UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

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In re: PETROBRAS SECURITIES LITIGATION

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14-cv-9662 (JSR)

OPINION AND ORDER

JED S. RAKOFF, U.S.D.J.

Lead Plaintiff Universities Superannuation Scheme Ltd. ("USS") brings this putative class action against Brazilian oil company Petróleo Brasileiro S.A. - Petrobras ("Petrobras"); two of Petrobras' wholly-owned subsidiaries, Petrobras Global Finance, B.V. ("PGF")[1] and Petrobras America, Inc. ("PAI"); various former officers and directors of Petrobras and its subsidiaries (the "Individual Defendants");[2] Petrobras'

[1] On February 12, 2014, PGF acquired the outstanding shares of another wholly-owned subsidiary of Petrobras, Petrobras International Finance Company S.A. ("PifCo").

[2] Specifically, the Individual Defendants include former Petrobras Chief Executive Officer ("CEO") Maria das Gracas Silva Foster, another former Petrobras CEO José Sergio Gabrielli, and various other current or former executives of Petrobras or associated companies, namely, Petrobras Chief Financial Officer ("CFO") Almir Guilherme Barbassa, Petrobras director Paulo Roberto Costa, Petrobras director Jose Carlos Cosenza, Petrobras director Renato de Souza Duque, Petrobras director Guillherme de Oliveira Estrella, Petrobras director Jose Miranda Formigli Filho, Petrobras director Silvio Sinedino Pinheiro, PifCo Chairman and CEO Daniel Lima de Oliveira, PifCo director José Raimundo Brandão Pereira, PifCo CFO Sérvio Túlio da Rosa Tinoco, PifCo Chief Accounting Officer Paulo Jose Alves, PGF CEO and "Managing Director A" Gustavo Tardin Barbosa, PGF CFO and "Managing Director B" Alexandre Quintão Fernandes, PGF "Managing Director A" Marcos Antonio Zacarias, PGF "Managing Director B"

independent auditor, PricewaterhouseCoopers Auditores Independentes ("PwC"); and the various underwriters of Petrobras's debt offerings (the "Underwriter Defendants").[3] Plaintiffs allege that Petrobras was at the center of a multi-year, multi-billion dollar bribery and kickback scheme, in connection with which defendants made false and misleading statements in violation of the Securities Act of 1933 (the "Securities Act") and the Securities Exchange Act of 1934 (the "Exchange Act").

The general details of this case are set forth in the Court's Opinion dated July 30, 2015, familiarity with which is here presumed. See Opinion dated July 30, 2015, at 2-14, ECF No. 194. Plaintiffs now move to certify two classes, one for their Securities Act claims and one for their Exchange Act claims. Plaintiffs propose the following Class for their Securities Act claims (the "Securities Act Class"):

> As to claims under Sections 11, 12(a)(2), and 15 of the Securities Act of 1933, all purchasers who purchased or otherwise acquired debt securities issued

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Cornelis Franciscus Jozef Looman, and authorized Petrobras United States Representative Theodore Marshall Helms.

[3] Specifically, the Underwriter Defendants are: BB Securities Ltd., Citigroup Global Markets Inc., J.P. Morgan Securities LLC, Itau BBA USA Securities, Inc., Morgan Stanley & Co. LLC, HSBC Securities (USA) Inc., Mitsubishi UFJ Securities (USA), Inc., Merrill Lynch, Pierce, Fenner & Smith Incorporated, Standard Chartered Bank, Bank of China (Hong Kong) Limited, Banco Bradesco BBI S.A., Banca IMI S.p.A., and Scotia Capital (USA) Inc.

> by Petrobras, Petrobras International Finance Company S.A. ("PifCo"), and/or Petrobras Global Finance B.V. ("PGF") directly in, pursuant and/or traceable to a May 15, 2013 public offering registered in the United States and/or a March 11, 2014 public offering registered in the United States. Excluded from the Class are Defendants, current or former officers and directors of Petrobras, members of their immediate families and their legal representatives, heirs, successors or assigns, and any entity in which Defendants have or had a controlling interest.

Plaintiffs' Memorandum of Law in Support of Motion for Class Certification at 1, ECF No. 256. Plaintiffs propose the following Class for their Exchange Act claims (the "Exchange Act Class"):

> As to claims under Sections 10(b) and 20(a) of the Exchange Act of 1934, all purchasers who, between January 22, 2010 and July 28, 2015, inclusive (the "Class Period") purchased or otherwise acquired the securities of Petroleo Brasileiro S.A. ("Petrobras"), including debt securities issued by Petrobras International Finance Company S.A. ("PifCo") and/or Petrobras Global Finance B.V. ("PGF") on the New York Stock Exchange (the "NYSE") or pursuant to other domestic transactions, and were damaged thereby. Excluded from the Class are Defendants, current or former officers and directors of Petrobras, members of their immediate families and their legal representatives, heirs, successors or assigns, and any entity in which Defendants have or had a controlling interest.

Id. Plaintiffs move to appoint four plaintiffs -- namely USS, North Carolina Department of State Treasurer ("North Carolina"), Employees' Retirement System of the State of Hawaii ("Hawaii"),and Union Asset Management Holding AG ("Union") -- as class representatives for the Securities Act Class, and one plaintiff, USS, as class representative for the Exchange Act Class. Plaintiffs also move to appoint Pomerantz LLP ("Pomerantz") as Class Counsel for both Classes.

Defendants oppose plaintiffs' class certification motion, arguing that plaintiffs have failed to satisfy the requirements of Rules 23(a) and 23(b)(3). The Court received briefing from the parties and held an evidentiary hearing on December 21, 2015. At the hearing, the Court heard the testimony of competing expert witnesses: Dr. Steven Feinstein ("Feinstein") for plaintiffs and Dr. Paul Gompers ("Gompers") for defendants. See Transcript dated Dec. 21, 2015, ECF No. 414. Each of these experts also submitted two written reports apiece, all four of which the Court received in evidence. See Declaration of Emma Gilmore dated Oct. 23, 2015, Ex. A ("Feinstein Report"), ECF No. 264-1; Declaration of Emma Gilmore dated Nov. 23, 2015, Ex. H ("Feinstein Rebuttal Report"), ECF No. 338-8; Declaration of Jared Gerber dated Nov. 6, 2015, Ex. 27 ("Gompers Report"), ECF No. 294-5; Declaration of Jared Gerber dated Dec. 8, 2015, Ex. A ("Gompers Rebuttal Report"), ECF No. 355.

Having now fully reviewed the parties' submissions and evidence, the Court grants plaintiffs' motion for class certification, certifies a Securities Act Class and an Exchange Act Class, appoints North Carolina and Hawaii as class representatives for the Securities Act Class and USS as class representative for the Exchange Act Class, and appoints Pomerantz as Class Counsel for both Classes.

To prevail on their motion for class certification, plaintiffs must first satisfy the four requirements of Rule 23(a), commonly referred to as numerosity, commonality, typicality, and adequacy. See Fed. R. Civ. P. 23(a). The Court considers each in turn.

Rule 23(a)(1) provides that class may be certified only if "the class is so numerous that joinder of all members is impracticable." In the Second Circuit, numerosity is usually presumed for classes larger than forty members. See Pennsylvania Public School Employee's Retirement System v. Morgan Stanley & Co., Inc., 772 F.3d 111, 120 (2d Cir. 2014). However, "the numerosity inquiry is not strictly mathematical but must take into account the context of the particular case." Id. Relevant factors include "(i) judicial economy, (ii) geographic dispersion, (iii) the financial resources of class members, (iv) their ability to sue separately, and (v) requests for injunctive relief that would involve future class members." Id.

Defendants do not dispute the statements in Feinstein's report that, on average during the Class Period, there were 756.1 million Petrobras common ADS outstanding and 741.8 million Petrobras preferred ADS outstanding and that the total face value of Petrobras bonds was $41.1 billion. Feinstein Report ¶¶

33, 93, 193. On the basis of these figures, plaintiffs estimate that there are thousands of class members, dispersed across the globe. Defendants do not object to this assessment per se, but argue instead that the volume of "opt-out" individual actions filed against Petrobras demonstrates that the class includes sophisticated members with the resources to sue separately. See, e.g., New York City Employees Retirement System et al v. Petroleo Brasileirio S.A. -Petrobras et al, No. 15-cv-2192. Defendants also point to the fact that the Court has scheduled a joint trial of the instant action and the individual actions as evidence that a class action is not necessary in this instance. See Order dated Nov. 18, 2015, ECF No. 311 (setting common trial date for all cases related to the present action).

Defendants are correct that a significant volume of sophisticated plaintiffs have opted out of the present action, but they miss the point of these opt-outs. The Second Circuit has made clear that "the numerosity inquiry . . . must take into account the context of the particular case." Pennsylvania Public School Employee's Retirement System v. Morgan Stanley & Co., Inc., 772 F.3d 111, 120 (2d Cir. 2014). The context of this particular case is that Petrobras was among the world's largest companies during the Class Period. Defendants do not dispute that the billions of Petrobras securities traded vigorously around the world throughout the Class Period. In light of this, the volume of sophisticated opt-outs does not indicate that a class action is inappropriate or that the Classes are insufficiently numerous. Instead, the volume of opt-outs underscores just how vast the Classes are. Hundreds of opt-outs is a large number, but a conservative estimate would place the size of the proposed Classes in the thousands. Judicial economy will be served by a joint trial because of the similarities between the individual actions and the present action, but, contrary to defendants' suggestion, this would not extend to a joint trial for thousands upon thousands of individual actions. Accordingly, the Court concludes that the Classes satisfy the numerosity requirement of Rule 23(a)(1).

Rule 23(a)(2) requires that there be "questions of law or fact common to the class." In the context of a securities class action, "[c]ommon questions of law and fact include whether certain statements were false and misleading, whether those statements violated the federal securities laws, whether those statements were knowingly and recklessly issued, and ensuing causation issues." Pennsylvania Ave. Funds v. Inyx Inc., 2011 WL 2732544 at *4 (S.D.N.Y. July 5, 2011). Common questions of law and fact in this case include the truth of the bribery and kickback allegations against Petrobras, the accuracy of Petrobras's statements in connection with the allegations, the knowledge of individual defendants regarding these matters, and related causation issues. Defendants do not seriously challenge that common questions of law and fact exist here. Accordingly, the Court concludes that the commonality requirement is satisfied.

Rule 23(a)(3) requires that "the claims or defenses of the representative parties [be] typical of the claims or defenses of the class." Defendants do not materially attack the typicality of North Carolina's or Hawaii's Securities Act claims, but they argue that, because the Court dismissed Union's and USS's Notes claims, Rule 23(a)(3) bars them from serving as class representatives for the Securities Act Class. Plaintiffs respond that Union's and USS's Exchange Act claims arise from the "same set of concerns" as the Securities Act claims, and so Union's and USS's claims are still typical of the Securities Act Class. NECA-IBEW Health & Welfare Fund v. Goldman Sachs & Co., 693 F.3d 145, 149 (2d Cir. 2012). However, the "same set of concerns" standard pertains to class standing, a distinct inquiry from typicality under Rule 23(a)(3). Id. at 158 n.9.

While the underlying thrust of plaintiffs' argument might still have some relevance to a Rule 23(a)(3) analysis in general -- because "a class representative can establish the requisite typicality under Rule 23 if the defendants 'committed the same wrongful acts in the same manner against all members of the class.'" Hevesi v. Citigroup, Inc., 366 F.3d 70, 82 (2d Cir.

2004) (citation omitted) -- here, Union and USS fail to clear even this relatively modest hurdle with respect to the Securities Act Class because they no longer have Securities Act claims. Indeed, although plaintiffs' proposed definition of the Securities Act Class does not explicitly require that class members have purchased Notes in domestic transactions, such a requirement must be part of any certified class definition. See Morrison v. National Australia Bank Ltd., 561 U.S. 247 (2010). Because neither Union nor USS adequately pleaded that they purchased Notes in domestic transactions, see Opinion and Order dated Dec. 21, 2015, at 12, ECF No. 374, they cannot be members of the Securities Act Class. And, while typicality does not require identity amongst class members' claims, it does demand that a class representative be a member of the Class. Accordingly, USS and Union cannot serve as class representatives for the Securities Act Class.

Turning to the Exchange Act Class, defendants argue that typicality also bars USS from serving as a class representative for the Exchange Act Class because USS's Notes claims were dismissed. But there is no dispute that USS is a member of the Exchange Act Class, although its claims are based only on its purchases of Petrobras equities. Defendants object that there are significant differences, including differences in price movements, between Petrobras's debt and equity securities. But such variations are not relevant when the same alleged misconduct drives the claims based on debt and equity alike. The defendants allegedly "'committed the same wrongful acts in the same manner against all members of the class'" by participating in a bribery and kickback scheme and making false and misleading statements that impacted all members of the Exchange Act Class. Hevesi v. Citigroup, Inc., 366 F.3d 70, 82 (2d Cir. 2004) (citation omitted), see In re Enron Sec. Litig., 206 F.R.D. 427, 445-46 (S.D. Tex. 2002) ("[C]ourts have repeatedly concluded that stock purchasers can represent purchasers of debt instruments and vice versa in the same action.") (collecting cases). Accordingly, the Court concludes that the typicality requirement does not bar USS from serving as class representative for the Exchange Act Class solely because of its lack of Notes claims.

Defendants also argue that USS fails the typicality requirement because it faces unique defenses in four respects. First, defendants argue that USS is atypical because USS made some additional purchases of Petrobras securities in June 2015, after Petrobras had made corrective disclosures and plaintiffs had filed the Consolidated Amended Complaint in this case. But aside from the irrelevance of post-disclosure purchases to earlier reliance, see In re Monster Worldwide, Inc. Sec. Litig., 251 F.R.D. 132, 135 (S.D.N.Y. 2008), the Class Period for the

Exchange Act Class runs through July 28, 2015, based on plaintiffs' allegations that Petrobras's earlier corrective disclosures were a "whitewash." See Opinion and Order dated Dec. 21, 2015, at 12-14, ECF No. 374.[4] Accordingly, USS's purchases of securities in June 2015 do not mean it will face atypical defenses.

Second, defendants argue that USS is atypical in that it alternated between purchases and sales throughout the class period. But such "in-and-out" trading is not atypical in a class that contains, by defendants' own admission, numerous sophisticated institutional investors. See Defendants' Joint Memorandum of Law in Opposition to Plaintiffs' Motion for Class Certification ("Def. Opp.") at 3, ECF No. 295. Moreover, plaintiffs claim that USS lost approximately $80 million, its in-and-out trading notwithstanding. See Class Plaintiffs' Reply Memorandum of Law in Further Support of Motion for Class Certification at 3, ECF No. 337.

Third, defendants claim that USS's trading decisions were based on atypical considerations. In particular, defendants claim that USS had special contact with Petrobras during the

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[4] In their opposition to plaintiffs' motion for class certification, defendants reiterate their earlier request to shorten the periods for the claims in this case. The Court again denies this request for the reasons stated in its decision on defendants' motion to dismiss the Fourth Amended Complaint. See Opinion and Order dated Dec. 21, 2015, at 12-14, ECF No. 374.

Class Period that affected its decisions, and also that USS followed a special investment strategy that "look[s] at extra financial factors" that "the market does not accurately reflect." Declaration of Jared Gerber dated Nov. 6, 2015, Ex. 4, ECF No. 294. Such general statements do not seriously call the typicality of USS's claims into question: it is common practice for money managers to claim they have some special strategy that will deliver insights -- and returns -- superior to the wider market. Likewise, the interactions with Petrobras that defendants point to -- communications with the company's investment relations team and operating personnel and a brief meeting with the Petrobras CEO. See Declaration of Emma Gilmore dated Nov. 23, 2015, Ex. A (Deposition of Christopher Shale) at 84:3-23, 108:10-14, ECF No. 338-1 -- are typical of the relationships between large institutional investors and companies like Petrobras. In a class so heavily populated by institutional investors, these sorts of interactions do not mean that USS is subject to atypical defenses.

Fourth, defendants claim that USS will face unique reliance defenses based on its May 25, 2015, vote against approving Petrobras's management reports and financial statements for 2014. These documents were part of Petrobras's alleged "whitewash" of the bribery and kickback scandal, which valued the total overcharges from the bribery scheme at $2.5 billion.

See Fourth Amended Complaint ¶¶ 169, 176 ECF No. 342; Def. Opp. at 7. USS objected to the documents because it had "concerns regarding the reliability of the reported numbers." Declaration of Jared Gerber dated Nov. 6, 2015, Ex. 3, ECF No. 294. Such statements by plaintiffs may form part of a reliance defense, but any such defense will be typical of the Exchange Act Class because the Consolidated Amended Complaint in this case was filed on March 27, 2015, and alleged that the bribery scheme cost an estimated $28 billion. Consolidated Amended Complaint ¶ 5, ECF No. 109. Indeed, defendants have already argued that plaintiffs cannot prove reliance on Petrobras's May 25, 2015, statements because of the filings in this case. See Defendants' Memorandum of Law in Support of their Motion to Dismiss the Third Consolidated Amended Complaint at 10-14, ECF No. 226. The Court takes no position on the merits of this issue at this stage, but it does conclude that disputes over class members' reliance on the alleged "whitewash" are typical of the Exchange Act class a whole. Accordingly, USS's claims and defenses against them are typical, and plaintiffs have satisfied the requirements of Rule 23(a)(3).

Rule 23(a)(4) requires that "the representative parties will fairly and adequately protect the interests of the class." "Adequacy 'entails inquiry as to whether: 1) plaintiff's interests are antagonistic to the interest of other members of the class and 2) plaintiff's attorneys are qualified, experienced and able to conduct the litigation.'" In re Flag Telecom Holdings, Ltd. Sec. Litig., 574 F.3d 29, 35 (2d Cir. 2009). Defendants argue that USS's interests are antagonistic to members of the Exchange Act Class whose claims are based on purchases of Notes or preferred ADS because USS no longer has Notes claims and sold its preferred ADS in October 2013. See Declaration of Jared Gerber dated Nov. 6, 2015, Ex. 16 at 1-2, ECF No. 294-2. However, even assuming that the date USS sold its preferred ADS would significantly alter its interests with respect to those securities, defendants have not sufficiently explained why the interests of holders of common ADS like USS would be antagonistic to the interests of holder of Notes or preferred ADSs. The only theory of antagonism of which the Court is aware was presented during consideration of appointment of Lead Plaintiff and concerned the differing priority of securities in the event of bankruptcy. See Memorandum dated May 18, 2015, at 10 n.3, ECF No. 166. There is no evidence that the bankruptcy scenario is remotely likely or relevant. Because the same alleged misconduct drives plaintiffs' claims, regardless of whether they arise from purchases of Notes, common ADS, or preferred ADS, the interests of all members of the Exchange Act Class are aligned. See In re Enron Sec. Litig., 206 F.R.D. 427, 445-46 (S.D. Tex. 2002) ("[C]ourts have repeatedly concluded that stock purchasers can represent purchasers of debt instruments and vice versa in the same action.") (collecting cases). Moreover, the solution to USS's putative adequacy problem would not be to deny certification of the Exchange Act Class but rather to appoint another class representative alongside USS. For now, this course remains a solution in search of a problem. However, if, as the litigation proceeds, an Exchange Act Class member with claims based on Notes or preferred ADS purchases wishes to appoint a class representative dedicated to their interests, the Court will entertain her motion.

Defendants also argue that North Carolina, Hawaii, and USS are collectively inadequate class representatives because they suffer from a lack of cohesion. In particular, they rely on this Court's decision appointing USS Lead Plaintiff to criticize the appointment of three class representatives who, defendants claim, are an "artificial grouping" and will not be able to cooperate effectively. See Memorandum dated May 18, 2015, at 4 ECF No. 166. Although the Court recognizes that there are costs associated with the appointment of multiple class representatives, the dangers are not the same as those presented by lawyers bundling unrelated clients together to win a lead plaintiff appointment under 15 U.S.C. § 78u-4(a)(3)(B)(iii)(I)(bb) (directing court to adopt presumption that lead plaintiff is person or group of persons with "the largest financial interest in the relief sought by the class"). There is now a valid reason to appoint multiple class representatives because Lead Plaintiff USS is no longer a member of one of the Classes to be certified. Moreover, the proposed class representatives have already demonstrated that they can work together effectively: they managed the addition of three named plaintiffs, Hawaii, North Carolina, and Union, and produced a Joint Prosecution Agreement. See Order dated March 30, 2015, ECF No. 112. In light of this, the number of class representatives is not a barrier to their collective adequacy.

Defendants make other attacks on the competence and qualifications of the proposed class representatives and their counsel, but none has merit. First, defendants argue that USS has never led a U.S. securities class action before. However, experience is not a prerequisite to adequacy under Rule 23(a)(4).

Second, defendants claim that the volume of opt-outs should be seen as a vote of no confidence in USS's leadership of the class. Defendants do not provide any support for this interpretation of class members exercising their opt-out rights. Indeed, it is not uncommon for large institutions to opt out of class actions simply so that they can improve their bargaining position if, as usually occurs, settlement discussions begin. If anything, as explained above, the Court views the volume of opt-out plaintiffs as indirect evidence that a class action is appropriate in this case and that a sophisticated institutional investor like USS is needed as a class representative for the thousands of remaining class members.

Third, defendants claim that the proposed class representatives have exhibited "stark discovery failures." Def. Opp. at 9. But this Court almost never refers discovery disputes to Magistrate Judges, precisely so that the Court can remain apprised of any discovery defalcations, and to this end, the Court provides a mechanism for swift joint telephone conferences to resolve any such problems. If defendants felt that plaintiffs and their counsel were behaving so badly, they should have notified the Court sooner than their opposition to plaintiffs' motion for class certification. The argument thus smacks more of strategy than substance.

In any event, on the basis not only of USS's counsel's prior experience but also the Court's observation of its advocacy over the many months since it was appointed lead counsel, the Court concludes that Pomerantz, the proposed class counsel, is "qualified, experienced and able to conduct the litigation." In re Flag Telecom Holdings, Ltd. Sec. Litig., 574 F.3d 29, 35 (2d Cir. 2009). There is no real dispute that Pomerantz is an established firm with considerable class action experience, and the Court has now had multiple opportunities to observe Pomerantz's performance. The Court finds that the Pomerantz firm has both the skill and resources to represent the Classes adequately.

On the basis of the foregoing discussion, the Court concludes that the requirements of Rule 23(a)(4) are satisfied. With that, the Court concludes that plaintiffs have satisfied all four prongs of Rule 23(a).

In addition, of course, for plaintiffs to prevail on their motion for class certification, the action must meet one of the three alternative conditions of Rule 23(b). Plaintiffs argue that the requirements of Rule 23(b)(3) are satisfied. Rule 23(b)(3) requires that "a class action is superior to other available methods for fairly and efficiently adjudicating the controversy" and that "the questions of law or fact common to class members predominate over any questions affecting only individual members."

The foregoing analysis under Rule 23(a) supports a finding that a class action is superior to other methods of adjudication. Petrobras was a massive company with investors around the globe. Notwithstanding Petrobras's size and its numerous and far-flung investors, the interests of the class members are aligned and the same alleged misconduct underlies their claims. Moreover, the thousands of individual class members who have not opted-out have a minimal interest in controlling the course of the litigation; there are significant efficiency gains to be reaped from concentrating the litigation in a single forum; and the likely difficulties in managing the class action are readily surmountable. See Fed. R. Civ. P. 23(b)(3)(A), (C), (D). Defendants again point to the volume of actions brought by individual plaintiffs as evidence against the superiority of the class action form in this case. See Fed. R. Civ. P. 23(b)(3)(B). But the Court again disagrees: instead, the volume of opt-outs demonstrates the need for a class action in these circumstances. Otherwise, the Court risks the present stream of individual actions growing into an unmanageable flood.

Defendants raise two more specific arguments against the superiority of a class action in this case. First, defendants argue that plaintiffs must demonstrate "a probability that a foreign court will recognize the res judicata effect of a U.S. class action judgment" to satisfy superiority. In re Vivendi Universal, S.A., 242 F.R.D. 76, 95 (S.D.N.Y. 2007). The Court is not aware of any binding precedent that sets out such a requirement. In re Vivendi Universal, S.A., the case on which defendants rely for their position, was decided before Morrison v. National Australia Bank Ltd., 561 U.S. 247 (2010), which limited the reach of U.S. securities laws to securities traded on a U.S. exchange or purchased in domestic transactions.

Morrison, 561 U.S. at 267. Morrison materially lessens the foreign res judicata concerns animating In re Vivendi Universal, S.A.. Moreover, In re Vivendi Universal, S.A. only concluded that res judicata concerns could be one consideration that could lead to the exclusion of foreign members from a class. In re Vivendi Universal, S.A., 242 F.R.D. 76, 95 (S.D.N.Y. 2007). While defendants also propose including in the Class definitions lists of countries whose residents would be excluded from the Classes, see Defendants' Joint Supplemental Memorandum of Law in Further Opposition to Plaintiffs' Motion for Class Certification, App. A, ECF No. 389, defendants have not explained in any detail why these particular countries would not recognize a U.S. class action judgment in this case. Accordingly, the Court concludes that foreign res judicata concerns are not a bar to the superiority of a class action and declines to list any specific countries in the Class definitions.

Defendants also argue against superiority on so-called "ascertainability" grounds. The Second Circuit has framed ascertainability as a stand-alone "implied requirement" of Rule 23, and, to the extent defendants' arguments are addressed to ascertainability as distinct from superiority, the Court also considers them here. See Brecher v. Republic of Argentina, 806 F.3d 22, 24 (2d Cir. 2015). "[T]he touchstone of ascertainability is whether the class is 'sufficiently definite so that it is administratively feasible for the court to determine whether a particular individual is a member.'" Id. However, "failure to certify an action under Rule 23(b)(3) on the sole ground that it would be unmanageable is disfavored and 'should be the exception rather than the rule.'" In re Visa Check/MasterMoney Antitrust Litigation, 280 F.3d 124, 140 (2d Cir. 2001).

Defendants point out that any putative class member must be able to show that they purchased Petrobras securities on an American exchange or in a domestic transaction under Morrison v. National Australia Bank Ltd., 561 U.S. 247 (2010). Defendants argue that, because of the nuances of the "domestic transaction" standard, determining who is a class member and damages will be an administratively unfeasible task for this Court, for putative class members who receive notice of the action, and for future courts facing claims from class members who have not properly opted out.[5] To cut this supposed Gordian knot, defendants propose that the Exchange Act Class definition be amended to exclude off-exchange purchasers and that the Securities Act Class

[5] Defendants also argue that the Classes are unmanageable because plaintiffs will need to provide notice to investors across four continents. In today's modern world, this is not an unfeasible task, as demonstrated by the fact that Petrobras successfully marketed its securities across four continents.

definition be rejected outright or amended to exclude aftermarket purchasers and purchasers from non-U.S. underwriters.

Amending the Class definitions in this way would cut off purchasers who have valid claims under Morrison's second prong, which holds that the securities laws apply to securities purchased in "domestic transactions." Morrison, 561 U.S. at 267. This would not be a faithful application of Morrison. Moreover, having recently evaluated whether the four proposed class representatives adequately pleaded that they purchased Petrobras securities in domestic transactions, see Opinion and Order at 5-6, ECF No. 374, the Court is confident that the Morrison determination is "administratively feasible." Brecher v. Republic of Argentina, 806 F.3d 22, 24 (2d Cir. 2015). Indeed, defendants themselves have elsewhere represented as much to the Court. See Defendants' Supplemental Memorandum of Law in Support of their Motion to Dismiss the Fourth Consolidated Amended Complaint and in Further Support of their Motion to Dismiss the Third Consolidated Amended Complaint at 6, ECF No. 351 ("Each of [Absolute Activist's tests] establishes, as the site of the transaction that is of congressional concern, a single location that—although subject to proof—can be easily determined based on recognized and readily understood standards."). The criteria identified by Absolute Activist Value Master Fund Ltd. v.

Ficeto, 677 F.3d 60 (2d Cir. 2012), as relevant to the determination of whether a transaction was domestic, are highly likely to be documented in a form susceptible to the bureaucratic processes of determining who belongs to a Class. For example, documentation of "the placement of purchase orders" is the sort of discrete, objective record routinely produced by the modern financial system that a court, a putative class member, or a claims administrator can use to determine whether a claim satisfies Morrison. Accordingly, the Court concludes that the proposed Classes are ascertainable and administratively manageable and that a class action is the superior method of adjudication under Rule 23(b)(3).

Rule 23(b)(3) also requires that "the questions of law or fact common to class members predominate over any questions affecting only individual members." "Class-wide issues predominate if resolution of some of the legal or factual questions that qualify each class member's case as a genuine controversy can be achieved through generalized proof, and if these particular issues are more substantial than the issues subject only to individualized proof." UFCW Local 1776 v. Eli Lilly and Co., 620 F.3d 121, 131 (2d Cir. 2010). Here, plaintiffs submit, and defendants do not meaningfully contest, that, with the exception of reliance and damages, all elements of plaintiffs' claims are susceptible to generalized proof. The

Court agrees: with the exception of reliance and damages, plaintiffs' claims rest almost exclusively on class-wide questions of law and fact centered around the alleged bribery and kickback scheme, Petrobras's alleged misstatements in connection with the scheme, the conduct of Petrobras's officers and employees, and the effects of these actions and events on the market.

It is true that, with respect to the Exchange Act Class, reliance is an element of plaintiffs' claims. But while reliance may be an individual phenomenon, here plaintiffs argue that reliance will be established on a common basis under a "fraud-on-the-market" theory. See Basic, Inc. v. Levinson, 485 U.S. 224, 241-42 (1988). "[T]o invoke the Basic presumption, a plaintiff must prove that . . . (3) the [security] traded in an efficient market." Halliburton Co. v. Erica P. John Fund, Inc., 134 S. Ct. 2398, 2413 (2014). The Second Circuit has not adopted a test for the market efficiency of stocks or bonds. See Teamsters Local 445 Freight Div. Pension Fund v. Bombardier, Inc., 546 F.3d 196, 204 n.11 (2d Cir. 2008). However, it has recognized that courts generally apply a set of eight factors, known as the "Cammer factors." Id.; see Cammer v. Bloom, 711 F. Supp. 1264, 1286 (D.N.J. 1989) (setting out five factors); Krogman v. Sterritt, 202 F.R.D. 467, 478 (N.D. Tex. 2001) (considering three additional "Cammer" factors). To address these factors, plaintiffs submitted two expert reports from their witness Feinstein. Feinstein also testified at an evidentiary hearing on December 21, 2015. Defendants and their expert do not meaningfully dispute Feinstein's conclusions with respect to all but one of the Cammer factors (discussed below). The Court accepts Feinstein's testimony with respect to these other factors and concludes that they weigh in favor of finding that Petrobras equity and debt securities traded in efficient markets.

The Court first considers the application of the Cammer factors to the Petrobras equity markets. The Cammer factors are designed for equity markets and can be applied directly to the markets for Petrobras common and preferred ADS. The first Cammer factor considers the average weekly trading volume during the Class Period. Specifically, "average weekly trading of two percent or more of the outstanding shares would justify a strong presumption that the market for the security is an efficient one; one percent would justify a substantial presumption." Cammer, 711 F. Supp. at 1286 (citing Bromberg & Lowenfels, 4 Securities Fraud and Commodities Fraud, § 8.6 (Aug. 1988)). Feinstein reported that 14.1% of all common ADS and 6.61% of all preferred ADS outstanding traded on average in a given week during the Class Period. Feinstein Report ¶¶ 61, 171. This is well above the 2% threshold for a "strong presumption" of efficiency discussed in Cammer.

The second Cammer factor considers analyst coverage. Feinstein reported that over 50 analysts covered Petrobras's securities, inarguably a significant number. Id. ¶¶ 66, 173. There was also extensive news coverage of Petrobras during the Class Period. Id. ¶¶ 71, 176.

The third Cammer factor considers whether market makers existed for the securities at issue. Feinstein reported that there were at least 574 market makers for Petrobras common ADS and 147 market makers for Petrobras preferred ADS; these market makers included Goldman Sachs, JP Morgan, Citigroup, and Morgan Stanley. Id. ¶¶ 78, 181.

The fourth Cammer factor considers whether an issuer was eligible to file a Form S-3, a simplified security registration form that can be filed by companies that have met prior reporting requirements. A Form F-3 is the equivalent of a Form S-3 for foreign companies; companies are eligible to file an F-3 or an S-3 form when, among other things, they have filed Exchange Act reports for a certain time and have a float over a certain level. Id. ¶¶ 81.[6] Petrobras satisfied the F-3 requirements for the duration of the Class Period, except for

[6] "Float" refers to outstanding shares minus closely-held and restricted shares.

when it delayed release of its financials because of the allegations that underlie this case. Id. ¶¶ 90, 187. Petrobras filed an F-3 form during the Class Period on August 29, 2012. Id.

Defendants dispute the fifth Cammer factor, which looks to "empirical facts showing a cause and effect relationship between unexpected corporate events or financial releases and an immediate response in the stock price." Cammer, 711 F. Supp. at 1287. Because this factor is disputed, the Court considers it separately below.

The sixth Cammer factor[7] considers market capitalization. The average aggregate market value of the Petrobras common ADS during the Class Period was $16.9 billion, greater than 90% of publicly traded U.S. companies. Feinstein Report ¶ 93. The average aggregate market value of Petrobras preferred ADS during the Period was $15.9 billion, an amount that, on its own, would mean Petrobras was larger than 90% of publicly traded U.S. companies. Id. ¶ 190.

The seventh Cammer factor considers the bid-ask spread for the securities at issue. The average bid-ask spread for Petrobras common ADS over the Class Period was 0.09%, and the

[7] Really the first "Krogman" factor. As noted above, in Krogman v. Sterritt, 202 F.R.D. 467 (N.D. Tex. 2001), the court supplemented and elaborated on the Cammer factors.

average bid-ask spread for Petrobras preferred ADRs was 0.08%. Id. ¶¶ 99, 196. By comparison, the average bid-ask spread for all stocks in the Center for Research in Security Prices ("CRSP") database was 0.59%. Id.

The eighth Cammer factor considers the issuer's float. Feinstein reported that none of the Petrobras common ADS were held by insiders or affiliated corporate entities. Id. ¶ 95. Accordingly, the entire $16.9 billion average aggregate value of Petrobras common ADS was floated during the Class Period, again placing Petrobas in the top decile of U.S. companies. The float for the preferred ADS varied during the Class Period, but averaged $15.9 billion, always exceeding the minimum requirement for F-3 eligibility. Id. ¶ 185.

The Court now considers the application of the Cammer factors to the market for Petrobras debt securities. Although the Cammer factors were not designed for debt securities, plaintiffs argue that they are still useful in evaluating the efficiency of a debt securities market, particularly in conjunction with an analysis of the equities market for the same company. See In re Enron Corp. Sec., 529 F. Supp. 2d 644, 747-48 (S.D. Tex. 2006). To analyze the Petrobras debt markets, Feinstein omitted some Cammer factors, modified others, and considered additional debt-specific factors. The Court agrees that the modified Cammer factors provide a useful rubric to evaluate debt markets.

The first modified Cammer factor considers the par value and float of the debt securities. Feinstein reported that the aggregate par value of Petrobras Notes totaled $41.4 billion and was larger than 90% of all market capitalizations on the NYSE, Amex, and NASDAQ during the Class Period. Feinstein Report ¶ 246. Feinstein reported that no substantial portion of Petrobras Notes was held by insiders, so that the float was equivalent to the aggregate par value. Id. ¶ 248.

The second modified Cammer factor considers analyst and credit rating agency coverage of the debt securities. As noted above, Feinstein reported that over 50 analysts cover Petrobras's securities, inarguably a significant number. Id. ¶¶ 66, 173. There was also extensive news coverage of Petrobras. Id. ¶¶ 71, 176. During the Class Period, Petrobras was covered by the major credit rating agencies, Fitch, Moody's, and Standard & Poor's. Id. ¶¶ 231-35.

The third modified Cammer factor considers the market makers and underwriters for the debt securities. Feinstein reported that there were at least 20 underwriters of the Petrobras Bonds, including large and prominent investment banks. Id. ¶ 241. Feinstein also opined that underwriters generally serve as market makers for securities and that many investment banks that published analyst reports covering the bonds also served as market makers. Id. ¶ 242-43.

The fourth modified Cammer factor considers institutional ownership of the debt securities. Feinstein reported that 214 different mutual funds held one or more Petrobras bonds during the Class Period. Id. ¶¶ 236-38. Feinstein opined that wide institutional ownership indicates market efficiency because institutional investors often conduct their own research on securities and make investment decisions based on that research. Id.

The fifth modified Cammer factor again considers the ability of the issuer to file a Form S-3. As discussed above, Petrobras satisfied the F-3 requirements for the duration of the Class Period, except for when it delayed release of its financials because of the allegations that underlie this case. Id. ¶ 90, 187. Petrobras filed an F-3 form during the Class Period on August 29, 2012. Id.

The sixth modified Cammer factor considers trading volume and frequency. Feinstein reported a table of weekly average trading volumes for the Petrobras Notes during the Class Period. See id. at 64 tbl.5. The volumes ranged from 1.13% to 10.95%, with most over 2%. Id. Accordingly, all the bonds were over Cammer's 1% threshold for a substantial presumption of efficiency, even though the Cammer thresholds are designed for common stock, which trades more frequently than bonds. Id. ¶ 253. In addition, the average number of days between successive trades in the Notes ranged from 0.020 and 0.418 over the Class Period. Id. ¶ 257. By comparison, relatively few corporate bonds trade more frequently than 200 days in a year. Id. § 255. Feinstein concluded that the trading volumes and frequencies of the Notes were significantly high.

The final modified Cammer factor is the fifth unmodified Cammer factor: empirical evidence of a cause and effect relationship between events and an immediate response in the price of the debt securities. Because this factor is also disputed with respect to the Notes, the Court considers it separately below.

Defendants and their expert Gompers do not directly dispute Feinstein's application of the foregoing Cammer factors, unmodified or modified. Instead, Gompers testified that the foregoing factors are "structural factors that are necessary for efficient markets," but not, on their own, sufficient. Gompers Report ¶ 27. According to Gompers, the fifth Cammer factor, "empirical facts showing a cause and effect relationship between unexpected corporate events or financial releases and an immediate response in the stock price," is the only factor sufficient to show market efficiency.

Although the Second Circuit has recognized that evidence of causality has been considered the most important Cammer factor, it has not held that direct evidence is always necessary. See Teamsters Local 445 Freight Div. Pension Fund v. Bombardier, Inc., 546 F.3d 196, 204 n.11, 207-08 (2d Cir. 2008). While some language in Cammer supports Gompers' view that direct evidence is essential, see Cammer, 711 F. Supp. at 1287, this Court, which is not bound by Cammer, does not agree that only direct evidence is sufficient to demonstrate market efficiency in translating material disclosures into effect on market price. As the Supreme Court recently opined, "market efficiency is not a yes-or-no proposition," and particularly strong indications of market efficiency from the indirect Cammer factors can lessen the burden to be carried by the fifth, "direct evidence" Cammer factor. Halliburton Co. v. Erica P. John Fund, Inc., 134 S. Ct. 2398, 2414 (2014). Causality is notoriously difficult to prove with certainty, even in physics or chemistry, let alone in market analyses, because of the large number of factors involved and the difficulty of measuring them with precision, separating out their interactions, etc. Where, as here, the indirect factors overwhelmingly describe a large and well-functioning market for Petrobras securities, common sense suggests that the market would materially react to material disclosures. Put simply, Petrobras was one of the largest and most-analyzed firms in the world throughout the Class Period, and such size and sophistication raise the likelihood of an efficient market.

In any event, though it is a somewhat involved analysis, the Court ultimately concludes that plaintiffs have satisfied the fifth Cammer factor. To be sure, almost every aspect was disputed. The experts even sparred over whether any direct evidence of the fifth factor existed. Feinstein testified that he found direct evidence of a link between events and prices movements in Petrobras securities. Specifically, Feinstein ran four event studies on the Petrobras equities and two on the debt securities. Feinstein identified three categories of event dates: (1) dates when Petrobras filed 6-K Forms containing the term "corrupt*",[8] excluding dates when the terms was used only in boilerplate language; (2) dates when Petrobras filed any 6-K Form; and (3) dates when Petrobras released earnings statements. He then looked at the price movements of Petrobras securities for a given set (or combined multiple sets) of event dates, using a regression analysis to strip out any price movement that was caused by external forces, such as moves in the wider market. Next, he compared the proportion of event dates with statistically significant price movements to the proportion of non-event dates with statistically significant price movements,

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[8] Meaning the letters "corrupt" followed by any letters or no letters.

concluding that there was a statistically significant difference in proportions for common ADS and preferred ADS and across the Petrobras Notes. See Feinstein Report ¶¶ 148-61, 205-21, 279-86. In other words, there were more likely to be big price movements on days when important Petrobras events occurred, demonstrating the markets in Petrobras securities were responsive to new information.

Gompers challenged both the execution and the sufficiency of Feinstein's tests. First, Gompers objected to Feinstein's selection of event dates. Gompers objected that by selecting dates uses the term "corrupt*," Feinstein ignored dates on which allegation-related information was released to the market that did not include the specific term "corrupt*." Gompers also identified three additional dates with 6-Ks that included the term corruption that he argued should not have been excluded as boilerplate dates. Finally, Gompers claimed that Feinstein failed to produce evidence that the information released on various dates across all three date sets was new. In particular, he contended that, because Petrobras is a Brazilian company, some information had already been released in Brazil.

Feinstein offers some specific ripostes to these points, but the Court does not deem it necessary to discuss them at length here. The dispute over the inclusion of event dates is essentially about the role of subjectivity in such analysis.

Gompers objects that Feinstein's choice of event dates injects subjectivity into his analysis. However, Gompers' suggested improvements -- including other dates with allegation-related information, more 6-K corruption dates, analysis of whether information was new enough -- could also be criticized as subjective. There is always some subjectivity in analyses of this nature, and courts would be unable to rely on expert testimony if they could not tolerate a modest level of subjectivity. The Court concludes that Feinstein's selection of event dates displays only that -- a modest level of subjectivity -- and that this is not fatal to his conclusions.

Gompers next objected that Feinstein should have used the BOVESPA index, an index of stocks on the Brazilian stock market, instead of the CRSP Market Index in his regression analysis. Gompers contended that the BOVESPA does a better job than the CRSP Market Index of stripping out exogenous returns. Feinstein responded that the BOVESPA returns are not exogenous to the Petrobras returns because, as a result of Petrobras's size and prominence in Brazil, the BOVESPA's movements were driven in part by Petrobras. Moreover, Feinstein re-ran his tests using the BOVEPSA index and concluded that using the BOVESPA in his regression analysis would not change his overall conclusions. See Feinstein Rebuttal Report ¶ 83, Exhibit-7a-7w. The Court credits Feinstein's testimony and concludes that his regression analysis is sound.

Gompers further objected that the sample sizes used in Feinstein's tests were too small and could result in "large standard errors, broad confidence intervals, and tests having low power." Gompers Report ¶ 84 (quoting Reference Manual on Scientific Evidence, 3rd ed. (Washington: The National Academies Press, 2011), 255). But Feinstein pointed out that these properties would bias his tests against finding statistical significance -- the danger would be false negatives not false positives. Feinstein Rebuttal Report ¶ 68. Moreover, Feinstein performed an additional bootstrap analysis and the Fisher's Exact Test to demonstrate that his results were robust. See Feinstein Rebuttal Report ¶¶ 69-70, Exhibit 8a-8b. The Court credits Feinstein's testimony and concludes that his sample sizes do not seriously undermine his results.

Gompers still further objected that Feinstein did not conduct tests on the Petrobras Notes using the earnings statement date set alone, although Feinstein did use the earnings statement date set by itself for his analysis of the common and preferred ADS. Gompers Report ¶ 72. Feinstein responded that unless bonds are close to default they are insensitive to earnings announcements and so the earning statements date set by itself was not an appropriate event date set for the Petrobras Notes. Feinstein Rebuttal Report ¶ 89. Moreover, the results of Feinstein's regression analysis on the Petrobras Notes showed that the fixed-rate Petrobras bonds moved in response to market interest rates, indicating the market for Petrobras Notes was efficient. Feinstein Report ¶ 288-91, Ex. 7c. Accordingly, the Court concludes that the fact that Feinstein did not use the earnings statement date set alone in his analysis of the Petrobras Notes does not damage his conclusions regarding the market for Petrobras debt securities.

Gompers raised some other technical objections to Feinstein's report. For example, he pointed out computational errors that Feinstein made in his initial analysis. See Gompers Report ¶ 76-80. Feinstein corrected these errors in his rebuttal report, and they did not change his conclusions. Feinstein Rebuttal Report ¶¶ 48-49. Upon considering the magnitude of these errors and Gompers' other critiques of Feinstein's execution of his methodology, the Court does not deem them substantial enough to seriously undermine Feinstein's credibility or his conclusions regarding the efficiency of the markets for Petrobras securities.

Concerns about execution aside, Gompers also raised objections to the sufficiency of Feinstein's approach. First, Gompers objected to Feinstein's conclusions because no peer-reviewed academic article has used Feinstein's methodology to evaluate the efficiency of a market. Feinstein's method of comparing the proportions of statistically significant observations in two samples is a "z-test," essentially a version of the more famous Student's "t-test." See Reference Manual on Scientific Evidence, 3rd ed. (2011), 300.[9] There is no dispute that z-tests are commonly used and widely accepted statistical tools. See id.; Feinstein Rebuttal Report ¶ 37; Gompers Rebuttal Report ¶ 9; see also, Reference Manual on Scientific Evidence, 3rd ed. (2011), 591-97 (discussing epidemiological cohort study that compares incidence of emphysema in different populations). Both sides refer to Feinstein's methodology as an "FDT" test because use of z-test to evaluate market efficiency was first proposed in a law review article by three well-known securities econometric experts, whose combined initials were "FDT." See Paul A. Ferrillo, Frederick C. Dunbar, and David Tabak, The "Less Than" Efficient Capital Markets Hypothesis: Requiring More Proof from Plaintiffs in Fraud-on-the-Market Cases, 78 St. John's L. Rev. 81, 119-22 (2004). Gompers contends that, because the article was not peer-reviewed, a z-test cannot be used to show market efficiency. Were Feinstein using a novel or

[9] The Reference Manual on Scientific Evidence is jointly prepared by the Federal Judicial Center and by the National Research Council of the National Academy of Sciences. The undersigned was one of the four federal judges who served on the committee that oversaw the preparation of the 3rd Edition.

questionable statistical technique, the Court would place more weight on the absence of peer review. But it is not necessary for every application of a commonly used statistical technique to be peer-reviewed. Indeed, the elegance of statistical methods is that they can be applied to data sets of varying substantive significance, from rates of emphysema to transactions on modern securities markets.[10] Because the Court is convinced that the z-test is a well-established and sound statistical technique, the lack of peer review does not seriously undermine Feinstein's application of the z-test.

Next, Gompers objected to Feinstein's conclusions on the grounds that Feinstein's z-tests failed to consider the directionality of movements in the Petrobras market. By simply comparing the proportions of dates with statistically significant returns, Feinstein's z-tests did not examine whether

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[10] The Court is also mystified by Gompers' claim that one of the authors of the FDT article subsequently disavowed Feinstein's methods. Gompers states, "[i]n fact, David Tabak (one of the authors of the St. John's Law Review article) specifically noted that the collective evaluation required by the FDT test rendered the methodology 'not . . . able to fully distinguish an efficient market from an inefficient one.'" Gompers Rebuttal Report ¶ 13 (quoting Tabak, David, "Use and Misuse of Event Studies to Examine Market Efficiency," NERA Working Paper, April 30, 2010, 7). But Tabak's sentence is, in fact, "[t]here are several ways that versions of the FDT methodology may not be able to fully distinguish an efficient market from an inefficient one." Tabak, David, "Use and Misuse of Event Studies to Examine Market Efficiency," NERA Working Paper, April 30, 2010, 7. This manner of selective quotation does not redound to Gompers' credit.

a statistically significant return on a given day was positive or negative and, in particular, whether the price of a security moved up or down as expected based on the precipitating market event. Feinstein did not dispute that his z-test methodology alone could not test directionality. Instead, he reported the results of a supplementary analysis examining how the prices of common and preferred Petrobras ADS moved on earning announcement dates. See Feinstein Rebuttal Report ¶ 53, Appendix-2. To conduct this analysis, Feinstein examined analyst reports on earnings event dates and coded their tenor as "Positive," "Negative," "Mixed/Neutral," or "In Line." On dates with statistically significant returns, he found that the price movements in common and preferred ADS were consistent with his assessments of the tenor of analyst coverage. Id.

Gompers and defendants objected to this analysis as subjective and flawed. Overall, they objected to Feinstein's categorization of the tenor of analyst coverage as dependent on his subjective interpretation. More specifically, they claimed that the tenor of coverage on two of the dates Feinstein labeled "Positive," May 16, 2011, and October 28, 2013, should have been labeled "Mixed/Neutral." The Court agrees that these dates were mischaracterized. See Transcript dated Dec. 21, 2015 at 44-50, ECF No. 413; Gompers Rebuttal Report ¶¶ 52-55. Moreover, Feinstein did not provide the analyst reports he relied on in making his coverage assessments and, other than the excerpts listed in Appendix-2 to his rebuttal report, did not explain how he arrived at specific tenor determinations. Therefore, it is difficult to assess whether the two dates identified by defendants are anomalous or indicative of wider deficiencies in Feinstein's directionality testing. Accordingly, the Court places only limited weight on Feinstein's directionality testing of the Petrobras ADS.

The Court also places only limited weight on the evidence of the directionality of the movements in the Petrobras Notes market. Feinstein reported that his regression analysis of the Notes showed that they moved with his Benchmark Bond return variable, which serves as basic confirmation of the directionality of Notes price movements. Feinstein Report ¶¶ 288-91; Ex. 7c. However, Gompers identified three dates when some Notes had statistically significant price declines while other Notes had statistically significant price increases. Feinstein did not address these movements. Accordingly, the Court concludes that there is only limited evidence of directionality in the Petrobras Notes market.

However, evidence of directionality or the degree of fit between expected and observed moves in a market need not be substantial to allow a finding of market efficiency. Such evidence goes to the accuracy of the price of a security, and the Supreme Court has explained that it is not the accuracy of a price as a reflection of underlying value but instead the sensitivity of the price to false statements that underlies the Basic presumption. See Halliburton Co. v. Erica P. John Fund, Inc., 134 S. Ct. 2398, 2410 (2014) ("'That the ... price [of a stock] may be inaccurate does not detract from the fact that false statements affect it, and cause loss,'" which is 'all that Basic requires.'") (quoting Schleicher v. Wendt, 618 F.3d 679, 685 (7th Cir. 2010) (alteration in original)). Defendants' own arguments that Feinstein's tenor assessments were subjective demonstrate the wisdom of the Supreme Court's position. Any assessment of the tenor of analyst coverage and the expected impact of an event on the market will be subjective. Indeed, the analyst reports released on May 15, 2011, and May 16, 2011, varied in their assessments of the same earnings event. See Feinstein Rebuttal Report, Appendix-2; Transcript dated Dec. 21, 2015 at 44-50, ECF No. 413. Whether the market, upon receiving new information, moved in the precise way analysts or experts would expect it to move is not the key to unlocking Basic's presumption of reliance. What is essential is evidence that, when the market received new information, it "generally affect[ed]" the price. Halliburton, 134 S. Ct. at 2410. In this case, the z-tests provide such evidence. Accordingly, the Court concludes that the limited evidence of directionality is not fatal to plaintiffs' showing of market efficiency.

Finally, Gompers objected to the sufficiency of Feinstein's results on the grounds that "in an efficient market, the price of a security should always move in response to the release of new value-relevant information that is materially different from expectations." Gompers Rebuttal Report ¶ 31. Gompers allowed that, because of potential shortcomings in a regression analysis, "there may be instances where [an] event study does not always show directionally consistent price movements to new information." Id. But, he "would expect the vast majority of days with new value-relevant information that is materially different from expectations to have statistically significant price movements that are directionally consistent with the information." Id. Gompers pointed out that Feinstein's event studies failed to show that the Petrobras markets moved in response to events the vast majority of the time.

Feinstein responded that not every event will move a market and that the impact of an event depends on various factors, including, among other things, the nature of the event, whether the information involved is truly new,[11] whether a confounding

[11] This factor is why the Court gives little weight to Gompers' application of Feinstein's methodology to the eighty-five alleged corrective disclosure dates in Plaintiffs' Complaint. Gompers Report ¶¶ 88-89, 92, Ex. 3. Gompers found that the

event occurs simultaneously, the magnitude of background volatility, and how the event unfolded. Feinstein Rebuttal Report ¶ 33. In light of these complex forces, one should not expect to see a price movement on every news day.

The Court sides with Feinstein. The Supreme Court has rejected Gompers' absolutist view of market efficiency by making clear that "market efficiency is a matter of degree" and that "Basic's presumption of reliance . . . does not rest on a 'binary' view of market efficiency." Halliburton Co. v. Erica P. John Fund, Inc., 134 S. Ct. 2398, 2410 (2014). In assessing market efficiency, courts should not let the perfect become the enemy of the good. In this case, where the indirect Cammer factors lay a strong foundation for a finding of efficiency, a statistically significant showing that statistically significant price returns are more likely to occur on event dates is sufficient as direct evidence of market efficiency and thereby to invoke Basic's presumption of reliance at the class certification stage. Accordingly, plaintiffs have adequately

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proportion of alleged corrective disclosure dates with statistically significant price moves was not statistically significantly larger than other dates during the period. Id. In contrast to Feinstein's selection of event dates, which involved a tolerable level of subjectivity, see supra, the alleged corrective disclosure dates were compiled by plaintiffs as dates when news of the alleged bribery and kickback scheme trickled out. By design, they did not all involve new information being presented to the market and are therefore not an appropriate sample for a z-test. Feinstein Rebuttal Report ¶ 64.

demonstrated that common issues of law and fact will predominate over individual issues with respect to the reliance element of their Exchange Act claims.

Defendants also argue that plaintiffs have failed to satisfy Rule 23(b)(3) because they have not presented an adequate model of classwide damages. It is "'well-established' in [the Second Circuit] that 'the fact that damages may have to be ascertained on an individual basis is not sufficient to defeat class certification' under Rule 23(b)(3)." Roach v. T.L. Cannon Corp., 778 F.3d 401, 405 (2d Cir. 2015). However, the Supreme Court has held that if a court does rely on a classwide model of damages when certifying a class, the "model . . . must actually measure damages that result from the class's asserted theory of injury." Id. at 407; see Comcast Corp. v. Behrend, 133 S. Ct. 1426 (2013).

Feinstein proposed a three-step damages methodology: (1) an event study could determine the amount of price inflation in a given security, as well as how much of this dissipated upon disclosures; (2) an "inflation ribbon" could be constructed, measuring the difference between the inflated price of the security and what it would have traded at without the alleged misrepresentations; and (3) per shares damages could be calculated as the difference between the inflation on the date shares were purchased and the inflation on the date those same shares were sold. Feinstein Report ¶ 296.

In response, Gompers divided the alleged corrective disclosures into "numeric" and "non-numeric" disclosures. Gompers Report ¶ 107-08. Numeric disclosures involved quantitative information, such as the amount of a write-down, while non-numeric disclosures involved qualitative information, such as acknowledgment of ethical breaches. Id. Gompers claimed that numeric disclosures would categorically have no impact on the price of Petrobras securities because prices were based on the economic value of Petrobras's assets, specifically their future cash flows. Id. ¶¶ 109-17. Gompers further claimed that the impact of non-numeric disclosures on the prices of Petrobras securities would be too difficult to measure because, among other reasons, different investors would have had different appetites for risk when investing in Petrobras and price declines following non-numeric disclosures could have been caused by collateral factors.

It is not necessary, however, to resolve the detailed disputes over plaintiffs' damages model at the class certification stage. Indeed, plaintiffs do not even have a burden to produce a classwide damages model at this time. "'[T]he fact that damages may have to be ascertained on an individual basis' [is] simply one 'factor that [courts must] consider in deciding whether issues susceptible to generalized proof 'outweigh' individual issues' when certifying the case as a whole." Roach v. T.L. Cannon Corp., 778 F.3d 401, 405 (2d Cir. 2015). Nonetheless, the Court concludes that plaintiffs' proposed damages model weighs modestly, although not dispositively, in favor of granting class certification. Plaintiffs' proposed damages model is not unusual for a securities fraud class action. The Court credits Gompers' point that there may be serious difficulties in determining the impact of non-numeric disclosures. But it is not clear that these difficulties will be fatal, and they do not mean that plaintiffs' proposed model does not match their theory of liability. The Court does not credit Gompers' claim that numeric disclosures have no effect on the prices of Petrobras securities. The Court understands Gompers' point about economic value as a theoretical matter, but, in practical terms, it is difficult for the Court to accept that, in a reasonably efficient market, a company's stock price would not decline upon reports that it faces billions of dollars in losses. Gompers Report ¶ 108, 117. Accordingly, the Court concludes that plaintiffs' model of classwide damages provides a modest indication that common issues of law and fact will predominate over individual issues under Rule 23(b)(3).

Based on the foregoing analysis, the Court concludes that plaintiffs have satisfied the requirements of Rule 23(b)(3). Because plaintiffs have satisfied the requirements of Rule 23, the Court hereby certifies two classes. The Exchange Act Class is defined as follows:

> As to claims under Sections 10(b) and 20(a) of the Securities Exchange Act of 1934, all purchasers who, between January 22, 2010 and July 28, 2015, inclusive (the "Class Period") purchased or otherwise acquired the securities of Petroleo Brasileiro S.A. ("Petrobras"), including debt securities issued by Petrobras International Finance Company S.A. ("PifCo") and/or Petrobras Global Finance B.V. ("PGF") on the New York Stock Exchange (the "NYSE") or pursuant to other domestic transactions, and were damaged thereby. Excluded from the Class are Defendants, current or former officers and directors of Petrobras, members of their immediate families and their legal representatives, heirs, successors or assigns, and any entity in which Defendants have or had a controlling interest.

The Securities Act Class is defined as follows:

> As to claims under Sections 11 and 15 of the Securities Act of 1933, all purchasers who purchased or otherwise acquired debt securities issued by Petroleo Brasileiro S.A. ("Petrobras"), Petrobras International Finance Company S.A. ("PifCo"), and/or Petrobras Global Finance B.V. ("PGF"), in domestic transactions, directly in, pursuant and/or traceable to a May 15, 2013 public offering registered in the United States and/or a March 11, 2014 public offering registered in the United States before Petrobras made generally available to its security holders an earnings statement covering a period of at least twelve months beginning after the effective date of the offerings, and were damaged thereby. As to claims under Sections 12(a)(2) of the Securities Act of 1933, all purchasers who purchased or otherwise acquired debt securities issued by Petroleo Brasileiro S.A.

("Petrobras"), Petrobras International Finance Company S.A. ("PifCo"), and/or Petrobras Global Finance B.V. ("PGF"), in domestic transactions, directly in a May 15, 2013 public offering registered in the United States and/or a March 11, 2014 public offering registered in the United States before Petrobras made generally available to its security holders an earnings statement covering a period of at least twelve months beginning after the effective date of the offerings, and were damaged thereby. Excluded from the Class are Defendants, current or former officers and directors of Petrobras, members of their immediate families and their legal representatives, heirs, successors or assigns, and any entity in which Defendants have or had a controlling interest.

The Court appoints USS class representative for the Exchange Act Class and North Carolina and Hawaii class representatives for the Securities Act Class. The Court appoints Pomerantz LLP as class counsel for both Classes.

The Clerk of Court is directed to close documents numbered 255 on the docket of this case.

SO ORDERED.

Dated: New York, NY
February 1, 2016

JED S. RAKOFF, U.S.D.J.