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UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

SAN FRANCISCO DIVISION

In re: CATHODE RAY TUBE (CRT) ANTITRUST LITIGATION	**MDL No. 1917** **JAMS Ref. No. 1100054618**
This Document Relates to: ALL DIRECT ACTION CASES	**REPORT AND RECOMMENDATION REGARDING INDIRECT PURCHASER PLAINTIFFS' MOTION FOR CLASS CERTIFICATION**

To the Honorable Samuel Conti, United States District Judge:

On April 29, 2013, the Interim Special Master heard Indirect-Purchaser Plaintiffs' Motion for Class Certification. Having considered the moving papers, evidence and the arguments of the parties, and good cause appearing, the Interim Special Master now makes the following Report and Recommendation. For the reasons set forth below, it is recommended that the Court GRANT Plaintiffs' motion.

Introduction

This multi-district indirect purchaser state-law antitrust class action is pending before this Court based on diversity jurisdiction mandated by the Class Action Fairness Act ("CAFA"). The Honorable Charles A. Legge (Ret.) serves as Special Master, but with the parties' consent Judge Conti appointed the undersigned as Interim Special Master to hear and decide this motion while Judge Legge recuperates from a brief illness.

On October 1, 2012, Indirect Purchaser Plaintiffs ("plaintiffs") brought this motion seeking to certify 22 separate statewide damage classes under each state's antitrust/consumer protection laws pursuant to Rule 23(b)(3).[1] Plaintiffs define the class that they seek to certify in the following way:

> All persons and entities in [Indirect-Purchaser State[2]] who, from March 1, 1995 to November 25, 2007, as residents of [Indirect-Purchaser State], purchased Cathode Ray Tubes incorporated in televisions and monitors in [Indirect-Purchaser State] indirectly from any defendant or subsidiary thereof, or any named affiliate or any named co-conspirator, for their own use and not for resale. Specifically excluded from this Class are defendants; the officers, directors, or employees of any defendant; the parent companies and subsidiaries of any defendant; the legal representatives and

[1] Plaintiffs' motion was accompanied by the Declaration, an Errata to the Declaration, and a Rebuttal Declaration of Janet S. Netz, Ph.D. Defendants moved to strike Dr. Netz's expert testimony, and the Interim Special Master has recommended that their motion be denied. Report and Recommendation Regarding Defendants' Motion to Strike Proposed Expert Testimony, filed 6/20/13.

[2] "Indirect-Purchaser State" refers to the following jurisdictions, separately: Arizona, California, District of Columbia, Florida, Hawaii, Iowa, Kansas, Maine, Michigan, Minnesota, Mississippi, Nebraska, Nevada, New Mexico, New York, North Carolina, North Dakota, South Dakota, Tennessee, Vermont, West Virginia, and Wisconsin. The applicable class period for Hawaii, Nebraska, and Nevada begins from June 25, 2002, July 20, 2002, and February 4, 1999, respectively.

> heirs or assigns of any defendant; and the named affiliates and co-conspirators. Also excluded are any federal, state, or local governmental entities, any judicial officers presiding over this action, members of their immediate families and judicial staffs, and any juror assigned to this action.

Plaintiffs allege that defendant cathode ray tube ("CRT")[3] manufacturers and their named co-conspirators ("defendants") artificially inflated CRT prices by agreeing to fix prices, limit production and allocate market shares and customers of CRTs. Plaintiffs maintain that the evidence demonstrating the existence and effectiveness of this conspiracy is compelling, and that the overwhelming corpus of evidence is common to all putative class members. Specifically, plaintiffs assert, defendants' own documents, data and testimony unequivocally demonstrate that they conspired to fix the prices of CRTs and that this illegal conduct harmed members of the putative classes. Plaintiffs contend that this indirect purchaser case is the best vehicle to compensate American consumers who paid substantial overcharges as a result of defendants' unlawful conduct.

Defendants' Opposition was accompanied by the expert report of Dr. Robert D. Willig. According to defendants, certification is inappropriate in these circumstances because plaintiffs' price-fixing allegations involve a multitude of diverse products, incorporated as components into a multitude of differentiated and competitively-priced finished products, sold at different prices, at different times, to different customers, and under various competitive circumstances at each level of distribution. As a result, defendants maintain, it is not possible to establish with common proof that there was classwide impact to each member of the indirect consumer class. Instead, defendants argue, mini-trials would be required to determine whether individual class members suffered any injury.

Following the normal briefing, defendants submitted a letter brief discussing the recent Supreme Court decision in *Comcast Corp. v. Behrend*, No. 11-864, 569 U.S. ___, slip op. (2013). On April 9, 2013, plaintiffs filed a responsive letter brief.

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[3] CRTs are comprised of: (1) color picture tubes ("CPTs") used in televisions, and (2) color display tubes ("CDTs") used in computer monitors.

CRTs and the CRT Market

The following facts, drawn largely from plaintiffs' evidence, are not significantly in dispute. During the relevant period, the sales of CRTs were massive.[4] CRT televisions and monitors were the dominant form of display screens in the United States and worldwide until approximately 2004. Indeed, for most of the relevant period, North Americans purchased more CRT monitors than did consumers in any other region in the world. For CRT televisions and monitors, worldwide annual sales measured in the billions. Between 2000-2006, defendants controlled nearly 90% of worldwide CRT commerce. Netz Decl., pp. 3, 36.

Newcomers to the CRT manufacturing business faced significant barriers to entry. Such barriers included: (1) large capital expenditure requirements to build factories and production lines; (2) lengthy timelines (of approximately two years) to complete their production facilities and begin mass production; (3) a diminishing product utilization rate in an industry beset with excess capacity; and (4) an inability to use CRT production equipment for subsequent alternative manufacturing purposes. Netz Decl., pp. 23-27; Alioto Decl., ¶¶ 4-5, Exhs. 3-4. In addition, the technological know-how needed to manufacture CRTs lay almost exclusively with defendants, who, according to plaintiffs, entered into elaborate arrangements to share crucial intellectual property among themselves, enabling them to tightly control and dominate the multi-million dollar CRT industry. Alioto Decl. ¶¶ 6-7, Exhs. 5-6.

CRTs have no independent utility. Their only use is to incorporate them into finished products sold to consumers. Specifically, CRTs can only be used as components of finished products such as televisions, computer monitors, and other specialized applications. Netz Decl., ¶¶ 8-9, 94, Exhs. 7-8, 107. Thus, the demand for CRTs would not exist without the finished products, such as television and computer monitors, which are purchased by the class members.

CRTs are discrete parts. Direct purchasers buy CRTs to incorporate them into finished products. During the manufacture of these finished products, the CRT itself is not modified; it

[4] CRTs were the precursor to LCD and Plasma technology. Thus, once LCD and Plasma products became prevalent and desired in the market place, CRT-based products' market share began to decline.

remains a separate, physical object that does not change form or become indistinguishable once incorporated. Netz Decl., ¶¶ 10-11, Exhs. 9-10.

The CRTs are the most expensive component in the finished products into which they are incorporated, and CRTs account for a significant portion of the total retail price. The cost of the CRT typically represents between 50%-70% of the retail price of the finished product; the larger the CRT, the higher its proportional cost. Netz Decl., p. 114, n.388; Alioto Decl., ¶¶ 12, 94, Exhs. 11, 107.

CRT manufacturers sold CRTs to finished product manufacturers such as Sharp, Funai, Dell and Hewlett-Packard, either directly or through affiliated entities acting as distributors. In addition, many of the defendants, including Samsung, SDI, Hitachi, Panasonic, Toshiba, Philips and LGE, sold CRTs to their own corporate subsidiaries and affiliates that manufactured CRT finished products. CRT-finished product manufacturers sold the televisions and monitors to retailers (sometimes through a distributor) such as Best Buy, Wal-Mart, Costco and Target, and retailers in turn sold the products to class members. Some CRT finished product manufacturers also sold televisions and monitors directly to class members. Netz Decl., pp. 32-33. Class members include individual consumers and end-user businesses.

Parties' Contentions

A. Plaintiffs

Plaintiffs make the following contentions. Beginning at least as early as March 1995, defendants and their co-conspirators formed an illegal international cartel to restrict competition and fix prices for CRTs. Defendants carried out the conspiracy through frequent and systematic group and bilateral meetings in the United States and around the world. These meetings were called "Glass Meetings" which were organized into three levels: (1) "Top Meetings" or "CEO Meetings," which were attended by high-level executives, including presidents and CEOs and were held monthly during the early years of the conspiracy and quarterly later into the conspiracy; (2) "Management Meetings" which implemented agreements made at the Top Meetings. These were attended by high-level sales managers, and occurred more frequently, typically monthly; and (3) "Working-Level Meetings," which occurred often on a weekly basis

and were attended by lower-level sales managers. The function of the working-level meetings was largely to monitor and manage pricing on a weekly basis by verifying the respective defendants' implementation of prices agreed upon at the higher-level meetings. These working meetings were augmented by "Green Meetings," which occurred on golf courses often on the same day as a Glass Meeting "in order to make friendly contacts and strengthen mutual trust." Alioto Decl., ¶13, Exh. 12.

Defendants have admitted to attending hundreds of group and bilateral meetings with their competitors during the relevant period. *See* Alioto Decl., ¶¶ 33-34, Exhs. 32-43. These meetings led to industry-wide cooperation, including the sharing of information regarding pricing and production levels, agreements on pricing for the various sizes of CRTs and on pricing for specific customers, agreements to limit the production of CRTs, agreements to allocate customers and market shares, and agreements on methods to monitor each other's compliance with the agreements reached. Alioto Decl., ¶¶ 16-32, Exhs. 15-31. These meetings also led to an agreement regarding a formal, comprehensive auditing plan which enforced defendants' agreement to limit CRT production and provided a process for policing cheating. Alioto Decl., ¶¶45-48, Exhs. 44-47; ¶¶ 28, 50-51, Exhs. 27, 49-50.

Plaintiffs also maintain that defendants actively concealed the existence of their unlawful price-fixing practices: they limited the number of attendees at the meetings; asked participants to refrain from taking notes and listing meeting attendees; frequently reminded participants of the need for secrecy and to destroy conspiratorial communications after reading them; agreed upon false and pretextual reasons for price increases; agreed upon which attendee would communicate the price change to which customer; quoted higher prices to certain customers than the fixed price to give the appearance that the price was not fixed; and used agreed-upon code words, single letters and acronyms to hide the existence, attendees and content of the meetings. Alioto Decl., ¶¶ 53-55, Exhs. 52-54.

American and international governmental agencies began investigating defendants' practices in 2007. For example, defendants are currently being investigated by: the U.S. Department of Justice ("DOJ"), the European Commission ("EC"), the Japanese Fair Trade

Commission ("JFTC"), the Korean Fair Trade Commission ("KFTC"), the Canadian Competition Bureau ("CCB") and the Czech Office for the Protection of Competition ("COPC"). Alioto Decl., ¶¶ 56-75, Exhs. 55-74.

In the United States to date, the DOJ investigation has resulted in a guilty plea by Samsung SDI Co., Ltd. for violations of the Sherman Act, 15 U.S.C. §1, and a $32 million fine, as well as indictments of three former Chunghwa executives, one former Samsung SDI executive, and two former LG Philips Displays executives, all for violations of Section 1 of the Sherman Act. Alioto Decl., ¶¶ 56-58, Exhs. 55-57; ¶¶ 61-65, Exhs. 60-64.

Internationally, the JFTC found that 11 CRT manufacturers had violated Article 3 of Japan's Antimonopoly law by conspiring to fix the prices of CPTs used in the manufacture of televisions. Fines imposed on 7 of the 11 companies totaled approximately JPY 4,255 billion (USD 48 million). Alioto Decl., ¶ 66, Exh. 65. In addition, the KFTC imposed fines totaling approximately KRW 26.271 million (USD 23.5 million) against Samsung SDI Co., Ltd., LG Philips Display Korea Co., Ltd, Chunghwa Picture Tubes, Ltd. and two Chunghwa subsidiaries for conspiring to fix CRT prices and reduce supply from 1996 through 2006. Alioto Decl., ¶ 68, Exh. 67. Finally, the COPC fined Chunghwa Picture Tubes Ltd., Technicolor SA, Panasonic Corporation, MT Picture display Co., Ltd., and Toshiba Corporation a combined 51.8 million koruna (USD 2.7 million) for their alleged involvement in the price-fixing cartel that ran from 1998 to 2004. Alioto Decl., ¶¶ 72-74, Exhs. 71-73.

Plaintiffs also contend that most of the defendants, and many of their executives and employees, participated in the related LCD conspiracy. The LCD conspiracy, plaintiffs explain, resulted in guilty pleas, convictions, settlements and substantial fines against numerous individuals and companies. The methodologies that defendants used in both conspiracies are strikingly similar. For example, they both implemented the conspiracy through a system of highly organized, three-tiered meetings.

Finally, plaintiffs contend that defendants' conspiracy harmed all class members. Specifically, defendants' price-fixing agreements increased all CRT prices, and these price increases were passed through to class members. Plaintiffs assert that defendants accomplished

this in a variety of ways. First, defendants' pricing negotiations with their customers started from price points set by defendants at anticompetitive levels. For example, at the Glass Meetings, defendants agreed upon "price guidelines" (often referred to as "PGLs"), "bottom prices," or "baseline prices" for CPTs and CDTs, which often led to agreed-upon pricing for their large or "top tier" customers. These prices then acted as a floor or "baseline" pricing for others customers. Alioto Decl., ¶¶ 79-81, Exhs. 92-94. Similarly, defendants also employed "Most Favored Customer" pricing with their larger customers. The CRT pricing to these MFC customers acted as a floor for all prices for similar CRTs, thereby ensuring that prices were implemented across-the-board to all customers. Alioto Decl., ¶¶ 87-89, Exhs. 100-102; Netz Decl., pp. 43, 57-58. Defendants also agreed to specific "price differentials" between pricing offered to large customers versus small customers or internal versus external customers. Alioto Decl., ¶¶ 82-83, Exhs. 95-96. When combined with the price "floors," discussed, *supra*, these differentials ensured that CRT prices were artificially elevated for all customers.

Plaintiffs also maintain that defendants maintained structured price gaps between their different product offerings such that an increase in the price of one type of CRT product would result in an increase in their other CRT products. In this way, if Defendants artificially raised one type of CRT pricing, the pricing for all CRTs would be raised as well. *See* Netz Decl., pp. 65-66. Plaintiffs also point to defendants' highly centralized pricing decisions, which, Plaintiffs contend, facilitated defendants' ability to implement the prices set at the meetings with their competitors and ensured that all customers paid the same or similar prices for a given CRT product. And finally, relying on Dr. Netz's report, Plaintiffs maintain that defendants' artificial CRT price increases were passed through to end-user consumers.

B. Defendants

Defendants' argument focuses on the differences within the CRT industry and how those differences impacted CRT and CRT finished product pricing. Specifically, defendants' first focus on the industry's diverse products, which are subject to different costs and are subject to different forces of supply and demand. For example, CPTs and CDTs were not interchangeable – they have unique technical standards, different components and dissimilar size ranges. Willig

Decl., ¶¶ 39-41. Moreover, CPTs and CDTs were not in the same relevant product market; CPDs were purchased by consumers interested in televisions and CDTs were purchased by consumers interested in computers.

Further, CDTs and CPTs themselves are highly diverse. They contain many products that differed in "application, size, shape, finish and mask type." And the products contained "different resolutions" and used "various coatings," depending on each purchaser's specifications. Netz Decl., pp. 16, 20.; Willig Decl. ¶¶ 39-41. Thus, Defendants maintain, CRTs manufactured by one company could not readily be substituted for a CRT from a different manufacturer. As a result, the price for even the same type and size of CRT would vary substantially based on its customization and the manufacturer's reputation, making it difficult to compare prices across the entire CRT field. In addition, prices would vary among CRTs based on different competitive forces such as the early impact that LCDs had on CRT monitors.

Defendants also note that finished CRT products (*i.e.*, televisions and monitors) were not interchangeable and were subject to disparate market forces. For example, Defendants maintain, CRT televisions and monitors had different distribution and sales chains, internal sales teams, brand reputations and customers. And within each size category of televisions and monitors, CRT products were highly differentiated. For example, there were tiers of finished products with dissimilar technological and user features that competed on different terms, such as larger or premium CRT televisions that featured stereo sound, built-in VCR or other amenities. According to defendants, these differences would naturally make the product more expensive for the consumer to purchase.

Defendants also argue that during the putative class period, CRTs and finished CRT products were a dying technology; thus, the rapid decline in demand, prices and profits negate any inference of common proof of classwide injury. Specifically, defendants contend, the evolving decrease in demand caused a corresponding drop in CRT and CRT-product prices and profits, making it impossible for manufacturers of CRT televisions and monitors to pass on any or all of the alleged overcharges on CRTs to their customers. Retailers, therefore, did not uniformly pass on to the consumer the alleged increase in price. Rather, pass-through rates

varied from store to store on a case-by-case basis. Cole Decl., Exh. 30, Costco Tr. 106:4-14; 109:1-1101:21; 114:16-115:22; 122:17-123:21; 125:5-17.

Defendants also focus on the varying distribution and manufacturing channels for CRTs and finished CRT products, which further contributed to wide variations in pricing. For example, defendants point to the fact that tube manufacturers first sold CRTs to either a manufacturer of a finished CRT product or to a distributor, who would then resell the finished CRT product to the manufacturer. Netz Decl., pp. 29-30. And the finished product manufacturers sometimes sold the product directly to consumers or to another layer of distributors or to retailers. These differing distribution channels would greatly impact the final cost of the finished CRT product to the consumer, as would the variations in the type of retailers who sold finished CRT products. These retailers included brick-and-mortar specialty stores like Best Buy, Circuit City or Office Depot and department stores like Macy's and Sears, with higher overhead, prices and costs. They also included lower-cost internet sites like Amazon.com and discount stores like Wal-Mart, Target and Costco.

Defendants also focus on the fact that pricing of both CRTs and CRT finished products varied widely from supplier to supplier, product to product, type of retailer, within retailers and customer to customer over time. For example, purchasers of CRTs and finished CRT products frequently received, to varying degrees and in varying amounts, discounts, credit terms, price protection, shipping and "lead time" guarantees, rebates and other special sales terms, all of which affected the final price. Moreover, the price of finished CRT products were constantly in flux, as evidenced by Best Buy's PMK's testimony that procurement costs of finished CRT products were subject to weekly negotiations with vendors. Cole Decl., Exh. 1, Best Buy Tr. 157:21-158:8.

Defendants also contend that customers who bought CRTs or finished CRT products in large volumes or otherwise possessed significant buying power were able to extract more favorable pricing than smaller customers could. Similarly, global customers sometimes received different pricing than regional or local customers.

Defendants also argue that retailers had different pricing practices and strategies that could result in pricing differentials. For example, store prices at Best Buy could be subject to weekly changes based on unique promotional opportunities, the competitive landscape, inventory overstock and multiple other situations. In addition, Best Buy store managers at times had the discretion to negotiate prices with individual consumers in order to close the sale. Cole Decl., Ex. 1, Best Buy Tr. 77:13-78:20; 102:15-103:6. And Costco could charge lower prices for the same finished CRT product sold by its competitors because of its unique membership strategy. Cole Decl., Exh. 30, Costco Tr. 25:7-23.

Legal Discussion

A. Legal Standards for Class Certification

Class actions play an important role in the private enforcement of antitrust actions. *In re Citric Acid Antitrust Litigation*, No. C-95-2963 FMS, 1996 WL 655791 at *8 (N.D.Cal., October 2, 1996). Thus, subject to the requirements of Rule 23, "courts resolve doubts in these actions in favor of certifying the class." *In re Rubber Chemicals Antitrust Litigation*, 232 F.R.D. 346, 350 (N.D. Cal. 2005). "Courts have stressed that price-fixing cases are appropriate for class certification because a class-action lawsuit is the most fair and efficient means of enforcing the law where antitrust violations have been continuous, widespread, and detrimental to as yet unidentified consumers." *In re TFT-LCD (Flat Panel) Antitrust Litigation (LCDs)*, 267 F.R.D. 583, 592 (N.D. Cal. 2010), *amended in part*, 2011 WL 3268649 (N.D. Cal. July 28, 2011) (internal citations omitted).

"As a threshold matter, and apart from the explicit requirements of Rule 23(a), the party seeking class certification must demonstrate that an identifiable and ascertainable class exists." *Mazur v. eBay Inc.*, 257 F.R.D. 563, 567 (N.D.Cal.2009) (since class would include non-harmed auction winners, this portion of the class definition was imprecise and overbroad). "A class definition should be precise, objective, and presently ascertainable." *Id.* at 567 (citation omitted). The class definition must be sufficiently definite so that its members can be ascertained by reference to objective criteria. *Whiteway v. FedEx Kinko's Office and Print Servs., Inc.*, No. C 05-2320 SBA, 2006 WL 2642528 at *3 (N.D.Cal. 2006, September 14, 2006). "[A] class will be

found to exist if the description of the class is definite enough so that it is administratively feasible for the court to ascertain whether an individual is a member." *O'Connor v. Boeing North American, Inc.*, 184 F.R.D. 311, 319 (C.D.Cal. 1998).

Once it has been shown that the class is sufficiently ascertainable, the plaintiff then bears the burden of demonstrating, by a preponderance of the evidence, that each element of Rule 23 is satisfied. *Gen. Tel. Co. v. Falcon*, 457 U.S. 147, 158-61 (1982); *Doninger v. Pac. Nw. Bell, Inc.*, 564 F.2d 1304, 1308 (9th Cir.1977). Rule 23(a) requires proof that: (1) the class is so numerous that joinder of all members is impracticable (numerosity); (2) questions of law or fact exist that are common to the class (commonality); (3) the claims or defenses of the representative parties are typical of the claims or defenses of the class (typicality); and (4) the representative parties will fairly and adequately protect the interests of the class (adequacy of representation). A plaintiff must also establish that one or more of the grounds for maintaining the suit are met under Rule 23(b). Those grounds include: (1) that there is a risk of substantial prejudice from separate actions; (2) that declaratory or injunctive relief benefitting the class as a whole would be appropriate; or (3) that common questions of law or fact predominate and the class action is superior to other available methods of adjudication. Fed.R.Civ.P. 23(b); *Zinser v. Accufix Research Institute, Inc.*, 253 F.3d 1180, 1186 (9th Cir. 2001).

At times, Rule 23 requires "the court to probe behind the pleadings before coming to rest on the certification question." *Wal-Mart Stores, Inc. v. Dukes*, 131 S.Ct. 2541, 2552 (2011). Under those circumstances, certification is proper only if "the trial court is satisfied, after a rigorous analysis, that the prerequisites of" Rule 23 have been satisfied. *Id.*; *Comcast v. Behrend*, No. 110864, 569 U.S. ___, slip op. (2013). Frequently that "rigorous analysis" will entail some overlap with the merits of the plaintiff's underlying claim. That cannot be helped because "the class determination generally involves considerations that are enmeshed in the factual and legal issues comprising the plaintiff's cause of action." *Id.*; *see also Chavez v. Lumber Liquidators Inc.*, No. CV 09-4812 SC, 2012 WL 1004850 at *3 (N.D.Cal. March 26, 2012). "The more complex determinations required in Rule 23(b)(3) class actions entail even greater entanglement with the merits." *Coopers & Lybrand v. Livesay*, 437 U.S. 463, 469 & n.12 (1978) (emphasis and

citations omitted). That said, Rule 23 does not require a plaintiff seeking class certification to prove that each element of his or her claim is susceptible to classwide proof. It merely requires that the plaintiff must prove that common questions predominate over any questions affecting only individual class members. *Amgen Inc. v. Connecticut Retirement Plans and Trust Funds*, 133 S.Ct. 1184, 1196 (2013). Rule 23 does not grant courts license to engage in free-ranging merits inquiries at the certification stage. "Merits questions may be considered to the extent – but only to the extent – that they are relevant to determining whether the Rule 23 prerequisites for class certification are satisfied." *Id.* at 1194-95.

With regard to the inquiry required specifically under Rule 23(b)(3)'s predominance standard, this "inquiry tests whether proposed classes are sufficiently cohesive to warrant adjudication by representation." *In re Wells Fargo Home Mortgage Overtime Pay Litigation,* 571 F.3d 953, 956 (9th Cir. 2009). The "office of a Rule 23(b)(3) certification ruling . . . is to select the method best suited to adjudication of the controversy fairly and efficiently." *Amgen, supra*, 133 S.Ct. at 1191 (internal quotations omitted). It requires a showing that questions common to the class predominate, not that those questions will be answered, on the merits, in favor of the class. *Id.* The rule's objective is to promote economy and efficiency in actions that are primarily for money damages. Where common questions "predominate," a class action can achieve economies of time, effort, and expense as compared to separate lawsuits, permit adjudication of disputes that cannot be economically litigated individually, and avoid inconsistent outcomes, because the same issue can be adjudicated the same way for the entire class. Fed.R.Civ.P. 23(b)(3) advisory committee's note (1966).

B. Ascertainability

As noted above, a class will be found to exist if the description of the class is precise, objective and definite enough so that it is administratively feasible for the court to ascertain whether an individual is a member. *O'Connor*, 184 F.R.D. at 319. Defendants maintain that plaintiffs have failed to meet this burden because the process of determining class membership will require significant fact-based inquiries. Specifically, defendants contend, because none of the proposed class members bought CRTs directly, few, if any, class members will readily know

if their televisions or computers contain a CRT manufactured by one of the defendants or their alleged co-conspirators. In support of their argument, defendants point to the testimony of representative plaintiffs. According to defendants, named plaintiff Barry Kushner does not know which company manufactured the CRT in either of the two televisions that serve as the basis for his claim, and the same is true for Frank Warner, Gary Hanson, Lisa Reynolds, Margaret Slagle, Gloria Comeaux, Lawyer's Choice, Kerry Lee Hall, Janet Ackerman, Albert Crigler, Jeffrey Figone, Samuel Nasto, Brian Luscher, Steven Ganz, Louis Wood and David Rooks. *See* Cole Decl. Ex. 61, Kushner Tr. 22:10-17, 55:22-56:2; Opp., p. 43, n.61 (providing respective transcript citations for each IPP). And Plaintiffs Jeffrey Figone and Albert Crigler, defendants assert, do not even know if their products contain CRTs at all. *Id.* Ex. 68, Figone Tr. 68:6-6-69:16; Ex. 67, Crigler Tr. 88:11-19.

Defendants dismiss class counsel's argument that the named plaintiffs could easily open the back of their televisions and monitors by unscrewing a few screws in order to examine the CRTs inside. For one thing, some putative class members may no longer have the televisions or computers at issue since the class period runs from 5 to 17 years ago. Even if they still have the equipment, defendants assert there is no way for them to determine who made the CRTs..

The Interim Special Master finds defendants' stated concerns unpersuasive. The class definition here is based on objective criteria: class members must reside in one of the 22 states; they must have made a purchase during the class period; their purchase must have been for the class member's own use and not for resale; and the product must contain a CRT made by one of the defendants, their affiliates, or alleged co-conspirators. *See LCDs*, 267 F.R.D. 583, 592-93 (N.D. Cal. Mar. 28, 2010). Plaintiffs convincingly point out that class members can identify the tube manufacturer of their television or computer by referencing the product model number printed on the *outside* of the unit. The model number can then be matched with the corresponding service guides, service manuals and other publically available information to reveal the tube number, which is unique to a specific manufacturer. Alioto Reply Decl. at ¶ 5. Alternatively, mechanically adept class members can identify the tube manufacturer of their unit by removing the screws from the back of the product and viewing the name of the tube maker or

the tube number, which is typically printed in large, gold letters on the tube itself. Alioto Reply Decl. at pp. 3-4. This information can then be submitted by plaintiffs as part of any potential claims process.

Moreover, Plaintiffs have submitted evidence showing that during the class period defendants controlled approximately 90% of the CRT commerce worldwide. Thus, since approximately nine out of every ten finished CRT products sold in the United States contained a CRT made by one of the defendants or their co-conspirators, the universe of products containing non-defendant CRTs is very small. Netz Decl., Exhs. 1, 5 and 6. Further, even if some individuals join the class and it is then determined that their units did not contain Defendants' CRTs, this does not preclude class certification. *Kohen v. Pac. Inv. Mgmt. Co.*, 571 F.3d 672 (7th Cir. 2009) ["a class will often include persons who have not been injured by the defendant's conduct . . . [but] [s]uch a possibility or indeed inevitability does not preclude class certification"]. At the certification stage of class proceedings, the class need not be actually ascertainable; objective ascertainability is sufficient. *In re OSB Antitrust Litigation*, No. 06-826, 2007 WL 2253418 at *9 (E.D. Pa. August 3, 2007) ["Because the proposed class need only be ascertainable by some objective criteria, not actually ascertained, challenges to individual claims based on class membership may be resolved at the claims phase of the litigation]; *O'Connor*, 184 F.R.D. at 319 ["As long as the general outlines of the membership of the class are determinable at the outset of the litigation, a class will be deemed to exist."]

Plaintiffs have met their burden. The class is sufficiently ascertainable under Rule 23.

C. Rule 23(a)(1): Numerosity

Rule 23(a)(1) requires that a class be so numerous that joinder of all members is impracticable. Plaintiffs do not need to state the exact number of potential class members, nor is a specific number of class members required to satisfy this prong. *Bates v. United Parcel Service,* 204 F.R.D. 440, 444 (N.D. Cal.2001). A court may make common sense assumptions to support a finding that joinder would be impracticable. 1 Robert Newberg, *Newberg on Class Actions,* § 3:3 (4th Ed.2002) ["Where the exact size of the class is unknown but general knowledge and common sense indicate that it is large, the numerosity requirement is satisfied."].

In addition, the fact that a class is geographically dispersed, and that class members are difficult to identify, supports class certification. *Id.* at § 3:6; *Haley v. Medtronic, Inc.*, 169 F.R.D. 643, 648 (C.D.Cal. 1996).

Here, plaintiffs have satisfied Rule 23(a)(1)'s numerosity requirement. Joinder of all members of the state classes – consumers who purchased CRT finished products – would be impracticable. Membership in the classes is alleged to include "thousands" of members in the Indirect-Purchaser Statewide Classes, with all members geographically dispersed throughout the United States. *See,* IP Third Consolidated Amended Complaint ("IP CAC"), ¶¶ 233-234. The class, therefore, is sufficiently numerous.

D. Rule 23(a)(2): Common Questions of Law and Fact

Rule 23(a)(2) requires Plaintiffs to demonstrate the existence of questions of law and fact that are common to the class. Fed.R.Civ.P. 23(a)(2) This requirement is met if plaintiffs' claims "stem from the same source." "The existence of shared legal issues with divergent factual predicates is sufficient, as is a common core of salient facts coupled with disparate legal remedies within the class." *Hanlon v. Chrysler Corp.*, 150 F.3d 1011, 1019 (9th Cir. 2008) [all claims related to defective part in Chrysler minivans]. "Where an antitrust conspiracy has been alleged, courts have consistently held that the very nature of a conspiracy antitrust action compels a finding that common questions of law and fact exist." *In re Dynamic Random Access Memory (DRAM) Antitrust Litig.*, No. M 02-1486 PJH, 2006 WL 1530166 at *3 (N.D. Cal., June 5, 2006).

Plaintiffs assert that questions of law and fact common to the class include: (1) whether defendants formed and operated a conspiracy to fix, raise, maintain, or stabilize the prices of CRTs; (2) whether defendants' conspiracy resulted in an unlawful overcharge on the price of CRTs; (3) whether the unlawful overcharge on the price of CRTs was passed-through to the indirect purchasers of CRT finished products; and (4) whether the overcharge to indirect purchasers can be calculated using a common, formulaic method.

Defendants do not dispute that there are some common issues of law and fact for purposes of Rule 23(a)(2). Instead, they contend that plaintiffs cannot demonstrate the Rule

23(b)(3) requirement that common issues predominate over individualized questions. The Interim Special Master finds that plaintiffs met their burden under the commonality requirement of Rule 23(a)(2), and will address the issue of predominance below.

E. Rule 23(a)(3) and (a)(4): Typicality and Adequacy

Under Rule 23(a)(4), class certification is only permitted if "the representative parties will fairly and adequately protect the interests of the class." Fed.R.Civ.P. 23(a)(4). This factor requires: (1) that the proposed representative class members do not have conflicts of interest with the proposed class; and (2) that the proposed representative class members are represented by qualified and competent counsel. *See Hanlon,* 150 F.3d at 1020. Defendants do not challenge the qualifications or competency of plaintiffs' counsel, and the Interim Special Master concurs that plaintiffs' counsel are qualified and competent to litigate this case.

However, defendants do challenge the adequacy of the class representatives, contending that, "Plaintiffs have submitted literally no evidence from which the Court could conclude that any of the proffered individuals are typical of, and adequate to represent, the class." Opp. at 46. Under Rule 23(a)(3)'s permissive standards, representative claims are "typical" if they are "reasonably co-extensive with those of absent class members; they need not be substantially identical." *Hanlon*, 150 F.3d at 1020. Differences as to the various products purchased, the methods of purchase, or the amount of damage sustained by individual plaintiffs do not negate a finding of typicality, provided the cause of action arises from a common wrong. *Thomas & Thomas Rodmakers Inc. v. New Port Adhesives & Composites Inc.*, 209 F.R.D. 159, 164 (C.D. Cal. 2002); *In re Vitamins Antitrust Litig.*, 209 F.R.D. 251, 261 (D.D.C. 2002).

Specifically, defendants maintain, plaintiffs have provided no declarations or deposition testimony from the putative representatives attesting to their ability and willingness to represent consumers from their respective states. For example, thirteen putative class representatives testified that they did not know whether they purchased a product containing a CRT manufactured or sold by a defendant or one of the alleged co-conspirators. *See* Opp., p.47, n.67. In addition, defendants assert, several putative representatives failed to establish that they made

their purchases in the relevant state or while a resident of the state at issue. Defendants point to the testimony of Lawyer's Choice, the putative representative for the District of Columbia, who testified that it is possible that the purchases were made in Florida. Cole Decl. Exh. 53, Lawyer's Choice Suites, Inc. Tr. 114:5-115:23. And defendants point to the testimony of Frank Warner, the putative representative for Tennessee, who testified that he moved out of Tennessee in 1997 and that he cannot establish that he was a resident of Tennessee at the time that he made any of the purchases at issue. Cole Decl., Exh. 58, Warner Tr. 10:19-13:1; Cole Decl. Exh. 78, Warner Exh. 4.

Despite these snippets from deposition testimony, the Interim Special Master finds defendants' arguments unpersuasive. The threshold knowledge required of the class representatives is low. "[A] party must be familiar with the basic elements of her claim, and will be deemed inadequate only if she is startlingly unfamiliar with the case. It is not necessary that a representative be intimately familiar with every factual and legal issue in the case." *Moeller v. Taco Bell Corp.*, 220 F.R.D. 604, 611 (N.D.Cal.2004). With regard to the thirteen individuals discussed by defendants, *supra*, plaintiffs have now confirmed that they did, in fact, purchase a television or computer containing one of defendants' CRTs. And with regard to the putative class representative for the District of Columbia – Lawyer's Choice – this representative repeatedly testified that the purchase was made in the District of Columbia and that the District of Columbia is where the purchase was shipped. Alioto Reply Decl. Ex. 17, Guttman Tr. 19:5-18, 65:16-22; 66:19-24; 113:10-20; 114:5-17; 114:23-25. The fact that this individual also testified that it was "conceivable" that he made the purchase in Florida does not disqualify him from representing the class. With regard to the putative class representative for Tennessee – Mr. Warner – even though plaintiffs have conceded that he is not an adequate class representative, plaintiffs have also introduced testimony from Albert Sidney Crigler who, independent of Mr. Warner, adequately represents the class. Alioto Reply Decl. at ¶4(b) (discussing Albert Sidney Crigler's CRT purchase); ¶15 (referencing Mr. Crigler's testimony regarding his adequacy as a class representative). Defendants further contend that the putative Class Representatives have not shown that they are able to adequately protect the interests of the class. Opp. at p. 46. In

response, plaintiffs provided testimonial evidence demonstrating that the putative class representatives have knowledge of the case and that they are willing and able to protect the interests of the class. Alioto Reply Decl. at ¶ 15, Appendix A. Thus, the putative Class Representatives satisfy the adequacy requirement of Fed. R. Civ. P. 23(a)(4).

Plaintiffs have met their burden under the typicality and adequacy requirements of Rule 23(a)(3) and (a)(4).

F. Rule 23(b): Predominance and Superiority

In addition to satisfying the requirements of Rule 23(a), plaintiffs must also establish that one or more of the grounds for maintaining this suit are met under Rule 23(b). Those grounds include: (1) risk of substantial prejudice from separate actions; (2) that declaratory or injunctive relief benefitting the class as a whole would be appropriate; or (3) that common questions of law or fact predominate and the class action is superior to other available methods of adjudication. *See* Fed.R.Civ.P. 23(b). Plaintiffs base their certification motion on Rule 23(b)(3) – predominance and superiority. Defendants vigorously dispute that plaintiffs have met their burden.

"To qualify for certification under Rule 23(b)(3), a class must meet two requirements beyond the Rule 23(a) prerequisites: Common questions must 'predominate over any questions affecting only individual members'; and class resolution must be 'superior to other available methods for the fair and efficient adjudication of the controversy.'" *Amchem Prods. Inc. v. Windsor,* 521 U.S. 591, 615 (1997). "When common questions present a significant aspect of the case and they can be resolved for all members of the class in a single adjudication, there is clear justification for handling the dispute on a representative rather than on an individual basis." *Hanlon,* 150 F.3d at 1022 (internal quotations omitted).

Courts do not require that plaintiffs show common proof on each element of their claim. Rather, "[i]n price-fixing cases, courts repeatedly have held that the existence of the conspiracy is the predominant issue and warrants certification even where significant individual issues are present." *Newport, Inc.,* 209 F.R.D. at 167. "[C]ommon liability issues such as conspiracy or monopolization have, almost invariably, been held to predominate over individual issues." 6

Newberg on Class Actions, at § 18.25. However, in indirect purchaser actions, courts require plaintiffs to demonstrate that a defendant overcharged its direct purchasers for the product at issue and that those direct purchasers then *passed on* the overcharges to indirect purchasers. *Somers v. Apple. Inc.,* 258 F.R.D. 354, 358 (N.D. Cal.2009). To satisfy Rule 23(b)(3), an indirect purchaser plaintiff must therefore establish a reliable method for proving common impact—the overcharge pass-through—on indirect purchasers as a class. *Id.* at 361. Absent such a showing, motions for class certification are regularly denied. *Id.* [declining to certify class of indirect purchasers of iPods where plaintiffs failed to show how all class members suffered injury as a consequence of defendant's alleged anti-competitive activity].

1. Predominance[5]

Consideration of whether questions of law or fact common to class members predominate begins with the elements of the underlying causes of action. *Erica P. John Fund, Inc. v.*

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[5] The parties vigorously dispute the applicability of four key cases to the predominance question: (1) *LCDs*, 267 F.R.D. at 583; (2) *In re Static Random Access Memory ("SRAM") Antitrust Litig.*, 264 F.R.D. 603 (N.D.Cal. 2009); (3) *In re Flash Memory Antitrust Litig.*, No. 07–0086, 2010 WL 2332081 (N.D. Cal. June 9, 2010) ["*Flash Memory*"]; and (4) *In re Graphics Processing Units Antitrust Litig.*, 253 F.R.D. 478 (N.D. Cal. 2008) ["*GPU*"]. In the first two cases, Dr. Netz's methodology was deemed sufficient to support class certification. In the second two, her methodology was rejected. The Interim Special Master finds this case more analogous to the *LCDs* and *SRAM* decisions and therefore applies those courts' reasoning herein. In *LCDs*, the components, their products and their distribution channels were similar to CRTs, and both cases involve some of the same defendants and at least one defendant in each case has pleaded guilty to antitrust violations. *LC Ds*, 267 F.R.D. at 587-89, 588. Dr. Netz used similar analyses and proposed similar regression approaches in both cases and reached similar conclusions, *Id.* at 601, 603. And in *LCDs*, defendants raised objections similar to those that defendants have raised here, which the court ultimately rejected. *Id.* at 597-98, 603-606. In *SRAM*, the court certified the class despite the fact that it involved market, distribution and product characteristics much more complex than those at issue here, concluding that "divergent pricing and sales practices are not necessarily an impediment to measuring pass-through" and that "many other markets have the same features as the markets at issue here, and those markets are routinely tested for relationships among variables of interest." *SRAM*, 264 F.R.D. at 614. And the evidence in *SRAM* also showed that defendants possessed a far smaller market share, making certification even more compelling here. *Id.* at 605, 606. *GPU* and *Flash Memory* are distinguishable from the present case on a number of grounds. First, as the court noted in *LCDs*, in *GPU*, (1) there were no guilty pleas or ongoing criminal investigations as there were in *LCDs*, and *GPU* therefore lacked that "extrinsic evidence of harm;" and (2) the products involved in *GPU* were customized and not fungible. *LCDs*, 267 F.R.D. at 605 (distinguishing *GPU*, 253 F.R.D. 478). Similarly, in *Flash Memory*, the court relied on the fact that "the Department of Justice investigated claims of price fixing in the flash memory industry and made no findings of wrongdoing." *Flash Memory*, 2010 WL 2332081, at *6. And in that case, the market characteristics weighed heavily in defendants' favor because the direct purchasers had significant negotiating power; as such, the overcharge to direct purchasers could not be shown on a common, formulaic basis. *Id.*, at *9. In contrast, here the CRT product manufacturers faced intense competition which diminished their ability to negotiate individualized prices. Finally, in *Flash Memory* there was no highly incriminating conspiracy evidence for Dr. Netz to review; thus, her review was much more limited than her review here of over 4,200 cartel target prices generated from years of Glass Meeting notes.

Halliburton Co., 131 S.Ct. 2179, 2184 (2011). A court must analyze these elements in order to "determine which are subject to common proof and which are subject to individualized proof." *LCDs*, 267 F.R.D. at 311-13. Here, to establish liability in their antitrust claims plaintiffs must prove: (1) that there was a conspiracy to fix prices in violation of the antitrust laws; (2) that the plaintiffs sustained an antitrust injury or "impact" from the defendants' unlawful activity; and (3) the amount of damages sustained as the result of the antitrust violations.[6] *Id.* at 600.

Defendants contend that plaintiffs cannot show that questions of law or fact common to class members predominate over any questions affecting only individual members. Specifically, defendants contend that individual issues predominate because: (1) plaintiffs' have not offered a methodology capable of demonstrating classwide impact or injury with common proof; (2) plaintiffs have offered no reliable common method for proving that all direct purchasers paid supra-competitive prices for every CRT as a result of the alleged cartel; (3) plaintiffs have offered no reliable methodology to assess classwide damages using common proof; and (4) common impact and injury cannot be inferred.

Inference of Impact: Plaintiffs argue that "[i]njury and damages do not present predominately individual issues because California and other repealer states' laws permit an inference of classwide injury or classwide proof of damages." Memo. p.28. The Interim Special Master finds plaintiffs' argument unpersuasive. First, plaintiffs failed to adequately note which states, other than California, have adopted such an inference. Second, defendants have pointed to courts in at least two states under whose laws plaintiffs claim relief – Maine and Michigan – that have recognized that this inference has been rejected. *See Melnickv. Microsoft Corp.*, 2001 WL 1012261, at *7 (Me. Aug. 21, 2001) (citing *Karofsky v. Abbott Labs., Inc.*, CV-95-1009 at

[6] Defendants do not dispute that plaintiffs would employ predominantly common proof to prove the existence of a conspiracy. Thus, the Interim Special Master finds that common questions predominate on proof of defendants' purported conspiracy to fix prices, limit production and allocate markets and customers for CRTs. *See, In re Rail Freight Fuel Surcharge Antitrust Litig.*, No. 07-489 (PLF), 2012 WL 2870207, at *31 (D.D.C. June 21, 2012), ["because plaintiffs' allegations of price fixing indisputably 'will focus on the actions of the defendants, and, as such, proof for these issues will not vary among class members'"] (*quoting In re Vitamins Antitrust Litig.*, 209 F.R.D. 251, 264 (D.D.C. 2002)).

23 (Me.Super.Ct., Cum Cty. Oct. 15, 1997), which rejected inference in indirect purchaser cases); *Ren v. Phillip Morris Inc.*, 2002 WL 1839983, at *5 (Mich. Cir. Ct. June 11, 2002) (injury in fact cannot be established through use of presumptions or inferences in indirect-purchaser cases). Third, as the court noted in *LCDs*, 267 F.R.D. at 592, "regardless of whether certain state laws permit an inference of antitrust impact," plaintiffs still have the burden of demonstrating that "there is a reasonable method for determining on a class-wide basis whether and to what extent that overcharge was passed on to each of the [indirect purchasers] at all levels of the distribution chain." *LCDs*, 267 F.R.D. at 601 (quoting *In re Methionine Antitrust Litig.*, 204 F.R.D. 161, 164 (N.D. Cal. 2001). Thus, the existence of any state-based inference would not obviate the need for plaintiffs to continue to show common proof of their claims.

With regard to defendants' first three challenges, defendants focus on the report of Plaintiffs' expert economist Dr. Janet S. Netz. Dr. Netz received her Ph.D. from University of Michigan and is a Professor of Economics at Purdue University. Defendants do not challenge Dr. Netz's expertise to render economic opinions. The Interim Special Master has recommended that the Court deny defendants' motion to strike Dr. Netz's testimony on *Daubert* principles [filed 6/20/13]. That Report examined Dr. Netz's methodology in considerable detail.

Summary of Dr. Netz's Analysis: Dr. Netz examined the CRT industry and market to determine whether the indirect purchaser plaintiffs would have suffered impact as a result of the alleged price-fixing conspiracy. Dr. Netz assumed that there was a conspiracy among CRT manufacturers as plaintiffs have alleged. Dr. Netz first addressed the economic questions relevant to class certification: (1) was there common impact to class members in that they paid higher prices for CRTs than they would have in the absence of a cartel; and (2) can class damages be calculated using a common, formulaic method? Netz Decl., p.5. Relying on the characteristics of the CRT industry[7] and on market forces, Dr. Netz answered both of these

[7] One such characteristic was the fact that Defendants and their co-conspirators possessed 89% of the capacity to produce CRTs. Netz Decl., pp.36-42.

questions in the affirmative. Dr. Netz applied a regression analysis[8] to determine that over 91% of the variation in prices was determined by common factors, leaving no more than 9% of CRT prices to be determined by individual factors. *Id.* pp.5-6. ("That is, most of the variation in CRT prices is driven by common factors rather than individual ones, and these common influences on price are susceptible to being estimated using a formula."). Dr. Netz also determined that, based on the economic theory of pass-through, the cartel had a common impact on class members: class members faced a higher price for CRT monitors and TVs as a result of the cartel. *Id.*, p.6. Finally, Dr. Netz concluded that damages to class members can be measured on a common, formulaic basis based on any one of the several methods that could be used to calculate the overcharge to direct purchasers as well as the pass-through studies she was able to conduct at that time. *Id.*

Dr. Netz's analysis looked closely at the CRT industry. She discussed the differences in CRT products and CRT manufacturing,[9] and she outlined the structure of the CRT industry and the industry's distribution channels. *Id.*, pp.15-32. Dr. Netz noted the differences in each of these components, but she concluded that those differences would not lead to individualized determinations. *Id.* Dr. Netz then concluded that proof of anticompetitive conduct is common to all class members. Specifically, Dr. Netz pointed to conduct such as "fixing prices, restricting capacity, allocating customer, and sharing sensitive information." *Id.*, p.33. Proof of this conduct, Dr. Netz concluded, would be found in defendants' documents, cartel meeting notes and business records that are common as to all putative class members. *Id.*

Impact on Direct Purchasers: To assess antitrust harm to direct purchasers, Dr. Netz first relied on a "less direct approach" to show that defendants had the requisite power to raise

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[8] Regression analysis is used to quantify the relationship between multiple variables in order to explain or predict an outcome of interest. Thus, in the present case, as Dr. Netz explained, regression analysis was implemented using data from the CRT industry to understand how the price of a CRT is impacted by the presence of the cartel independently of the impact on price by demand, cost, and market structure variables that are not affected by the cartel. *Id.*, p.85

[9] In particular, Dr. Netz noted that the shift to LCD and the dot-com crash in 2000-2001 "had a very significant impact on CDT manufacturing." *Id.*, pp.28-29. She also discussed how many CRT manufacturers were vertically integrated. *Id.*, p.29.

prices,[10] that the cartel set target prices above the competitive level,[11] and that prices paid by consumers were approximately equal to the cartel's target prices.[12] Performing both qualitative and quantitative analyses, Dr. Netz then showed that the anticompetitive harm caused by the cartel affected all direct purchasers[13] and that the target prices set by the cartel created a price structure for direct purchasers that was similar to the structure in target prices.[14]

Dr. Netz also assessed whether impact to direct purchasers could be addressed using proof that is common to all class members. She determined that it could, and "showed that the cartel raised the entire structure of CRT prices." Netz Decl. at 65; *see also* Netz Rebuttal Decl. § VII. In reaching the latter conclusions, Dr. Netz first analyzed economic theory positing that all CRT prices must be raised for a cartel to be effective, or, for example, purchasers will substitute away from price-fixed CRTs towards those that are not. *Id.* at 65-66. Dr. Netz also examined defendants' documents evincing the cartel's setting of a price structure through communication among cartel members of target price levels and price differentials for CRT products of different types and sizes. *Id.* at 66-68; *see also* Netz Rebuttal Decl. at 4.

Dr. Netz supplemented her economic theory analysis of target price structure by using a hedonic regression analysis of target prices, which evaluated how well cartel target prices could be approximated by a function of CRT characteristics.[15] *Id.*, pp.68-71. She found that over 90

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[10] For example, Dr. Netz reported that the cartel possessed 89% of the capacity to produce CRTs; therefore, when the cartel restricted CRT output, that output reduction could not readily be offset by increased production of CRTs by non-cartel suppliers. *Id.*, p.36.

[11] To do this, Dr. Netz explained, the cartel set up the "Glass Meetings" to conduct cartel business such as price fixing, division of the market, and monitoring of compliance and that the cartel used most-favored customer clauses. *Id.*, pp.44, 57-58.

[12] To reach this conclusion, Dr. Netz empirically compared the cartel target prices listed in the Glass Meeting notes to the actual sales prices charged by Defendants for the CRT product types listed in those meeting notes. Netz Decl., pp. 61-64. Based on that comparison, Dr. Netz concluded that "the cartel was generally successful in raising prices towards its target prices." *Id.*, p.64.

[13] *See* Pl. Exh. RR15 (showing that 80% of CRT's sold at prices within 85-115% of target prices, thereby demonstrating that cartel was successful at setting and implementing target prices).

[14] Dr. Netz discussed how the cartel established price structures by, *inter alia*, setting "bottom line pricing that must be kept" and by setting price differentials. *Id.*, pp.66, 67. These price structures caused the prices of all CRTs to rise, Dr. Netz explained, even though the cartel only explicitly set target prices for a subset of them. *Id.*, p.66

[15] Applying the hedonic regression analysis, Dr. Netz concluded that "common factors overwhelm the individual factors in determining CRT prices. The implication is that prices respond similarly to common market forces and therefore the target price structure the cartel put in place had the effect of causing the prices of all CRTs to be above the competitive level, not merely the CRTs whose prices were fixed by the cartel."

percent of the variation in target prices was explained by size, finish, tube shape (CPTs only), whether the target was a major customer, and a time trend. Netz Rebuttal Decl., p.4. Therefore, she concluded, variations in price among CRT models were overwhelmingly caused by differences in model characteristics (a feature common to all class members), rather than on individual negotiations or other non-common causes. Based on her analyses of the cartel target prices disclosed in defendants' documents to date (4,769 target prices), Dr. Netz concluded that "a price structure exists in the cartel's target prices." Netz Decl., p.69; *see also* Netz Rebuttal Decl., p.32, Exhs. RR-15, RR-19, RR-20. Dr. Netz then performed similar hedonic regression analyses using defendants' actual, transactional sales prices (not target prices discussed above) to examine the determinants of CRT prices. She found that over 90 percent of price variation is determined by five variables that describe the CRT characteristics (size, aspect ratio (widescreen), finish, buyer seller pairs and a time trend). Netz Rebuttal Decl., p.5. Dr. Netz concluded that "common factors overwhelm the individual factors in determining CRT prices;" that "prices respond similarly to common market forces and therefore the target price structure the cartel put in place had the effect of causing the prices of all CRTs to be above the competitive level, not merely the CRTs whose prices were fixed by the cartel;" and that "proof of harm does not require individualized inquiry into the effect of the cartel's conduct on any particular product or buyer; it is common to all class members." Netz Decl.. p.71.

Pass-Through to Retailers and Class Members: Dr. Netz then conducted an analysis with regard to impact on class members, which she explained as follows:

> I first review the economic theory of pass-through, which consistently predicts that industry-wide cost increases result in price increases; that is economic theory shows that pass-through is positive. Next, I present documentary evidence showing that Defendants expected resellers of CRT products to pass through cost changes. These documents also establish that Defendants routinely monitored the street, or retail, prices of CRT products. Street price monitoring underscores that Defendants are aware of the connection between the price charged to direct purchasers and the amount paid by class members. My review of these materials leads me to conclude that, based on common methods and evidence, at least some portion of the cartel overcharge was passed