62 percent of US households (79 million) reported that they had employer-sponsored retirement plans, IRAs, or both in 2018. Fifty-six percent of US households reported that they had employer-sponsored retirement plans—that is, they had assets in DC plan accounts, were receiving or expecting to receive benefits from DB plans, or both. Thirty-three percent reported having assets in IRAs, including 27 percent who had both IRAs and employer-sponsored retirement plans. US households represent a wide range of ages at different points in the life cycle of

54. Joshua Kennon, *Investing Through Your 401(k): A Beginner's Guide to the Different Types of 401(k) Plans*, THE BALANCE (Feb. 9, 2021), <https://www.thebalance.com/investing-through-your-401-k-357109>.

55. Kate Watson Moss, *ERISA and Arbitration: How Safe Is Your 401(k)?*, 64 DEPAUL L. REV. 773, 780-81 and fn 68, 804 and fn 264 (2015); 29 U.S.C. Chapt. 18 Employee Retirement Income Security Act (ERISA), <https://via.library.depaul.edu/law-review/vol64/iss2/22>.

56. 2019 *Investment Company Handbook: A Review of Trends and Activities in the Investment Company Industry*, 158, https://www.ici.org/pdf/2019_factbook.pdf.

savings. Focus on retirement savings tends to increase with age . . . , and older households are more likely to have retirement resources; for example, about eight out of 10 near-retiree households have retirement accumulations . . .⁵⁷

Retirement plans contain trillions of dollars which retirees and soon to be retirees depend upon for their retirement. Social Security is not intended to and does not pay enough to live on. Further, it is anyone's guess if Social Security will be available in the not-too-distant future.

The above-described retirement plans are contracts of adhesion where the investor has limited options regarding the investment vehicles, limited options regarding the amount of contribution and no choice regarding pricing benchmarks. Even if negotiations for pricing benchmarks were possible for retirement accounts, it is doubtful that individual investors would have the time to spend researching such things as pricing benchmarks in order to make an informed choice for purposes of negotiations. Indeed, it would probably be terribly inefficient to institute such individual negotiations. That said, it is specious to suggest that such choice is available.

VI. MONOPOLIZATION

Pricing benchmarks are, as a matter of economic reality, price in most financial markets. Control a pricing benchmark for a market often means control of price for that market. If the pricing benchmark has few input providers or is otherwise concentrated, uses a methodology that is easily manipulated or utilizes input providers, administrators and/or end users with conflicts of interest there is a high risk the pricing benchmark will be manipulated for anticompetitive purposes. Such control and manipulation may also be monopolization; an antitrust violation.

The primary statute dealing with monopolization is the Sherman Act, 15 U.S.C. §2 which states, in pertinent part:

Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce among the several

57. *Id.* at 159.

States, or with foreign nations, shall be deemed guilty of a felony, . . .⁵⁸

The Supreme Court has articulated a two-prong test to establish a Sherman Act §2 claim of monopolization: “(1) the possession of monopoly power in the relevant market and (2) the willful acquisition or maintenance of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident.”⁵⁹

The first prong of the Sherman Act §2 test is “monopoly power,” which the Supreme Court has defined as “the power to control prices or exclude competition.”⁶⁰ Additionally, the Supreme Court has held that such price control must be of a sufficient duration to avoid interfering in a market that will self-correct.⁶¹ The second prong of Sherman §2, “willful acquisition or maintenance of that power” is the conduct prong and examines what defendants allegedly did to monopolize or attempt to monopolize. This prong primarily seeks to identify exclusionary, predatory or anticompetitive conduct that violates the conduct prong.⁶² For example, below-cost prices that drive rivals out of the market and allow the monopolist to raise its prices later and recoup its losses; limited circumstances in which a firm’s unilateral refusal to deal with its rivals can give rise to antitrust liability; tying arrangements where a firm requires a customer to purchase a tied product in order to purchase the tying product; fraudulent patent procurement; acquisition of competitors; and restrictive agreements.⁶³ These examples are illustrative and do not

58. 15 U.S.C. §2.

59. *United States v. Grinnell Corp.*, 384 U.S. 563, 570-71 (1966); *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*, 429 U.S. 477 (1977) (In a civil Sherman §2 claim must also establish damages of the type antitrust law was intended to address, but damage issues are not discussed in this article.).

60. *United States v. E. I. du Pont de Nemours & Co.*, 351 U.S. 377, 391 (1956).

61. *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 589-90 (1986).

62. *Pac. Bell Tel. Co. v. Linkline*, 129 S. Ct. 1109, 1120 (2009); *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 223 (1993); *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 602-03 (1985); *Atl. Richfield Co. v. USA Petroleum Co.*, 495 U.S. 328, 340 (1990).

63. *Pac. Bell Tel.*, 129 S. Ct. at 1118 (citing *Brooke Group, Ltd.*, 509 U.S. at 222-24 and *Aspen Skiing Co.*, 472 U.S. at 608-11); *Eastman Kodak Co. v. Image Technical Servs., Inc.*, 504 U.S. 451, 482-83 (1992) (holding that the issue of whether Kodak engaged in monopolistic behavior when it limited private-service companies’ access to replacement parts turned on whether Kodak had valid business justifications for its activity); *Walker Process Equip., Inc. v. Food Mach. & Chem. Corp.*, 382 U.S. 172, 177-78 (1965) (concerning allegations that a company misrepresented facts in an attempt to gain a patent); *Standard Oil Co. v. United States*, 221 U.S. 1, 75 (1911) (discussing whether a monopoly existed as a result of corporate combinations and stock transfers); and *United States v. Grinnell*

create an exhaustive list.⁶⁴ Conduct that does not amount to market abuses, such as non-predatory price-cutting (where the price is not below costs), are not a violation of Sherman §2's conduct prong as courts do not want to harm efficiency, risk taking and innovation.⁶⁵

In section A below, Monopoly Power, I discuss the traditional mechanisms to determine if defendant[s] control price - direct evidence and a market share analysis. Generally, control of a pricing benchmark provides direct evidence of price control. Additionally, the duration of control will be addressed. In section B below, Willful Acquisition or Maintenance - The Conduct Prong, I explore how manipulation of a pricing benchmark satisfies the conduct prong of Sherman §2.

A. MONOPOLY POWER

The key to monopoly power is the power to control prices or eliminate competitors.⁶⁶

While this definition of monopoly power allows evidence of either the ability to control prices or conduct that eliminates competitors, both evidentiary factors relate to the same concern - a private party's ability to artificially set prices rather than prices being

Corp., 384 U.S. 563, 576 (1966) (considering restrictive agreements that preempted competition as a factor in determining whether a monopoly existed).

64. Verizon Comm'n's, Inc. v. Curtis V. Trinko, L.L.P., 540 U.S. 398, 414 (2004) (citing United States v. Microsoft Corp., 253 F.3d 34, 58 (D.C. Cir. 2001) (per curiam)).

65. See Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 594, 602-03 (1986) (discussing how cutting prices is a common way to increase business and is at the core of competition; *id.* ("[W]e must be concerned lest a rule or precedent that authorizes a search for a particular type of undesirable pricing behavior end up by discouraging legitimate price competition.") (quoting Barry Wright Corp. v. ITT Grinnell Corp., 724 F.2d 227, 234 (1st Cir. 1983) (internal citation marks omitted); see also Brooke Grroupe Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209, 226 (1993) (citing Cargill, Inc. v. Monfort of Colo., Inc., 479 U.S. 104, 121 n.17 (1986)) (referencing the chilling effect that mistaking price cuts to increase business for predatory pricing may have on competition); Atl. Richfield Co. v. USA Petroleum Co., 495 U.S. 328, 340 (1990) (stating that low prices benefit customers and, as long as they are not predatory, do not threaten competition); Pac. Bell Tel., 129 S. Ct. at 1118 (citing United States v. Colgate & Co., 250 U.S. 300, 307 (1919)); but see Verizon Comm'n's Inc., 540 U.S. at 409 ("The unilateral termination of a voluntary [and thus presumably profitable] course of dealing suggested a willingness to forsake short-term profits to achieve an anticompetitive end."); Jefferson Parish Hosp. Dist. No. 2 v. Hyde, 466 U.S. 2, 11-12 (1984), superseded by statute on other grounds, Act of Nov. 19, 1988, Pub. L. No. 100-703, §201, 102 Stat. 4674, 4676 (codified at 35 U.S.C. § 271(d) (2006)), as recognized in Ill. Tool Works Inc. v. Indep. Ink, Inc., 547 U.S. 28, 31 (2006).

66. *E. I. du Pont de Nemours*, 351 U.S. at 391.

set by non-biased market dynamics (primarily supply and demand). Simply put, if one can eliminate competitors one can better control price. In this section we examine how to establish an ability to control price when one controls a pricing benchmark. The primary evidence used to establish an ability to control price comes from two main sources: first, direct evidence of actual price control and, second, evidence of market power.

i. Direct Evidence

Evidence of monopoly power may be established through direct evidence of actual price control.⁶⁷ As discussed below, this method of establishing monopoly power is prevalent in benchmark antitrust litigation. Basically, direct evidence of price control requires defendant(s) to have actually raised or lowered price due to the anticompetitive conduct in question. If direct evidence of price control exists, plaintiff's evidentiary burden is lessened regarding the monopoly power prong, but there still needs to be some evidence of the relevant market.⁶⁸ This, inevitably leads to the question: what

67. *Eastman Kodak*, 504 U.S. at 477-78; *F.T.C. v. Indiana Fed'n of Dentists*, 476 U.S. 447, 460-61 (1986); *Paramount Media Group, Inc. v. Village of Bellwood*, 929 F.3d 914, 922 (7th Cir., 2019); *Wacker v. JP Morgan Chase & Co.*, 678 Fed.Appx 27, 30 -31(2d Cir. 2017); *Mylan Pharmaceuticals Inc. v. Warner Chilcott Public Limited Company*, 838 F.3d 421, 434 (3d Cir. 2016); *Broadcom Corp. v. Qualcomm Inc.*, 501 F.3d 297, 307 (3d Cir. 2007); *Harrison Aire, Inc. v. Aerostar Intern., Inc.*, 423 F.3d 374, 381 (3d Cir. 2005); *Geneva Pharmaceuticals Technology Corp. v. Barr Laboratories Inc.*, 386 F.3d 485, 500 (2d Cir. 2004); *Arani v. TriHealth Inc.*, 77 Fed.Appx. 823, 826 (6th Cir. 2003); *Tops Mkts., Inc. v. Quality Mkts.*, 142 F.3d 90, 98 (2d Cir. 1998) (citing *K.M.B. Warehouse Distribs., Inc. v. Walker Mfg. Co.*, 61 F.3d 123, 128 (2d Cir. 1995)); *Heerwagen v. Clear Channel Commc'ns*, 435 F.3d 219, 227 (2d Cir. 2006); *Geneva Pharm. Tech. Corp. v. Barr Labs. Inc.*, 386 F.3d 485, 500 (2d Cir. 2004); *PepsiCo v. Coca-Cola*, 315 F.3d 101, 107 (2d Cir. 2002); *Merced Irrigation District v. Barclays Bank PLC*, 165 F.Supp.3d 122, 141-42 (U.S.D.C., S.D. N.Y., 2016); *Todd v. Exxon Corp.*, 275 F.3d 191, 206 (2d Cir. 2001); *Flegel v. Christian Hosp.*, 4 F.3d 682, 688 (8th Cir. 1993); *Re/Max Intern., Inc. v. Realty One*, 173 F.3d 995, 1018-19 (6th Cir. 1999); *Rebel Oil Co. v. Atlantic Richfield Co.*, 51 F.3d 1421, 1434 (9th Cir. 1995); *Greyhound Computer Corp., Inc. v. International Business Machines Corp.*, 559 F.2d 488, 503-04 (9th Cir. 1977); 2A PHILLIP E. AREEDA, ET AL., AREEDA & HOVENKAMP'S ANTITRUST LAW, 531a, at 156 (2002) ("AREEDA & HOVENKAMP"); John B. Kirkwood, *Market Power and Antitrust Enforcement*, 98 B.U. L. REV. 1169, 1195-96 (2018) (citing *Toys "R" Us, Inc. v. FTC*, 221 F.3d 928, 937 (7th Cir. 2000)).

68. *Heerwagen v. Clear Channel Commc'ns*, 435 F.3d 219, 229 (2d Cir. 2006); *Merced Irrigation District*, 165 F.Supp.3d at 141; *Broadcom Corp.*, 501 F.3d at 307; *Toys "R" Us*, F.3d at 937 ("proof of actual detrimental effects, such as a reduction of output," can obviate the need for an inquiry into market power, which is but a "surrogate for detrimental effects."); *Concord Assocs.*, 817 F.3d at 53; *Republic Tobacco Co. v. N. Atl. Trading Co.*, 381 F.3d 717, 737 (7th Cir. 2004); *Flegel*, 4 F.3d at 688 (quoting *Indiana Fed'n of Dentists*, 476 U.S. at 461); *Re/Max Intern., Inc.*, 173 F.3d at 1018-19.

relevant market evidence is needed when one is relying on direct evidence of price control?

As discussed below, when one is relying on circumstantial evidence of price control based upon market share analysis, there must be evidence of the product market including substitutes. Substitutes include sufficiently similar products where a consumer will change from the product in question to a substitute if there is a small but significant, non-transitory increase in price (SSNIP).⁶⁹ The inclusion of substitutes reduces market share, thus reducing plaintiff's probability of success in establishing an antitrust claim. But, with direct evidence, evidence of substitutes or the lack thereof is not necessary thus reducing plaintiff's evidentiary burden and, potentially, increasing the chance of success in establishing the monopoly power prong.⁷⁰

ii. *Benchmark Cases Applying Direct Evidence*

While direct evidence of monopoly power is rare,⁷¹ it is ubiquitous in antitrust benchmark cases. This is so because in non-benchmark cases, the direct evidence plaintiffs must produce includes evidence of supracompetitive pricing and restricted output or significant barriers to entry.⁷² This creates a difficult evidentiary burden for plaintiffs in the non-benchmark, direct evidence cases. The cases discussed below provide examples of direct evidence in pricing benchmark cases relevant to the issue of monopoly power as the ability to control prices.

In *Shak v. JPMorgan Chase & Co.*,⁷³ plaintiffs alleged a Sherman §2 violation pleading direct evidence of monopoly power over the silver futures market. Here, defendants are alleged to have manipulated the price by making large, uneconomic, spread bids and offers which would influence the futures contracts benchmark in favor of defendant.⁷⁴ Of note, it was also alleged that defendant had a "dominate" market position in certain spread contracts relating to the

69. *Horizontal Merger Guidelines*, U.S. Dept. Justice and Federal Trade Commission, § 4.1 (Aug. 19, 2010).

70. *Heerwagen*, 435 F.3d at 229; *In re: Zinc Antitrust Litigation*, 2016 WL 3167192.

71. *Mylan Pharmaceuticals Inc.*, 838 F.3d at 434.

72. *Harrison Aire, Inc.*, 423 F.3d at 381; *Broadcom Corp.*, 501 F.3d at 307; *Id.*, at 434.

73. *Shak v. JP Morgan Chase & Co.*, 156 F.Supp.3d 462 (S.D.N.Y., 2016).

74. *Id.* at 470.

silver futures market, but a detailed, market share analysis was not required.⁷⁵

In *Wacker v. JP Morgan Chase & Co.*,⁷⁶ plaintiffs adequately alleged monopoly power under a direct evidence standard by pleading control of long-dated silver futures contracts where defendants manipulated silver benchmarks.⁷⁷

In *Merced Irrigation District v. Barclays Bank PLC*,⁷⁸ Merced alleged that Barclays manipulated an electricity price benchmark, the Intercontinental Exchange (“ICE”) which directly affected the Dow Jones Daily Index price for peak power at the Northern California trading hub known as North Path 15. This was price manipulation causing prices to go up or down depending on Barclay’s trading position. The relevant Dow Jones Daily Index in this case was based upon index prices published by ICE which was based upon a weighted average price of all day-ahead fixed-price physical electricity transactions at the relevant location. Merced bought peak power electricity at the North Path 15, a northern California trading hub. Merced alleged a Sherman §2 violation as the Barclays manipulation of the ICE benchmark amounted to control of electricity prices in the Northern California North Path 15 geographic area. This was sufficient to plead monopoly power by alleging direct evidence of the ability to control a pricing benchmark.

In re Term Commodities Cotton Futures Litig.,⁷⁹ is another Sherman §2 direct evidence case where futures prices for cotton were manipulated upwards to the benefit of defendant and showing an ability to control price without a detailed market share analysis. However, it was alleged that defendant controlled 99% of the relevant market, which is a sufficient market share to establish price control.

In re Crude Oil Commodity Futures Litig.,⁸⁰ involved Sherman § 2 claims stemming from an alleged scheme to manipulate futures prices for West Texas Intermediate (WTI) crude oil. Plaintiffs alleged that defendants acquired a substantial long position, acquired a dominant position (roughly 92%) in physical WTI crude oil thereby driving up the price, acquired a substantial short position and liquidated its physical WTI position on a date benefitting defendants’

75. *Id.* at 484-90.

76. *Wacker*, 678 Fed.Appx at 30-31.

77. *Id.*

78. 165 F.Supp.3d at 128-30.

79. *In re Term Commodities Cotton Futures Litig.*, No. 12 Civ. 5126, 2013 WL 9815198.

80. *In re Crude Oil Commodity Futures Litig.*, 913 F.Supp.2d 41, 46-53 (S.D.N.Y.2012).

calendar spread positions. While there was market power due to market share, it was in a different market – the physical WTI crude market. That would allow control of the pricing benchmark for another market – the futures market.

*In re: Zinc Antitrust Litigation*⁸¹ alleged a Sherman §2 violation based upon direct evidence of monopoly power. Here, plaintiffs alleged defendants controlled the price of SHG zinc in the United States because they controlled 90% of LME warehouse storage, a component of SHG zinc price.⁸² This is not a benchmark nor a manipulation case, rather, it is important as an example of control over a price input, like storage costs, is sufficient to show control of price.⁸³

As many of the cases above indicate, it is not necessary to “corner” a market or achieve a significant market share to control price in a market where price is set by a benchmark; it is only necessary to control the benchmark data inputs.⁸⁴ Control of a pricing benchmark is not only easier than obtaining a significant market share, it is a market reality.

iii. Market Share

In the absence of direct evidence of monopoly power, courts will infer monopoly power based upon market power which is determined by market share.⁸⁵ Market share is ascertained by identifying the product market within a specified geographic area (geographic market).⁸⁶ If the market share reaches a certain level, courts will infer market power, an indication of monopoly power.⁸⁷ While the market share analysis is more prevalent as evidence of

81. *In re: Zinc Antitrust Litigation*, 2016 WL 3167192, at 2.

82. *Id.* at 15.

83. *Id.* at 17.

84. Fletcher, *supra* note 26, at 1931 -32; Verstein, *supra* note 24, at 218, 224-25, 241 (indicating that the ability to strategically feed or starve the transactional benchmark of transactional data gives transactors outsized influence).

85. HERBERT HOVENKAMP, FEDERAL ANTITRUST POLICY: THE LAW OF COMPETITION AND ITS PRACTICE 272-73 (3d ed. 2005); Sharon E. Foster, *Systemic Financial-Service Institutions and Monopoly Power*, 60 CATH. U. L. REV. 357, 375 (2011).

86. Foster, *supra* note 85, at 375; HOVENKAMP, *supra* note 85, at 83.

87. See HOVENKAMP, *supra* note 85, at 272-73 (“Monopoly power” and “market power” are terms that appear to be used interchangeably by courts and commentators.) (using the terms “monopoly power” and “market power” interchangeably); Foster, *supra* note 85, at 375.

monopoly power, it is recognized that such analysis is, at best, an imperfect substitute for direct evidence.⁸⁸

a. Market Share and Monopoly Power

To apply a market-share analysis, the product market and geographic market must be defined. This seemingly simple task is, in reality, extremely complicated. It turns on not only identifying the specific product in question, but also any substitutes which consumers may turn to if the price of the product in question goes up in a particular geographic location.

ai. Product Market

The product market is the good, intangible or service over which the monopolist is alleged to have control over price or to have eliminated competitors offering the same or a similar good, intangible or service. For example, in *Merced* the product was electricity. However, this product definition could be broader if it can be established that consumers will turn to a substitute product, perhaps natural gas, if the price of electricity increased.⁸⁹ The test courts will use in an antitrust case is: if there is a small but significant, non-transitory increase in price (SSNIP) causing a consumer to switch to another product, that other product is a substitute.⁹⁰ In such a case, the original product is considered elastic as replacement by a substitute is likely. The product market must then be defined to include the substitute. This will usually result in the alleged monopolist having a smaller market share.⁹¹ Conversely, if consumers do not have the option to turn to a substitute, the product

88. Lawrence A. Sullivan, *Economics and More Humanistic Disciplines: What Are the Sources of Wisdom for Antitrust*, 125 U. PA.L. REV. 1214, 1220-21; See William M. Landes & Richard A. Posner, *Market Power in Antitrust Cases*, 94 HARV. L. REV. 937, 947(1981)(explaining that "influence of market demand and supply elasticity on market power" should be considered under a market-share analysis); Foster, *supra* note 85, at 375-76; WILLIAM J. BAUMOL & JANUSZ A. ORDOVER, ANTITRUST: SOURCE OF DYNAMIC AND STATIC INEFFICIENCIES, IN ANTITRUST INNOVATION, AND COMPETITIVENESS 82, 83 (Thomas M. Jorde & David J. Teece eds., 1992); Richard S. Markovits, *The American Antitrust Laws on the Centennial of the Sherman Act: A Critique of the Statutes Themselves. Their Interpretation, and Their Operationalization*, 38 BUFF. L. REV. 673, 743-44 (1990) (asserting that a market-share approach reflects neither the company's theoretical nor actual monopoly power in a given market).

89. Landes & Posner, *supra* note 88, at 945; Foster, *supra* note 85, at 376.

90. See, e.g., *E.I. du Pont de Nemours*, 351 U.S. at 404 (noting that, although the defendant may have monopolized the cellophane business, other types of plastic wrapping provided competition and interchangeability); Foster, *supra* note 85, at 377.

91. See Landes & Posner, *supra* note 88, at 947-51 (Other situations affecting the elasticity of a demand curve include when competitors do not operate at capacity and when the industry is not costly to enter); Foster, *supra* note 85, at 376-77.

is considered inelastic and the alleged monopolist will likely have a larger market share.

To add a further wrinkle to the analysis, there may be a submarket within the broader product market definition which would narrow the market resulting in an increase in market share.⁹² Again, using the *Merced* facts as an example, there the product market, electricity, was further narrowed to a submarket; peak power electricity. The test courts use to determine if a submarket exists examines indicia factors such as: "industry or public recognition of the submarket as a separate economic entity, the product's peculiar characteristics and uses, unique production facilities, distinct customers, distinct prices, sensitivity to price changes, and specialized vendors."⁹³ It is important to note that some, but not all, of the indicia factors need to be present.⁹⁴ Further, there is no authority for the proposition that these indicia factors constitute an exhaustive list.

Despite the detailed analysis courts and parties must engage in to define the product market using a market share analysis, most commentators agree that defining the product market by the market share analysis is an imperfect science.⁹⁵ This is so because courts may find an ill-defined product market by expanding the product market to include substitutes resulting in insufficient market share to establish monopoly power (a false negative) or contracting the product market by excluding substitutes resulting in sufficient market share to establish monopoly power (a false positive).

iii. Geographic Market

In order to determine market share, it is also necessary to define the geographic market. Again, using the *Merced* case as an example,

92. *FTC v. Staples*, 970 F. Supp. 1066, 1075 (D.D.C. 1997).

93. *Id.* (quoting *Brown Shoe Co. v. United States*, 370 U.S. 294, 325 (1962)).

94. *Id.*

95. ERNEST GELLHORN ET AL., *ANTITRUST LAW AND ECONOMICS: IN A NUTSHELL* 188-222 (5th ed. 2004) (arguing that the Supreme Court's analysis in *E.I. du Pont de Nemours & Co.* is incorrect because high cross-elasticity indicates low market power only when competitors offer comparable prices for the same product); RICHARD A. POSNER, *ANTITRUST LAW: AN ECONOMIC PERSPECTIVE* 127-28 (1976) (explaining that the *E.I. du Pont de Nemours & Co.* market-share analysis erroneously ignored substitution in production and failed to specify the price for which products in a given market could be considered interchangeable); see generally Donald F. Turner, *Antitrust Policy and the Cellophane Case*, 70 HARV. L. REV. 281 (1956) (describing *E.I. du Pont de Nemours & Co.* and arguing that the alleged monopolist should carry the burden of proving that competitors in the market offer equally comparable products); *Foster*, *supra* note 85, at 377, 379; See IIB PHILLIP AREEDA ET AL., *ANTITRUST LAW* para. 533c, at 254-57 (3d ed. 2007) (For a discussion on the criticism of using submarket analysis).

the geographic market was the Northern California trading hub known as North Path 15.⁹⁶ The geographic market is “defined as the area where a [alleged] monopolist could effectively control prices.”⁹⁷ This may be where the alleged monopolist conducts business or competes but, given economic realities⁹⁸ and technology, the focus is on where the “effect . . . on competition will be direct and immediate . . .”⁹⁹

The current economic reality, particularly in the financial services industry, is that many businesses conduct their business, such that the effect of their conduct will be direct and immediate, in a national and even global geographic market.¹⁰⁰ This expansion of the geographic market from local, to national, to global usually has the effect of reducing market share.¹⁰¹ However, in certain pricing benchmark antitrust litigation, the pricing benchmark only effects a specific geographic market, thus potentially increasing market share.

For example, in the *Merced* case, it was alleged that Barclays controlled, through manipulation, ICE which directly affected the Dow Jones Daily Index price for peak power at the Northern California trading hub known as North Path 15. Accordingly, while one could argue that the relevant geographic market could be global,¹⁰² in the electricity market, business is conducted in local or regional markets, and control of various electricity benchmarks

96. *Merced Irrigation District*, 165 F.Supp.3d at 128-30.

97. Tim McCarthy, *Refining Product Market Definition in the Antitrust Analysis of Bank Mergers*, 46 DUKE L.J. 865, 867-68 (1997); Foster, *supra* note 85, at 380.

98. *United States v. Conn. Nat'l Bank*, 418 U.S. 656, 662 (1974) (The Supreme Court recognized that precedent does not require courts to be “blind ... to economic realities.”); Foster, *supra* note 85, at 381.

99. *Phila. Nat'l Bank*, 374 U.S. at 356-59 (quoting CARL KAYSEN & DONALD F. TURNER, ANTITRUST POLICY: AN ECONOMIC AND LEGAL ANALYSIS 102 (1959)); Foster, *supra* note 85, at 380.

100. See *United States v. Grinnell Corp.*, 384 U.S. 563, 575-76 (1966) (noting that the geographic area of the entity at issue was national and that it engaged in “national planning”); Carl Felsenfeld, *Panel Discussion I: Development of Bank Mergers Law*, 13 FORDHAM J. CORP. & FIN. L. 511, 526-27 (2008) (discussing the large and expanding geographic market for many business); Edward Pekarek & Michela Huth, *Bank Merger Reform Takes an Extended Philadelphia National Bank Holiday*, 13 FORDHAM J. CORP. & FIN. L. 595, 631-36 (2008) 631-36 (discussing how financial services are no longer confined to a determinate industry); *United States v. Microsoft*, 253 F.3d 34, 52 (2001); Foster, *supra* note 85, at 381.

101. Carl Felsenfeld, *Panel Discussion I: Development of Bank Mergers Law*, 13 FORDHAM J. CORP. & FIN. L. 511, 527 (2008) (discussing how redefining a global market creates levels of commercial-bank concentration that would fall below that which antitrust laws are aimed to prevent); Foster, *supra* note 85, at 375.

102. See <https://www.theice.com/about>.

directly affects markets that are geographically more local or regional in nature.¹⁰³ Therefore, the defined geographic market was the Northern California trading hub known as North Path 15, a smaller geographic area and, thus, higher market share if indirect, market share evidence was used.

iv. *Duration Of Control Over Prices*

The conventional wisdom is that monopoly power needs to have long-lasting effects on price; not merely ephemeral effects.¹⁰⁴ The theory behind this monopoly power requirement is that markets with low barriers to entry will not sustain monopolization for the long term as competitors will “come to the monopoly” to seek high profits.¹⁰⁵ In essence, the market will self-correct without the need for intervention by the government or private actions through antitrust laws.

The problem with the duration requirement for monopoly power is multifold: first, courts have not clearly articulated any time period. What is a sufficient time period? One month? One year? Ten years? We are left to speculate. Second, should a time period for one market apply to different markets? For example, if we require a five-year time period in the market for beer, should we require a five-year time period in a financial market pricing benchmark such as LIBOR? Is the damage to markets, to the economy, to political stability and to

103. See U.S. Department of Energy, Office of Electricity Delivery and Energy Reliability, *United States Electricity Industry Primer*, 24-30 (2015), <https://www.energy.gov/sites/prod/files/2015/12/f28/united-states-electricity-industry-primer.pdf>; S&P Global Platts, *Methodology and specifications guide M2MS - Power methodology* (May 2018), https://www.spglobal.com/platts/plattscontent/_assets/_files/en/our-methodology/methodology-specifications/m2ms_power_methodology.pdf.

104. *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 589-90 (1986); Shaun D. Ledgerwood, James A. Keyte, Jeremy A. Verlinda, Guy Ben-Ishai, *The Intersection of Market Manipulation Law and Monopolization Under The Sherman Act: Does it Make Economic Sense?*, 40 ENERGY L. J. 47, 50, 57-59, 79(2019); *Colorado Interstate Gas Co. v. Nat. Gas Pipeline Co.*, 885 F.2d 683, 695-96 (10th Cir. 1989); *Carpenter Tech Corp.*, 2011 WL 4528303 at *6; See AREEDA & HOVENKAMP, *supra* note 67, at 323; *Rio Grande Royalty Co, Inc. v. Energy Transfer Partners*, 786 F. Supp. 2d 1202 (2009); *U.S. v. Syufy Enterprises*, 903 F.2d 659 (9th Cir. 1990) (even with 100% market share, there can be no monopoly power if entry barriers are low); *Emrigra Group v. Fragomen, Del Ray Bernson & Lowey*, 612 F. Supp. 2d. 330, 362 (2009) (“market power can only persist when entry barrier ... block rivals’ entry or expansion.”).

105. See Ledgerwood & Keyte, *supra* note 104, at 80-81.

individuals the same? And third, should economic consequences replace or supplement the duration requirement?

We have some examples of sufficient duration, particularly in the pricing benchmark manipulation cases. For example, in *Merced* “[t]he Complaint incorporates the FERC Report’s conclusions that Barclays manipulated the ICE Daily Index Prices during 655 product days over 35 product months.”¹⁰⁶ Further, *Merced*’s complaint provided “a detailed breakdown of Barclays’s trading by month, trading hub, product, and price. It shows the number of days during each month that Barclays benefited from its alleged manipulative trades: during 27 out of 35 product months in which Barclays is alleged to have engaged in manipulative trades, the number of days in which it benefited was greater than 25.”¹⁰⁷

To summarize, in *Merced*, Barclays is alleged to have manipulated the relevant pricing benchmark for a period of approximately three years.¹⁰⁸ This was held to be sufficient to show defendant’s control over prices was not ephemeral.¹⁰⁹

However, in *Rio Grande Royalty Co, Inc. v. Energy Transfer Partners, L.P.*,¹¹⁰ defendants allegedly manipulated the Houston Shipping Channel (“HSC”) index, a pricing benchmark for natural gas for a two-year period. Plaintiffs’ alleged Defendants’ controlled prices through the benchmark manipulation for sales of fixed-price natural gas during bidweek which is the last week of the month. Out of a 24-month period, Plaintiffs alleged 10 times that defendants were able to manipulate the benchmark. The court found that this was insufficient to establish sustained monopoly power.¹¹¹

While pricing benchmark control does not always establish sufficient duration as evidenced by the *Rio Grande* case, it is clear that numerous benchmark manipulation cases establish significant duration control.¹¹² This is so because benchmark manipulators are

106. *Merced Irrigation District*, 165 F. Supp. 3d at 128-30.

107. *Id.*

108. *Id.* at 128, 142.

109. *Id.* at 128, 143; *see also*, *In re Commodity Exchange, Inc., Gold Futures*, 2017 WL 9480384 (U.S.D.C., S.D.N.Y.) (discussing the fixing period as 2004 through 2012 [at p. 2-3] for fixing the gold prices by fixing the benchmark).

110. *Rio Grande Royalty Co, v. Energy Transfer Partners*, 786 F. Supp. 2d 1202 (S.D. Tx. 2009).

111. *Id.* at 1213.

112. *Merced Irrigation Dist. v. Barclays Bank PLC*, 165 F. Supp. 3d 122, 128, 143 (S.D. N.Y. 2016). Some Sherman § 1 benchmark manipulation cases may be helpful in duration of price control issues. *See* Sharon E. Foster, *Libor Manipulation and Antitrust Allegations*, 11 DEPAUL BUS. & COM. L.J. 291, 299 (2013); *Sonterra Capital Master Fund, Ltd. v. Barclays*

often providing the input data upon which the benchmark relies. Absent significant oversight, it may take years to detect. This problem of detection is further complicated by the common benchmark manipulation practice of on-again-off-again manipulation. In essence, benchmark manipulation does not have to be a daily occurrence to be successful.¹¹³

B. WILLFUL ACQUISITION OR MAINTENANCE – THE CONDUCT PRONG

The “willful acquisition or maintenance” or “conduct prong” has variously been described as “exclusionary,” “predatory,” and “anticompetitive.”¹¹⁴ It prohibits “both concerted and unilateral behavior” that threatens actual monopolization.¹¹⁵ Numerous cases where the allegations included benchmark manipulation have satisfied the conduct prong.¹¹⁶

Manipulation of pricing benchmarks distort free market supply and demand pricing mechanisms.¹¹⁷ This has been alleged to be

Bank PLC, 366 F. Supp. 3d 516, 519 (S.D.N.Y. 2018) (LIBOR benchmark manipulated over five years); *In re Commodity Exch., Inc., Gold Futures and Options Trading Litigation*, 2017 WL 9480384 (S.D.N.Y. June 8, 2017) (plaintiffs alleged defendants fixed the pricing benchmark for physical gold and gold-denominated financial instruments for about eight years); Second Consolidated Amended Class Action Complaint at ¶6, *In re Foreign Exch. Benchmark Rates Antitrust Litig.*, 2015 WL 5924387 (S.D.N.Y. Sept. 21, 2015) (the foreign exchange benchmarks, FOREX manipulated approximately for ten years); *Order Instituting Proceedings Pursuant to Sections 6(c) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions*, CFTC No. 17-03, *Comm. Fut. L. Rep.* (Dec. 21, 2016).

113. Gina-Gail S. Fletcher, *Benchmark Regulation*, 102 IOWA L. REV. 1929, 1960 (2017).

114. *Pac. Bell Tel. Co. v. Linkline Commc'ns, Inc.*, 555 U.S. 438, 451 (2009); *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 222-24 (1993); *Aspen Skiing Co.*, 472 U.S. at 602-03; *Atl. Richfield Co. v. USA Petroleum Co.*, 495 U.S. 328, 340 (1990); Sharon E. Foster, *Systemic Financial-Service Institutions and Monopoly Power*, 60 CATH. U. L. REV. 357, 384-85 (2011).

115. *Merced Irrigation Dist.*, 165 F. Supp. 3d at 140 (citing *Copperweld Corp. v. Independence Tube Corp.*, 467 U.S. 752, 767 n. 13 (1984)).

116. *Wacker v. JP Morgan Chase & Co.*, 678 Fed. Appx. 27, 30-31(2nd Cir. 2017); *Merced Irrigation Dist.*, 165 F. Supp. 3d at 128-30; *In re Term Commodities Cotton Futures Litig.*, No. 12 Civ. 5126(ALC)(KNF), 2013 WL 9815198, at *24 (S.D.N.Y. Dec. 20, 2013); *In re Crude Oil Commodity Futures Litig.*, 913 F. Supp. 2d 41, 46-53 (S.D.N.Y.2012); *In re: Zinc Antitrust Litigation*, 2016 WL 3167192, at *15 (S.D.N.Y. June 6, 2016).

117. See *Merced Irrigation Dist.*, 165 F. Supp. 3d at 130 (“Those prices would be either artificially high, if Barclays held a “long” swap contract as a buyer and bought a high volume of daily contracts at inflated prices to raise the index price, or artificially low, if Barclays held a “short” swap contract as a seller and sold daily contracts at less-than-market prices to drive down the index price on the settlement date.”)

anticompetitive¹¹⁸ and constitutes market abuse.¹¹⁹ It also violates a main goal of antitrust law – to protect free markets.¹²⁰ Further, “[c]onduct may be characterized as exclusionary if it “does not further competition on the merits or does so in an unnecessarily restrictive way.”¹²¹ Manipulation of the pricing benchmark artificially inflates or deflates prices such as to constitute exclusionary and anticompetitive conduct.¹²² However, courts are reluctant to find an antitrust violation because of the fear of “false positives” which may undermine “incentive to innovate.”¹²³ Accordingly, the conduct prong looks to “willful acquisition or maintenance of [monopoly] power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident.”¹²⁴

In *In re Cotton Futures*, the complaint alleged manipulation consisting of an “interconnected series of uneconomic steps [and] highly unusual steps . . . contrary to the customs and practices of cotton market participants.”¹²⁵ Further, in *In re Crude Oil*, it was found that the manipulation conduct had “no rational business purpose other than its adverse effects on competitors.”¹²⁶ In *In re: Zinc*, the manipulation included fraudulent conduct to control warehouse prices so as to control SHG zinc prices which met the conduct prong.¹²⁷ Simply put, manipulation of pricing benchmarks is

118. *Id.*

119. Andrew Verstein, *Benchmark Manipulation*, 56 B.C. L. REV., 215, 219 (2015).

120. *City of Lafayette v. Louisiana Power & Light Co.*, 435 U.S. 389, 408 (1978); *United States v. Topco Assocs, Inc.*, 405 U.S. 596, 610 (1972); *Southern Motor Carriers Rate Conference, Inc. v. U.S.*, 471 U.S. 48, 62 (1985); *City of Columbia v. Omni Outdoor Advert., Inc.*, 499 U.S. 365, 388 (1991); *Fisher v. City of Berkeley*, 475 U.S. 260, 281 (1986) (citing to *Cnty. Commc’ns Co. v. City of Boulder*, 455 U.S. 40, 56 (1982)); *Hoover v. Ronwin*, 466 U.S. 558, 599 (1984) (citing to *Cnty. Commc’ns Co. v. City of Boulder*, 455 U.S. 40, 56 (1982)); Maurice E. Stucke, *Reconsidering Antitrust’s Goals*, 53 B.C. L. REV., 551, 560-62 (2012).

121. *Merced Irrigation Dist.*, 165 F. Supp. 3d at 128 (citing to *Meredith Corp. v. SESAC, LLC*, 1 F. Supp. 3d 180, 222 (S.D.N.Y. 2014) and *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 605 (1985)).

122. *Merced Irrigation Dist.*, 165 F. Supp. 3d at 128-30.

123. See *Shak v. JP Morgan Chase & Co.*, 156 F. Supp. 3d 462, 484-90 (S.D.N.Y. 2016) (citing to *Verizon Commc’ns v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 407 (2004)).

124. *Id.* (citing *PepsiCo, Inc. v. Coca-Cola Co.*, 315 F.3d 101, 105 (quoting *United States v. Grinnell*, 384 U.S. 563, 570-71)).

125. *In re Term Commodities Cotton Futures Litig.*, No. 12 Civ. 5126(ALC)(KNF), 2013 WL 9815198, at *24-25 (S.D.N.Y. Dec. 20, 2013).

126. *In re Crude Oil Commodity Futures Litig.*, 913 F. Supp. 2d 41, 56 (S.D.N.Y. 2012).

127. *In re: Zinc Antitrust Litigation*, 2016 WL 3167192, at *20 (S.D.N.Y. June 6, 2016).

anticompetitive.¹²⁸ However, if the conduct of alleged manipulation requires speculation that the conduct is uneconomic and does not establish anticompetitive knowledge and intent, the monopolization claim will fail.¹²⁹

VII. BENCHMARK REFORM

This section's focus is on Inter-bank Offered Rate ("IBOR") benchmark reform as it proposes a possible change from private, third-party input providers and administrators to government input providers and administrators. Other benchmarks, such as the ForEx benchmark, propose to maintain private input providers and administrators but enhance oversight and transparency.¹³⁰ In response to the LIBOR¹³¹ benchmark manipulation revelations, both international and domestic regulators moved to investigate and implement reforms to restore faith in market prices which had become totally dependent on benchmarks for pricing purposes. One of the first reports addressing this issue came out of the United Kingdom in the Wheatley Review (September 2012) addressing the manipulation of the LIBOR benchmarks.¹³² The Wheatley Review recommended reform of LIBOR not replacement.¹³³ Reform included verifying submissions against transaction data¹³⁴ and limiting the publication of LIBOR to those currencies and tenors that are supported by sufficient transaction data.¹³⁵ It also proposed that market participants should continue to play a significant role in the production and oversight of LIBOR.¹³⁶ Further, the Wheatley Review required replacing the administrator of LIBOR, the British Bankers Association, a trade association made-up of members in the financial

128. *Sonterra Capital Master Fund Ltd. v. Credit Suisse Group AG*, 277 F. Supp. 3d 521, 552 (2017) (citing *Gelboim v. Bank of America*, 823 F.3d 759 (2d Cir. 2016)).

129. *Shak*, 156 F. Supp. 3d at 484-90.

130. See, e.g., INT'L ORG. OF SEC. COMM'NS, SECOND REVIEW OF THE IMPLEMENTATION OF IOSCO'S PRINCIPLES FOR FINANCIAL BENCHMARKS IN RESPECT OF THE WM/REUTERS 4 P.M. CLOSING SPOT RATE (2017).

131. LIBOR is an Inter-bank Offered Rate ("IBOR").

132. THE WHEATLEY REVIEW OF LIBOR: FINAL REPORT (2012), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/191762/wheatley_review_libor_finalreport_280912.pdf.

133. *Id.* at 7.

134. *Id.* at 11-13.

135. *Id.* at 7.

136. *Id.*

services industry, with the Financial Services Authority, a state regulatory authority.¹³⁷

In 2014, the Financial Stability Board (“FSB”), an international body that makes recommendations regarding the global financial services industry,¹³⁸ made recommendations regarding the issue of IBOR benchmarks, like LIBOR. These recommendations included:

- strengthening of IBORs by anchoring them to a greater number of transactions, where possible, and improving the processes and controls around submissions;
- identifying alternative near-risk-free rates (RFRs) and, where suitable, encouraging market participants to transition new contracts to an appropriate RFR.¹³⁹

According to a December 18, 2019 Progress Report, IBOR reforms are progressing, but not yet implemented:

Since 2014, the work has been coordinated at the international level by the FSB’s Official Sector Steering Group (OSSG).

In July 2016 the OSSG formally launched a third major initiative, to improve contract robustness to address risks of discontinuation of widely-used interest rate benchmarks. The OSSG invited ISDA [International Swaps and Derivatives Association] to lead this work as it pertained to derivative contracts, which are the largest source of exposure to the IBORs. ISDA welcomed that invitation and has undertaken a significant programme of work in response.

Although all of the major IBORs have been strengthened since the OSSG was formed, FSB member authorities in certain jurisdictions have moved away from their original view that a “multiple-rate” approach, in which each IBOR could be made to be sustainable and potentially coexist with the RFR, was possible.

In particular, authorities have warned that there is an appreciable risk that LIBOR will end once official sector support for the benchmark ends at end-2021. There is also the risk that LIBOR could be found to no longer be representative of the underlying market it purports to measure, due to a lack of underlying transactions. This would have consequences for users covered by the

137. *Id.* at 11-12. As of April 2013, the Financial Services Authority has been replaced by the the Financial Conduct Authority and the Prudential Regulation Authority.

138. ABOUT THE FSB, FINANCIAL STABILITY BOARD, <https://www.fsb.org/about/> (last visited Mar. 3, 2021).

139. FINANCIAL STABILITY BOARD, REFORMING MAJOR INTEREST RATE BENCHMARKS, PROGRESS REPORT 4 (Dec. 18, 2019), <https://www.fsb.org/wp-content/uploads/P181219.pdf>.

EU Benchmarks Regulation (BMR). As the UK authorities have stated they will not compel panel banks to participate in LIBOR panels after end-2021, FSB member authorities consider that transition away from LIBOR is necessary, across the five LIBOR currencies (USD, EUR, JPY, GBP and CHF). Transition well before that date would greatly minimise risks to financial stability.¹⁴⁰

The Bank for International Settlements (“BIS”), an international organization of central bankers established to promote monetary and financial stability,¹⁴¹ recently stated that it is possible that multiple rates benchmarks may be necessary for the foreseeable future.¹⁴² One problem is that the alternative benchmarks, risk-free rates (“RFR”) do not provide

a close match to their marginal funding costs.¹⁴³ This would indicate that IBORs, such as LIBOR, may be reformed but not replaced.

The United States’ RFR LIBOR replacement is the Secured Overnight Financing Rate (“SOFR”). SOFR is based on the Treasury repurchase (“repo”) market. In general, the data input for SOFR is derived from “all trades in the Broad General Collateral Rate¹⁴⁴ plus bilateral Treasury repurchase agreement (repo) transactions cleared through the Delivery-versus-Payment¹⁴⁵ (DVP) service offered by the Fixed Income Clearing Corporation (FICC), a subsidiary of the Depository Trust & Clearing Corporation [a corporation providing services to the financial services sector] which is filtered to remove a

140. *Id.*

141. ABOUT BIS – OVERVIEW, BIS, <https://www.bis.org/about/index.htm?m=1%7C1> (last visited Mar. 3, 2021).

142. Andreas Schrimpf & Vladyslav Sushko, *Beyond LIBOR: A Primer on the New Benchmark Rates*, BIS Q. REV. 29 (2019).

143. *Id.* at 30.

144. “The Broad General Collateral Rate (BGCR) is a measure of rates on overnight Treasury general collateral repurchase agreement (repo) transactions.” *Broad General Collateral Rate Data*, FEDERAL RESERVE BANK OF NEW YORK, <https://apps.newyorkfed.org/markets/autorates/bgcr> (last visited Mar. 3, 2021). Basically, collateralized, overnight borrowing rates.

145. “Delivery versus payment (DVP) is a securities industry settlement method that guarantees the transfer of securities only happens after payment has been made. DVP stipulates that the buyer’s cash payment for securities must be made prior to or at the same time as the delivery of the security.” Alexandra Twin, *Delivery Versus Payment (DVP)*, INVESTOPEDIA (Mar. 12, 2020), [https://www.investopedia.com/terms/d/dvp.asp#:~:text=Delivery%20versus%20payment%20\(DVP\)%20is,the%20delivery%20of%20the%20security](https://www.investopedia.com/terms/d/dvp.asp#:~:text=Delivery%20versus%20payment%20(DVP)%20is,the%20delivery%20of%20the%20security).

portion of transactions considered ‘specials.’”¹⁴⁶ The data is collected by “DTCC Solutions LLC, an affiliate of the Depository Trust & Clearing Corporation. Each business day, the New York Fed publishes the SOFR on the New York Fed website at approximately 8:00 a.m. ET.”¹⁴⁷ The data is then calculated “as a volume-weighted median of transaction-level tri-party repo data”¹⁴⁸ While the New York Fed is an administrator and producer of SOFR,¹⁴⁹ the Depository Trust & Clearing Corporation, a non-governmental entity, provides some data input and administrative services as well. Accordingly, the administrator of SOFR appears to be a combined government/private sector data input provider and administrator.

Because SOFR is produced, at least in-part, by the New York Fed, a governmental agency, it is believed that the benchmark will be based on larger data input, more transparent and less susceptible to manipulation.¹⁵⁰ However, this is not necessarily the case. A little history here is helpful to understand why IBOR’s were used in the first place:

Prior to the ubiquitous use of LIBOR as an interest rate benchmark, other benchmarks were used more frequently like the Prime Rate based upon the Federal Reserve’s Discount Rate in the United States, which is the rate of interest the Federal Reserve charges banks to borrow funds. However, during the economic instability of the 1970s, inflation caused unacceptable fluctuations in interest rates creating concern about the stability and predictability of a central bank benchmark for interest rates, such as the Federal Reserve’s rate in the United States. Additionally, questions were raised about the use of a regulator’s (again like the Federal Reserve, which is a banking regulator in the United States) interest rates for benchmarks with respect to whether it truly reflected market conditions or, rather, reflected political policy.”¹⁵¹

146. *Secured Overnight Financing Rate Data*, FEDERAL RESERVE BANK OF NEW YORK, <https://apps.newyorkfed.org/markets/autorates/sofr> (last visited Mar. 3, 2021).

147. *Id.*

148. *Id.*

149. Lorie K. Logan, Senior Vice President, Fed. Reserve Bank of New York, *The Role of the New York Fed as Administrator and Producer of Reference Rates* (Jan. 9, 2018), <https://www.newyorkfed.org/newsevents/speeches/2018/log180109>.

150. David Bowman, *Templates for Using SOFR*, slide 2 (2019), https://www.newyorkfed.org/medialibrary/microsites/arcc/files/2019/Templates_for_Using_SOFR.pdf.

151. Sharon E. Foster, *Libor Manipulation and Antitrust Allegations*, 11 DEPAUL BUS. & COM. L.J. 291, 297 (2013).

It is rather ironic that the LIBOR interest rate benchmark was adopted due to concerns about politicizing the markets and that the replacement to LIBOR goes back to, at least in part, a Fed rate during a time when the markets are highly politicized. The Federal Reserve is currently intervening in the repo market due to liquidity concerns.¹⁵² While the Federal Reserve's mission includes the promotion of financial stability,¹⁵³ the tools it uses to achieve such stability includes market intervention – buying and selling in the market and providing low cost loans to financial institutions.¹⁵⁴ While such actions may promote financial stability, it bears no resemblance to a free market. It is also doubtful that SOFR will eliminate the conflicts of interest problems identified during the LIBOR scandal. Rather, it replaces the conflict of interest inherent in a benchmark system when end users of the benchmark are also input providers and/or administrators with a conflict of interest system prone to politicization where the market reflects political bias and favors; also known as crony capitalism. Unfortunately, U.S. markets currently reflect such crony capitalism.¹⁵⁵ That said, if IBOR benchmarks are converted to SOFR, it seems less likely sufficient control over the benchmarks could be established to evidence monopolization due to partial governmental data input and administration.

152. Jonnelle Marte, *New York Fed Tweaks Repo Operations as Market Functioning Improves* (June 11, 2020, 2:11 PM), REUTERS, <https://www.reuters.com/article/us-usa-fed-repo/new-york-fed-tweaks-repo-operations-as-market-functioning-improves-idUSKBN23I39Z>; Liz McCormick & Alex Harris, *The Repo Market's a Mess. (What's the Repo Market?)* (Sept. 28, 2019), WASHINGTON POST, https://www.washingtonpost.com/business/the-repo-markets-a-mess-whats-the-repo-market/2019/09/28/e8fd43b2-e1d8-11e9-be7f-4cc85017c36f_story.html.

153. FED. RESERVE, PROMOTING FINANCIAL SYSTEM STABILITY, https://www.federalreserve.gov/aboutthefed/files/pf_4.pdf.

154. *Id.*; McCormick & Harris, *supra* note 152.

155. Craig Torres, *Investors Clamor for the Fed to Slash Rates to Zero*, BLOOMBERG (March 12, 2020), <https://www.bloomberg.com/news/articles/2020-03-13/fed-pressed-to-be-hero-with-zero-interest-rates-as-trump-stalls>; Ann Saphir & Jonnelle Marte, *Fed Sees U.S. Economy on Track, Trump Renews Fed Gripes*, REUTERS (January 15, 2020, 10:26 AM) <https://www.reuters.com/article/us-usa-fed/fed-sees-u-s-economy-on-track-trump-renews-fed-gripes-idUSKBN1ZE2IW>; Patti Domm, *Federal Reserve Fends Off eEfforts to be Politicized by President Trump, For Now*, CNBC, MARKET INSIDER (May 2, 2019, 3:54 PM), <https://www.cnbc.com/2019/05/02/federal-reserve-fends-off-efforts-to-be-politicized-by-president-trump-for-now.html>; Jeanna Smialek, *Trump Says He Could Demote Fed Chair Powell, Risking More Market Turmoil*, N.Y. TIMES (March 14, 2020), <https://www.nytimes.com/2020/03/14/business/economy/trump-powell-fed-chair.html>.

VIII. CONCLUSION

Financial benchmarks are important and necessary given enormous size and structure of financial markets. Financial benchmarks can efficiently set price in these markets thus expediting commerce and investments. However, financial benchmarks depend upon human factors such as data input providers, administrators and end users. These three actors often overlap creating conflicts of interest and manipulation for self-interest.

Because financial benchmarks are the *de facto* and at times *de jure* price for the related asset, financial benchmarks control price. The ability to control price is a critical element of a monopolization claim. However, the mere ability to control price is not sufficient; defendants in a monopolization case must control price in an anticompetitive manner, such as by manipulating a financial benchmark for self-interest.

Many financial benchmark cases have established financial benchmark manipulation in general and monopolization in particular. Reforms are ongoing to reduce such private party manipulation by inserting governmental participation and oversight. Unfortunately, we live in times where government intervention in financial benchmark oversight may not lead to credibility in financial markets due to politicization of financial markets.
