Comments to the Commodity Futures Trading Commission

Concerning

Proposed Rules Regarding Position Limits for Derivatives (RIN 3038–AD15 and 3038-AD16)

By

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We respectfully submit these comments to the Commodity Futures Trading Commission ("Commission") in response to the Notice of Proposed Rulemaking regarding position limits for derivatives ("NOPR"), implemented pursuant to Section 737 of Title VII of the Dodd-Frank Wall Street Reform and Consumer Protection Act ("Dodd-Frank").[1] We believe that the Commission's implementation of these proposed regulations pursuant to Dodd-Frank will have significant impact on end-users and other market participants who use swaps and other commodity derivatives to manage their commercial risk. We are concerned, however, that some aspects of the NOPR may be better suited for the idiosyncrasies of agricultural markets rather than the day-to-day realities of energy markets. We are also concerned that the definition of bona fide hedges in regards to swaps trading may be overly restrictive and that they may in fact be detrimental to the efficiency and competitiveness of the energy market. Accordingly, we submit these comments to identify potential unintended consequences of the proposed rules and to propose some practicable remedies.

[1] Position Limits for Derivatives, 76 Fed. Reg. 4,752, RIN 3038-AD15 and 3038-AD16 (Jan. 26, 2011); Pub. L. No. 111-203 (2010).

I. Background, Summary, and Conclusion

A. Background

On January 26, 2011, the Commission issued the NOPR pursuant to Section 737 of Title VII of the Dodd-Frank Act, which modifies the Commodity Exchange Act ("CEA") to provide the Commission with the authority to establish position limits on futures, options and swaps. The NOPR, in accordance with the CEA, has provided for exemptions from such position limits for bona fide hedge transactions and has proposed to apply to swaps the definition of bona fide hedging that the CEA applies to futures and options. In the preamble, the NOPR explained that it proposed to amend the Commission's current definition of bona fide hedges to require that all bona fide hedges "necessarily" constitute transactions that are substitutes for cash market transactions or positions, rather than constitute transactions that are "normally" substitutes for cash market transactions or positions, as was specified in § 1.3(z) of the CEA.[2] The NOPR argues that excluding swaps from the definition of bona fide hedges could "deny the end-user the option of offsetting price risks" with such instruments, pursuant to a bona fide exemption.[3] This comment concerns the proposed amendments to the definition of the bona fide hedge exemption and addresses the practical relevance of some of the proposed rules, which may be better suited to the characteristics of an agricultural product market, rather than to those of competitive energy markets.

B. Commentators

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[2] NOPR, 76 Fed. Reg. at 4761.

[3] NOPR, 76 Fed. Reg. at 4760.

20036. He has a bachelor's degree in economics from Georgetown University, and he has a master's degree and a Ph.D. in economics from the University of Washington. He has been studying and consulting in the natural gas industry since joining the Federal Trade Commission in 1985. Since joining Economists Incorporated in 1992, he has consulted on many competition matters involving electric and gas companies, examined competitive issues relating to utility rates, examined issues concerning undue discrimination by operators of natural gas and electric power transmission facilities, provided market power studies for applications for market-rate authority, and studied market power issues in state restructuring proceedings. He has published articles on competition and energy matters and has spoken on numerous occasions concerning competition in natural gas, electric power, and other industries. He has previously has been accepted as an expert witness on energy matters before the Federal Energy Regulatory Commission, state commissions, and in federal court. He has taught economics at the University of Washington, Indiana University, and Stanford University (Washington Campus). A complete listing of his experience, publications, and testimony is contained in the curriculum vita presented as Attachment 1.

Dr. Morris's experience includes testimony and consulting concerning pricing issues in the natural gas industry and the relationships between the prices of financial instruments such as financial basis swaps and the price of physical gas. As part of his work he has spoken with natural gas traders and managers, reviewed testimony by traders, examined price relationships among various natural gas prices and market fundamentals, reviewed industry information and literature, and spoken with industry and academic experts.

Dr. Lona Fowdur is a Senior Economist at Economists Incorporated. She has a master's degree and a Ph.D. in economics from Cornell University. She joined Economist Incorporated in 2009 and has since worked on competition

matters involving mergers of electric and gas companies, assessed market power issues for applications for market-rate authority, and analyzed claims of anti-competitive conduct in energy markets. She has also studied hedging practices of electric utilities. Her curriculum vita is appended as Attachment 2.

C. Summary and Conclusions

Our energy firm clients support certain aspects of the proposed rule, but certain changes are needed in order to allow real hedgers—entities with assets subject to commercial risk—to hedge. As written, the rules may place more restrictions on end-users than are necessary to meet the goals of Dodd-Frank and specifically the goal of position limits, namely, to set limits "as it finds necessary in its discretion to address excessive speculation."[4]

The NOPR proposes to amend the current definition of "bona fide hedging transaction" by mandating that such transactions "necessarily", rather than "normally", be substitutes for transactions in a physical marketing channel. However, elimination of the word "normally" could lead to a definition of bona fide hedge transactions that may actually increase commercial risk, rather than help reduce it. This is because end-users, under the proposal as written, may necessarily have to implement a physical trade in conjunction with all bona fide hedge positions, even under circumstances whereby the physical trades do not make economic sense and needlessly raise the cost of commercial risk reduction strategies. We recommend that the Commission either clarify that an actual later cash transaction is not always necessary for a bona fide hedge, or that the Commission revise the language to allow bona fide hedge exemptions when subsequent physical cash transactions are expected at the time of the hedge, but may not actually occur due to changing market conditions.

[4] NOPR, 76 Fed. Reg. at 4755.

In addition, some of the rules proposed in the NOPR appear to have been formulated specifically in the context of an agricultural product market as opposed to the day-to-day realities of an energy market. For example, the hedging examples in §151.5(a)(2) include the provision that the hedge duration "may not exceed one year for referenced agricultural contracts," whereas §151.5(c) specifies that exempt anticipatory hedges may not exceed one year regardless of product. However, energy markets have sound reasons for longer-term contracting; for example, significant percentages of generation is sold forward for periods exceeding one year. It is reasonable that generation owners would also want to hedge fuel supplies (typically coal or natural gas) using hedge contracts that match the duration of their sales obligations in the electric power markets. One-year constraints on hedge durations are therefore not aligned with the practical hedging needs of generation owners in energy markets. We therefore recommend that the one-year limitation on hedge durations be removed for energy-related futures, options and swaps.

II. The Commission's Authority to Set Position Limits

A. Dodd-Frank Act

The Dodd-Frank Act granted the Commission authority to set position limits with respect to futures, options on futures, and certain over-the-counter ("OTC") derivatives. The purpose of Dodd-Frank was to limit excessive speculative trading that has been viewed as having the potential for market disruption. Section 4a(a)(1) of the CEA provides that:

> Excessive speculation in any commodity under contracts of sale of such commodity for future delivery made on or subject to the rules of contract markets or derivatives transaction execution facilities, or swaps that perform or affect a significant price discovery function with respect to

> registered entities causing sudden or unreasonable fluctuations or unwarranted changes in the price of such commodity, is an undue and unnecessary burden on interstate commerce in such commodity.

In light of this concern, Section 4a(a) of the CEA requires the Commission to impose "limits on the amounts of trading which may be done or positions which may be held by any person including any group or class of traders . . . as the [Commission] finds are necessary to diminish, eliminate, or prevent such burden."

Speculation, however, is not only a legitimate business activity, but it is also "a normal and necessary part of virtually all markets."[5] This is because speculation generates liquidity and facilitates price discovery, thereby contributing to the smooth function of complex markets. Hedging works because end-users are able to shift their business risk to parties with an opposite risk profile and because speculators are willing to accept risks that those end-users desire to reduce. Overly restrictive limits on speculative trading could have the counter-productive effect of denying legitimate hedgers counterparties that are willing to accept risk. The Commission is not at liberty to set position limits at any level that it may desire. The Commission has acknowledged that it must exercise "reasonable judgment" in setting position limits that "are necessary" to prevent excessive speculation.[6]

Reasonable limits would recognize the commercial realities for the product for which the limit is set. For example, suppose a market with no limits exhibited no "burdens" from excessive speculation for five to 10 years. The trading levels of those markets would establish a floor on a reasonable limit because none of the trading levels resulted in any indicia of excessive speculation. Suppose a

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[5] *See* Federal Energy Regulatory Commission 2006 State of the Markets Report, p 44.

[6] NOPR, 76 Fed. Reg. at 4754.

market did exhibit burdens from excessive speculation. Then a comparison of the positions that resulted in indicia of excessive speculation with positions with no indicia of excessive speculation would provide an indication of positions limits that are necessary to insure no excessive speculation. As the Commission has acknowledged in the past, limits on physical delivery of contracts can be used to set limits on position near the time of settlement of futures contracts. But purely financial swaps have no limitation on delivery, so it may be reasonable to have greater position limits on swaps than for contracts that have a delivery or receipt obligation associated with holding the position through the settlement date.

III. The Bona Fide Hedge Exemption

A. The Commission's Authority under Section 4a(a)(1) of the CEA (Futures/Options/Swaps)

Consistent with the purpose of limiting only excessive speculation, the CEA exempts bona fide hedges from position limits. Section 4a(c)(1) provides the Commission with the authority to specify a definition of bona fide hedges consistent the purpose of limiting excessive speculation and is the authority for the Commission's current definition of bona fide hedge under Section 1.3(z) of the Commission's rules. Section 4a(c)(1) allows the Commission to define the exemption to allow end-users "to hedge their legitimate *anticipated* business needs" (emphasis added). Dodd-Frank added Section 4a(c)(2), which provides a specific definition of bona fide hedge for futures and futures options. This section, however, does not mention swaps. The Commission thus has the authority to provide a workable definition of bona fide hedging for swaps, even if that definition differs from the specific definition in the language of Section 4a(c)(2).

Section 4a(c)(2) of the CEA sets out the definition of "bona fide hedging transactions" in the context of futures and options as follows:

> (2) *For the purposes of implementation of subsection (a)(2) for contracts of sale for future delivery or options on the contracts or commodities,* the Commission shall define what constitutes a bona fide hedging transaction or position as a transaction or position that—
>
> (A)(i) represents a substitute for transactions *made or to be made* or positions taken or to be taken at a later time in a physical marketing channel;
>
> (ii) is economically appropriate to the reduction of risks in the conduct and management of a commercial enterprise; and
>
> (iii) arises from the potential change in the value of—
>
> (I) assets that a person owns, produces, manufactures, processes, or merchandises or anticipates owning, producing, manufacturing, processing, or merchandising;
>
> (II) liabilities that a person owns or anticipates incurring; or
>
> (III) services that a person provides, purchases, or anticipates providing or purchasing; or
>
> (B) reduces risks attendant to a position resulting from a swap that—
>
> (i) was executed opposite a counterparty for which the transaction would qualify as a bona fide hedging transaction pursuant to subparagraph (A); or
>
> (ii) meets the requirements of subparagraph (A).

CEA § 4a(c)(2) (emphasis added).

Although the Commission acknowledged, as noted above, that the CEA places "no restriction on the Commission's ability to define bona fide hedging for swaps,"[7] the Commission has chosen to use the same definition of bona fide hedge for both swaps and futures/options. Accordingly, the proposed §151.5 defines bona-fide hedge similarly, whether applied to futures, options, or swaps.

[7] NOPR, 76 Fed. Reg. at 4760.

B. The Interpretation of Bona Fide Hedging Transactions in the NOPR is Needlessly Restrictive

The definition of "bona fide hedging transactions" for purposes of section 4a(a)(2) (futures/options) specifically references transactions or positions that represent a substitute for transactions *made or to be made* or positions taken or to be taken at a later time in a physical marketing channel. "Made or to be made" implies an expectation of a future transaction and not necessarily an actual transaction. This suggests that the bona fide hedge exemption should apply even when a physical transaction does not occur as long as the end-user *expects* to undertake the physical transactions at a later time when the bona fide hedge was put in place. This interpretation is consistent with the language of Section 4a(c)(1), and normal hedging practices, that one hedges anticipated business activities, and that subsequent physical cash market volume may be more or less than hedge volume depending upon the future realization of demand.

The prior definition in Section 1.3(z) provided flexibility for the Commission and the Designated Central Markets to review applications for bona fide hedging exemptions and make appropriate determinations that certain activities constituted bona fide hedging, even if there were not literally a later transaction in a physical marketing channel. That is, the Commission correctly recognized that in certain cases, substituting later positions in "physical marketing channels" is not a necessary or required condition of a bona fide hedge.[8] The Commission quite correctly clarified that "the temporary substitute criterion is not a restrictive, necessary condition for hedge classification."[9] This finding still holds today, particularly with using swaps to hedge commercial risk.

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[8] *See* 52 Fed. Reg. 27, at 195 (1987).

[9] *Id*.

The NOPR recognizes the need to provide a bona fide hedge exemption that *protects* entities that hedge using swaps: "A definition of bona fide hedging that would exclude swaps would deny a commercial end-user the option of offsetting price risks with swaps (as opposed to futures) pursuant to a bona fide hedge exemption."[10] However, the proposed definition (*i.e.,* the same definition as that required by Dodd-Frank to futures/options) may be overly restrictive and could deny commercial end-users the ability to use swaps to hedge. In particular, elimination of the word "normally" from the Section 1.3(z) definition leads to a definition of bona fide hedge transactions that, if read restrictively, may actually increase commercial risk. This is because under the apparent interpretation in the NOPR,[11] end-users would necessarily have to implement a later physical trade in conjunction with all bona fide hedge positions, even under circumstances whereby the later physical trade does not make economic sense. We discuss a couple of such examples below.

a) Pipeline Hedge

Traders use transportation hedges to lock in a spread using basis contracts and typically financial index swaps, thereby reducing basis risk (*e.g.,* the risk that cash prices do not justify flowing the pipeline from point A to point B, or the risk that today's spread prices will be narrower in the future). Indeed, the "anticipated" market prices inherent in the basis swaps suggest, at the time of the hedge, that gas should flow from A to B. On most days, the spreads justify utilizing the asset, but not on all days. So, even though risk has been

[10] NOPR, 76 Fed. Reg. at 4760.

[11] NOPR, 76 Fed. Reg. at 4760-61. It should be noted that the paragraph at 4760-61 discusses the CEA's definition of bona fide hedging for derivatives ("The plain text of the new statutory definition of bona fide hedging recognizes bona fide hedging for derivatives . . ."); however, at 4760, the NOPR acknowledged that the CEA "places no restriction on the Commission's ability to define bona fide hedging for swaps" and that the section 4a(c)(2) definition "refers only to futures contracts or options," not swaps. Given these conflicting statements, the Commission should clarify that the new statutory definition does not apply to bona fide hedging for derivatives.

substantially reduced by such hedging, there may not be a later physical sale on any given day. This is illustrated below.

Transportation hedges involve two transactions with financial basis swaps.[12] First, a trader would purchase a financial basis swap. For example a trader might have capacity rights on a pipeline to move natural gas from the San Juan Basin in New Mexico to the Permian Basin in Texas. To utilize the pipeline capacity, the trader would want to purchase gas from the San Juan Basin and sell it at the Permian basin. To hedge the value of the pipeline capacity, the trader would purchase a financial basis swap for San Juan Basin in which the trader receives the *IFERC* San Juan Index in exchange for the NYMEX futures contract settlement price less an adjustment.[13] Second, the trader sells a Permian Basin financial basis swap to receive the NYMEX settlement price less a corresponding adjustment in exchange for the *IFERC* Permian index. These transactions would result in the trader capturing a fixed margin for the sale.

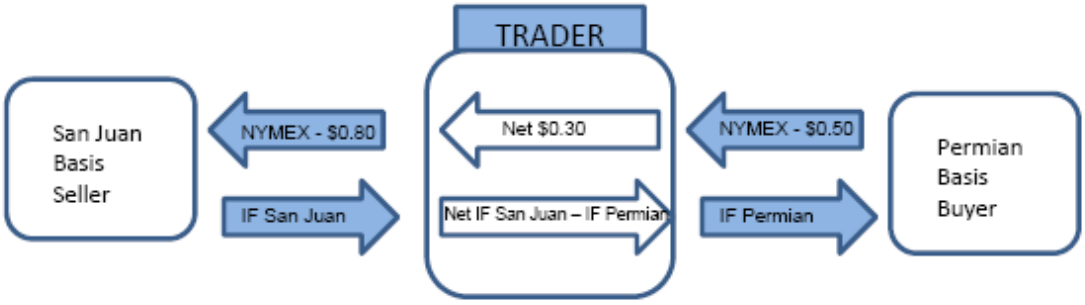
A diagrammatic representation of these transactions is shown below. The left hand side shows counterparties at San Juan Basin, the middle part shows the trader's net positions from the transactions and the right hand side shows the transactions representing the Permian Basin positions. The net of the two

[12] Financial basis swaps are instruments that settle based upon the actual physical prices of natural gas. For example, the Chicago basis swap settles on the difference between the NYMEX futures contract settlement price at the Henry Hub in Louisiana and the *Natural Gas Intelligence* ("NGI") reported index for Chicago. Because the NYMEX futures contract requires physical delivery of gas and the NGI Chicago index is based upon actual physical trades of gas, the financial basis swap derives its value from actual physical trades of gas. Basis swaps are financial because their settlements are based upon index values and no physical delivery of gas is required to settle the contracts.

[13] The *IFERC* San Juan Index is a monthly index of natural gas prices published by Platts. Platts publishes various natural gas price indices based upon the data that it collects on natural gas trades. It publishes these indices in two publications: *Inside FERC* and *Gas Daily*. *Inside FERC* provides monthly price indices for dozens of price points throughout the United States and Canada, including San Juan Basin and Permian Basin. The monthly *Inside FERC* index at a location is often referred to as *IFERC* for short. Hence, the *IFERC* San Juan index refers to the Platts' monthly index at the San Juan Basin. *Gas Daily* publishes daily price indices.

financial basis swap transactions is shown in the middle. The trader's purchase of the San Juan Basin financial basis swap yields the *IFERC* San Juan index in exchange for the NYMEX settlement price less a $0.80 adjustment. The trader's sale of the Permian financial basis swap yields the NYMEX settlement price less a $0.50 adjustment in exchange for the *IFERC* Permian index. The net of the two financial basis swap transactions is shown in the middle. From the NYMEX side of each transaction, the trader nets $0.30, which is the hedge margin. From the *IFERC* index side of the two financial basis swap transactions, the trader has the *IFERC* San Juan index and is short the *IFERC* Permian index. In this scenario, the market is expecting a $0.30 difference in price between the two locations.

Figure 1 — Transportation Hedge

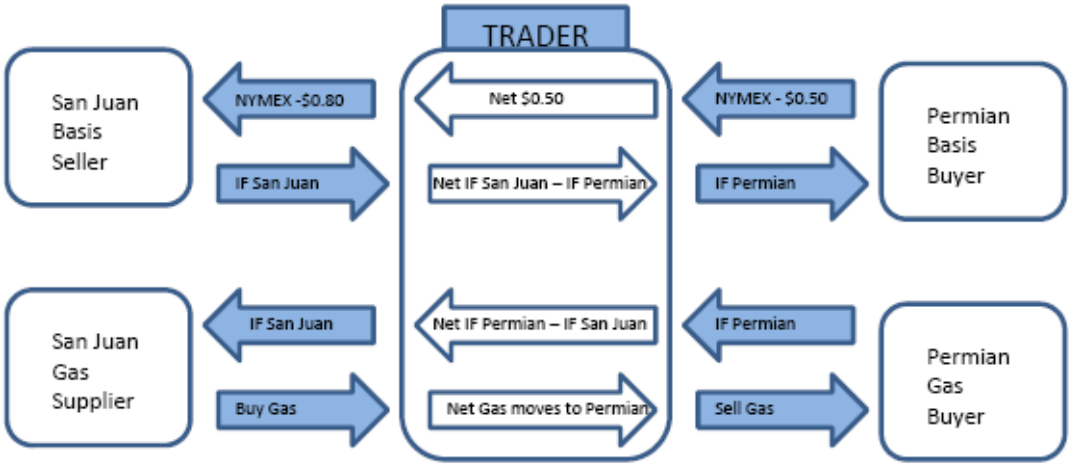


Step	Transaction	Receive	$	Pay	$
1	Buy San Juan Basis Swap	IF San Juan		NYMEX	-$0.80
2	Sell Permian Basis Swap	NYMEX	-$0.50	IF Permian	
NET		**= IF San Juan + $0.30 - IF Permian**			

Figure 2 shows a diagrammatic representation of the simplest steps involved in the physical delivery of natural gas when the above transportation hedge is accompanied with a physical delivery. The trader would buy gas from

the San Juan Basin at the *IFERC* San Juan index and sell the gas at the Permian Basin at the *IFERC* Permian index, as shown in Figure 2. The net position is that the trader gives the *IFERC* San Juan index to the gas seller at San Juan Basin and receives the *IFERC* Permian index from the gas buyer at the Permian Basin. Therefore, the net receipts from buying and selling gas exactly offset the index positions from the transportation hedge. The bottom line result is that the trader nets the $0.30 from the transportation hedges.

Figure 2 — Transportation Hedge with Physical Gas Trades at Index Prices



Step	Transaction	Receive	$	Pay	$
1	Buy San Juan Basis Swap	IF San Juan		NYMEX	-$0.80
2	Sell Permian Basis Swap	NYMEX	-$0.50	IF Permian	
3	Buy Gas at San Juan	Gas		IF San Juan	
4	Sell Gas at Permian	IF Permian		Gas	
NET		**= $0.30**			

This discussion has so far ignored the variable transportation cost of shipping the gas from the San Juan Basin to the Permian Basin (e.g., fuel cost).

If, for example, the transportation cost of shipping the gas is $0.15, the trader will net $0.15 from physical delivery in the above scenario. As long as the price difference between the San Juan Basin and the Permian Basin remains above $0.15, it is economically efficient to ship the gas and the trader would profit by purchasing the gas at the San Juan Basin and selling the gas at the Permian Basin. The net margin would remain at $0.15 because the hedge absorbs the price fluctuations.

Suppose, however, that come the time to ship the gas, the IFERC Permian and the IFERC San Juan prices shift such that the price difference is less than $0.15. In that case, given the $0.15 shipping cost, it would not be economical to ship the gas because the transaction cost, $0.15, is greater than the value difference. In fact, shipping the gas would destroy value because the actual physical costs would be greater than the value of the transportation service. In that case, the trader effectively could close out the hedge position represented in Figure 2 by taking offsetting positions in the daily markets, without initiating physical delivery, or settle its index swaps if it had transacted index swaps. While such a strategy constitutes a legitimate hedging activity (no speculation is involved) it would be precluded by a restrictive definition of bona fide hedging that requires a later physical trade in the commodity market for natural gas. A physical trade under these circumstances could in fact result in wasted resources since it could result in gas from high-priced locations being shipped to lower-priced locations.

b) Storage Hedge

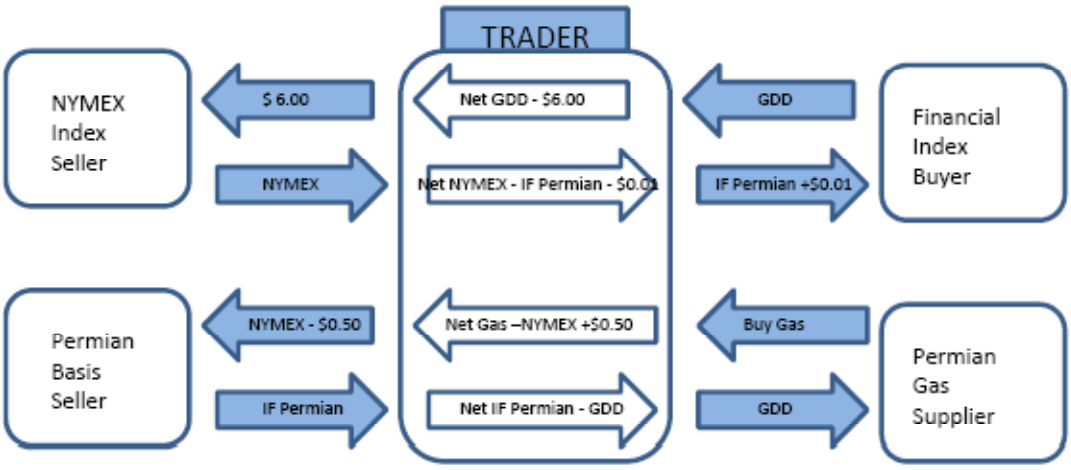
Traders use storage hedges to capture a seasonal spread for gas they inject in storage by buying NYMEX Look-Alikes, basis swaps, and index swaps in

the injection month, and selling the same in the anticipated withdrawal month.[14] Such hedges are generally followed by a later sale of gas in a physical marketing channel, although potentially not during the period anticipated in the hedge. For example, the physical injection might not be warranted in instances whereby the forward curve for gas at the time of the planned injection is such that the physical transaction will cost less in later months. This is illustrated below. First we illustrate the mechanics of a storage hedge and then we discuss circumstances whereby a physical transaction would be unprofitable.

Figure 3 is a diagrammatic representation of the mechanics of a storage hedge. This storage hedge has four components: (1) The purchase of a fixed-price instrument such as a futures contract or a fixed-swap to hedge fixed-price exposure; (2) the purchase of a basis swap to hedge basis exposure; (3) the purchase of an index swap to hedge index exposure; and (4) the purchase of physical gas, *e.g.,* from the Permian Basin at Gas Daily prices to inject gas into storage. An example of a fixed-price instrument for Step 1 could be a NYMEX look-alike for $6 in exchange for the NYMEX settlement price. In Step 2, the trader pays the NYMEX price minus $0.50 and receives the IFERC Permian Index. In Step 3 the trader pays the IFERC index for the month plus $0.01 and receives the Gas Daily average price each day. In Step 4 the trader buys physical gas at Gas Daily prices to inject physical gas into storage and receives physical gas from the Permian Basin. The net position is that the trader pays $5.51 and receives physical gas from the Permian Basin.

[14] NYMEX Look-Alikes are over-the-counter swap contracts that are cash settled based on the NYMEX settlement price. Buyers of NYMEX Look-Alikes pay a fixed price in exchange for the NYMEX settlement price. Index swaps involve the trade of one index for another. For example. the buyer of a *Gas Daily* Permian index swap receives the average of the *Gas Daily* Permian indices for a month in exchange for the *IFERC* Permain index plus some negotiated adjustment, for example, -$0.05.

Figure 3 – Storage Hedge with Physical Gas Trade at Fixed Price



Step	Transaction	Receive	$	Pay	$
1	Buy Fixed Price Instrument	NYMEX			$6.00
2	Buy Basis Swap	IF Permian		NYMEX	-$0.50
3	Buy Index Swap	GDD		IF Permian	$0.01
4	Buy Physical Gas at Permian	Gas		GDD	
NET		**= GAS - $5.51**			

A situation that would cause the trader to refrain from enacting a physical trade at the time of the planned injection can arise with a downward-sloping (backwardated) forward curve, *i.e.*, prices in subsequent months are lower than prices at the time the injection was planned. In such an instance, the trader would optimize by rolling forward the fixed-price storage hedge and not engaging in physical delivery in the planned month, but rather deferring the injection to a future point in time when prices are lower. Such a strategy is not speculative,

since the trader would simply be making avail of additional hedge instruments to lock in a different and more economical price in the future.

We recommend that the Commission's proposed definition for bona fide hedges either acknowledge that pipeline and storage hedges constitute bona fide hedges or that the definition, as it applies to swaps, be modified to allow for legitimate hedge transactions like pipeline and storage hedges to take place without the need for a subsequent physical cash transaction.[15] If the Commission refrains from making such acknowledgements or modifications, traders would either be denied legitimate bona fide hedge exemptions or be forced to execute inefficient trades. These outcomes would be inconsistent with the Dodd-Frank mandate to only reduce excessive speculation and the Commission's primary mission of promoting market efficiency.[16]

IV. Revise or Expand the Examples of §151.5(2).

We recommend that the Commission revise or expand the examples of §151.5(2). The examples apparently are intended to add clarity to the types of transactions that would qualify for bona fide hedge exemptions. But the examples show a bias of an agricultural-market view and ignore the dynamic realities of modern energy markets. Two examples show this bias.

First, the examples allow hedges of "anticipated production" or "anticipated requirements" "provided that no such position is maintained in any referenced

[15] The NOPR excludes basis contracts from the federal limits proposed under Rule 151.4; however, certain basis contracts currently have limits established by Designated Contract Markets and electronic trading platforms and, under proposed Rule 151.11, registered entities "shall" impose limits, including for non-federal limit swaps, and "shall" have procedures for obtaining exemptions that consider sound commercial practices "while remaining consistent with § 151.5." Position limits established by registered entities, who are required to be consistent with Rule 151.5, thus may deny commercial end-users the ability to use swaps to hedge without the clarifications and procedures discussed in these comments.

[16] NOPR, 76 Fed. Reg. at 4753.

contract during the five last trading days of that reference contract."[17] This requirement may make sense for futures contracts for agricultural products or metals, but it does not make sense in the case of energy swaps. In markets for agriculture and metals, futures contracts can be used for anticipated sales or purchases. The futures positions are unwound as the physical sales or purchases take place in the bilateral markets for the commodity for actual delivery. Similar activity could occur with the NYMEX gas futures contract. But most gas purchases and sales hedged by the NYMEX gas futures contract are monthly transactions. These transactions typically take place during "bid week", which begins two days before the last trading day of the NYMEX gas futures contract and continues two days thereafter. The pipeline hedge discussed above provides another example of differences in energy markets. In that case, the swap may be held until settlement. Indeed, because swaps are financially settled and do not involve delivery obligations, it is common that the swaps are held and settled. Hence, the requirement that "no such position is maintained in any referenced contract during the five last trading days of that reference contract" apparently would eliminate some of the most common hedging instruments from qualifying as bona fide hedges, at least under the example provided in §151.5(2).

Another example of the limited view of the examples in §151.5(2) is that a hedge may be used for a "fixed-priced purchase of the contract's underlying cash commodity."[18] But in the pipeline hedge example above, an index-price purchase can be used in the cash market rather than a fixed-priced transaction. Indeed, at times Commission Staff have argued that index-priced transactions are preferable to fixed-priced transactions in certain energy markets. But the examples specifically state fixed-priced transaction as opposed to "cash"

[17] §151.5(a)(2)(i)(B) and §151.5(a)(2)(ii)(C).

[18] §151.5(2)(i)(A).

transaction or "spot" transaction. A significant volume of energy transactions, whether they be monthly baseload or next-day gas transactions, are at index-based prices, and so the examples fail to include or acknowledge significant volume of contracting in energy markets.

We recommend that the Commission either broaden the examples in §151.5(2) or adopt a procedure for businesses to acquire clarification on types of transactions qualifying for a bona fide hedge. For example, a company could submit a fact pattern when it has capacity rights on a pipeline from A to B and request that Commission find that a hedge involving purchases of basis swaps at A and sales of basis swaps at B up to the capacity rights on the pipeline would qualify as a bona fide hedge. The Commission could maintain a public list of the fact patterns that qualify as bona fide hedges. Such a list would provide clarity for market participants as to the types of transactions that qualify for the bona fide hedge exemption. Registered entities could likewise be required to have such a process and also post qualifying fact patterns on their web sites.

V. Long-Term Hedges under the Anticipatory Hedge Exemption (§151.5(c))

We recommend that the Commission revise §151.5(c) to allow for long-term hedges. The purpose of the anticipatory hedge is to hedge "unsold anticipated commercial production or unfilled anticipated commercial requirements …"[19] The pipeline hedge discussed above might fall into the definition of an anticipatory hedge. The NOPR clearly states that the anticipatory hedge "may not exceed one year."[20] Once again, this reflects an agricultural-product point-of-view in which crops are hedged year by year. The hedging examples in §151.5(a)(2)

[19] §151.5(c).

[20] §151.5(c)(1)(ii).

include the provision that the hedge duration "may not exceed one year for referenced agricultural contracts."

We recommend that the language of §151.5(a)(2) limiting the one-year requirement to "referenced agricultural contracts" be extended to anticipatory hedges in §151.5(c). One of the consequences of restructuring in certain energy markets is that short-term transactions have tended to dominate in markets that rely upon long-term capital investments. The result has been undesirable consequences from certain restructuring efforts. Indeed, the Federal Energy Regulatory Commission concluded that: "Many of the market dysfunctions in California and the exposure of California consumers to high prices can be traced directly to an over reliance on spot markets."[21] Market regulators have implemented procedures to encourage longer-term contracting in restructured markets. For example, several states have three-year procurement options for acquiring generation for standard-offer service. Markets have also developed capacity markets for generation in which generation resources are required three-years in advance of actual service. Our own research indicates that over 50 percent of the hedged generation capacity is sold forward, either physically or financially, for periods over one-year. It is reasonable that the generation owners would also hedge fuel supplies (typically coal or natural gas) over one-year to match their sales obligations in the electric power markets. Such longer-term hedging should be encouraged, and not discouraged, by this Commission.

Accordingly, we recommend that the one-year limitation to anticipatory hedges in §151.5(c) be limited to agricultural contracts, as in §151.5(a)(2). The one-year limitation would reduce liquidity for bona fide hedgers and promote

[21] *San Diego Gas & Electric Company (Complainant) v. Sellers of Energy and Ancillary Services into Markets Operated by the California Independent System Operator and the California Power Exchange*, 93 FERC ¶ 61,121, at 61,359 (2000).

inefficient market-outcomes in energy markets, which are inconsistent with the Commission's mission and the goals of Dodd-Frank.

VI. Practicable Reporting Requirement (§§151.5(b), 151.5(i), 151.10(b)(2))

Under the Proposed §151.5(b), a hedger intending to rely upon the bona fide hedge exemption for federal position limits would be required to make a 404 filing containing a host of detailed information and which must also accord with §151.10(b)(2). Section 151.10(b)(2), in turn, requires 404 filings to be "submitted the day after a position limit is exceeded and all days the trader exceeds such levels and the first day after the trader's position is below the position limit." Like requirements apply to counterparties to bona fide hedgers making a 404S filing under §§151.5(i) and 151.10(b)(2).

While these provisions appear to be designed to help the Commission ensure that the bona fide hedge exemption is not being used improperly, as written they place significant costs and burdens on end-users, especially energy industry participants seeking to reduce the risk inherent in their long-term capital investments. The proposed daily 404 filings are based to some extent on the premise that bona fide hedge exemptions will be limited in scope and duration—hence the requirement to notify the Commission "the first day after the trader's position is below the position limit." In the real-world examples of the storage hedge and transportation hedge, however, the assets being hedged are long-term and the hedge positions will be maintained for months, if not indefinitely. These rules therefore, in practice, will place indefinite daily reporting requirements on both bona fide hedgers and their counterparties on top of the existing reporting requirements being proposed under Dodd-Frank.

The detailed daily reports being considered for bona fide hedgers and their counterparties may hinder the ability of real hedgers to mitigate commercial risk by adding significant compliance costs and by potentially limiting willing hedge counterparties. Consistent with existing hedge exemption regulations and processes, the initial 404 and 404S filings should be sufficient to provide the Commission with the information it needs to assess the bona fide hedge exemption request. Exempted entities could update their 404 filings if circumstances underlying the exemption change, much as other agencies require periodic updates triggered by changed circumstances. Alternatively, the Commission could require a quarterly report that restates the facts underlying the bona fide hedge request. The submission of detailed hedge transaction data in such reports, however, is duplicative and unnecessary to maintain a bona fide hedge exemption in light of (1) other Dodd-Frank reporting requirements, (2) parties' obligations to "maintain complete books and records" on bona fide hedge positions which must be made "available to the Commission upon request," and (3) the CEA's prohibition against false submissions to the Commission and registered entities.[22]

In short, we recommend that the Commission redesign the reporting process for bona fide hedging exemptions so that it is efficient and commercially practicable, and so that it provides for a meaningful opportunity for bona fide hedgers to obtain and maintain bona fide hedge exemption limits, consistent with the purpose of the CEA.

[22] CEA §§ 6(c)(2), 9(a)(3). Detailed hedge reports, especially daily reports, are likely to be highly commercially sensitive and thus may need to be maintained as confidential and not subject to the Freedom of Information Act, adding to the Commission's burdens of enforcing these proposed rules.

Attachment 1

EXPERIENCE AND QUALIFICATIONS OF

Dr. John R. Morris

OVERVIEW	Dr. Morris, a recognized expert in studying competition in energy industries, currently is a Principal at Economists Incorporated. He began his research of competition in energy industries in 1985 while working for the Federal Trade Commission. Since joining Economists Incorporated in 1992, he has consulted on many mergers and acquisitions involving energy companies, examined competitive issues relating to rates, and studied issues in state restructuring proceedings. He has published articles on competition and energy matters, and he has spoken on numerous occasions concerning competition in natural gas, electric power and other industries. He has been accepted as an expert witness on energy matters before the Federal Energy Regulatory Commission, state regulatory commissions, and in federal court.
EDUCATION	Ph.D., University of Washington, August 1985 Dissertation: *Intellectual Property: Creating, Pricing, Copying* • M.A., University of Washington, December 1983 • A.B., Georgetown University, May 1981
PRESENT POSITION	Dr. Morris is a *Principal* at Economists Incorporated, an economic consulting firm located at 1200 New Hampshire Avenue, NW, Suite 400, Washington, DC 20036. (202-223-4700) Economists Incorporated studies competition and regulation in many industries in the United States and in other countries. It is a leading firm in studying the competitive effects of mergers and acquisitions.
PREVIOUS EXPERIENCE	*Senior Vice President*, Economists Incorporated, December 2001 – December 2002 • *Vice President*, Economists Incorporated, December 1995 – December 2001 • *Senior Economist*, Economists Incorporated, June

1992 – December 1995 • *Economic Tutorial Leader*, Stanford University (Stanford in Washington), April 1993 – June 1995 • *Visiting Assistant Professor,* Department of Business Economics and Public Policy, School of Business, Indiana University, September 1991 – May 1992 • *Assistant to the Director for Antitrust,* Bureau of Economics, Federal Trade Commission, November 1989 – August 1991 • *Economic Advisor,* Office of Commissioner Machol, Federal Trade Commission, December 1988 – October 1989 • *Economist,* Division of Antitrust, Bureau of Economics, Federal Trade Commission, October 1985 – December 1988

MEMBERSHIPS

Member, International Association of Energy Economics • Associate, Energy Bar Association • Member, American Economic Association • Member, Western Economic Association International • Associate, American Bar Association

AWARDS & HONORS

Award for Excellence in Law Enforcement, Federal Trade Commission, 1988 • Graduate School Scholarship, University of Washington, 1984 • Graduated Cum Laude Georgetown University, 1981 • Senior Comprehensive Passed with Distinction, Georgetown University, 1981

TESTIMONY BEFORE THE FEDERAL ENERGY REGULATORY COMMISSION

Prepared Direct Testimony and Hearing, Mobil Pipe Line Company, OR07-21-000 (2009) • Idaho Power Company, ER06-787-002 (2009) • Affidavit, Southern Indiana Gas and Electric Co. d/b/a Vectren Energy Delivery of Indiana, Inc. ER96-2734-007 (2008) • Affidavit, Choctaw Gas Generation, LLC, *et al.* ER08-1332-002 • Affidavit, TransCanada Energy Sales Ltd., ER09-328-001 (2008) • Prepared Direct Testimony and Deposition, Oasis Pipeline L.P., *et al.*, IN06-3-004 (2008) • Affidavit, Tampa Electric Company, ER99-2342-012 • Affidavit, ANP Bellingham Energy Company, LLC, *et al.*, ER00-2117-005 (2008) • Affidavit, SUEZ Energy Marketing, NA, *et al.*, ER06-169-003 (2008) • Affidavit, TransCanada Energy Marketing ULC, *et al.*, ER07-1274-001 (2008) • Affidavit, Georgia-Pacific Brewton LLC, *et al.*, ER08-1126-000 (2008) • Affidavit, Montgomery L'Energia Power Partners LP, ER08-864-000 (2008) • Affidavit (with Joseph P. Kalt),

Energy Transfer Partners, *et al.*, IN06-3-002 (2008) • Affidavit, Energy Transfer Partners, *et al*., IN06-3-002 (2008) • Affidavit, TransCanada Maine Wind Development Inc., ER08-685-000 (2008) • Affidavit (with Joseph P. Kalt), Energy Transfer Partners, *et al*., IN06-3-000 (2007) • Affidavit, Energy Transfer Partners, *et al*., IN06-3-000 (2007) • Affidavit, The People of the State of Illinois, *ex rel.* Illinois Attorney General Lisa Madigan v. Exelon Generation Co., LLC, *et al.*, EL07-47-000 (2007) • Affidavit, Baltimore Gas and Electric Company, ER07-576-000 (2007) • Affidavit, Trans-Allegheny Interstate Line Company, ER07-562-000 (2007) • Affidavit, TransCanada Energy Marketing Ltd., *et al.*, ER07-331-000 (2006) • Affidavit, Tampa Electric Company, ER99-2342-000, ER07-173-000 (2006) • Affidavit, Koch Supply & Trading, LP, ER07-100-000 (2006) • WPS Resources Corporation and Peoples Energy Corporation, EC06-152-000 (2006) • Affidavit, Sabine Cogen, LP, ER06-744-000 (2006) • Affidavit, Air Liquide Large Industries U.S. LP, ER06-743-000 (2006) • Affidavit, ANP Bellingham Energy Company, LLC., *et al.*, ER00-2117-000 (2005) • Affidavit, Duke Energy Corporation and Cinergy Corp., EC05-103-000 (2005) • Affidavit, El Paso Marketing, L.P., *et al.*, ER95-428-000 (2005) • Affidavit, TransCanada Energy Ltd., *et al.*, ER95-692-000 (2005) • Affidavit, Granite Ridge Energy, LLC, ER00-1147-000, ER05-287-001 (2005) • Affidavit, TransCanada Power (Castleton) LLC, ER05-743-000 (2005) • Affidavit, Tampa Electric Company, *et al*., ER99-2342-003 (2005) • Affidavit, Wisconsin Public Service Corporation, WPS Energy Services, Inc., and WPS Power Development, Inc., ER96-1088-035 and Wisconsin Public Service Corporation, ER95-1528-010 (2005) • Affidavit, Wisconsin River Power Company, ER05-453-000 (2005) • Affidavit, Upper Peninsula Power Company, ER05-89-001 (2005) • Affidavit, Southern Indiana Gas and Electric Company, ER96-2734-003 (2004) • Affidavit, Tampa Electric Company, *et al*., ER99-2342-003 (2004) • Affidavits, TransCanada Hydro Northeast, Inc., *et al*., EC05-12-000, ER05-111-000 (2004) • Affidavits, Dominion Energy New England, Inc., *et al*., EC05-4-000, ER05-34-000 (2004) • Affidavit, Wisconsin Public Service Corporation, WPS Energy Services, Inc., and WPS Power Development, Inc., ER96-1088-033 and

Wisconsin Public Service Corporation, ER95-1528-008 (2004) • Affidavit, NorthPoint Energy Solutions Inc. ER04-1244-000 (2004) • Affidavit, Union Power Partners, L.P., ER01-930-004 (2004) • Affidavit, Panda Gila River, L.P., ER01-931-004 (2004) • Affidavit, Dominion Energy Kewaunee, Inc., ER04-318-000 (2003) • Affidavit, TPS GP, Inc., TPG LP, Inc., Panda GS V, LLC & Panda GS VI, LLC, EC03-90-000 (2003) • Affidavit, Berkshire Power Company, L.L.C. *et al.*, ER99-3502-001 (2002) • Affidavit, El Paso Merchant Energy, L.P., ER95-428-024 (2002) • Affidavit, Tampa Electric Company, ER99-2342-001 (2002) • Affidavit, Hardee Power Partners Limited, ER99-2341-001 (2002) • Affidavit, TECO-PANDA Generating Company, L.P., ER02-1000-000 (2002) • Affidavit, Commonwealth Chesapeake Company, LLC, ER99-415-004 (2002) • Affidavit, Wisconsin Public Service Corporation, WPS Energy Services, Inc., and WPS Power Development, Inc., ER96-1088-031 and Wisconsin Public Service Corporation, ER95-1528-006 (2001) • Affidavit, TPS McAdams, LLC and TPS Dell, LLC, ER02-507-000 and ER02-510-000 (2001) • Affidavits, Prepared Direct Testimony, and Hearing, CPUC v. El Paso Natural Gas Company, et al., RP00-241-000 (2000-2001), Affidavit, El Paso Energy Corporation and The Coastal Corporation, EC00-73-000, (2000) • Affidavit, El Paso Energy Corporation and Sonat Inc., EC99-73-000 (1999) • Prepared Testimony, San Diego Gas & Electric Company and Enova Energy, Inc., EC97-12-000 (1997) • Prepared Testimony and Hearing, Wisconsin Electric Power Co., Northern States Power Co. (Minnesota), Northern States Power Co. (Wisconsin), and Cenerprise, Inc., EC95-16-000 (1996)

TESTIMONY BEFORE STATE REGULATORY COMMISSIONS

Prepared Direct Testimony, Application of Wisconsin Power and Light Company for Issuance of a Certificate of Public Convenience and Necessity for Construction and Placement in Operation of an Approximately 300 MW Coal-Fired Baseload Facility and an Application for Approval of Fixed Financial Parameters and Capital Cost Rate-Making Principles for the Baseload Facility, Docket No. 6680-CE-170, Public Service Commission of Wisconsin (2008) • Prepared Rebuttal Testimony and Hearing, In the Matter of the Joint Petition of Public

Service Electric and Gas Company and Exelon Corporation for Approval of a Change in Control of Public Service Electric and Gas Company, and Related Authorizations, BPU Docket No. EM05020106, OAL Docket No. PUC-01874-05, New Jersey Board of Public Utilities (2005, 2006) • Affidavit, Application of Duke Energy Corporation for Authorization to Enter Into a Business Combination Transaction with Cinergy Corp., Docket No. 2005-210-E, Public Service Commission Of South Carolina (2005) • Prepared Rebuttal Testimony and Hearing, Joint Application of PECO Energy Company and Public Service Electric and Gas Company for Approval of the Merger of Public Service Enterprise Group Incorporated with and into Exelon Corporation, Docket No. A-110550F0160, Pennsylvania Public Utility Commission (2005) • Prepared Direct Testimony and Hearing, Application of Washington Gas Light Company for amendments to Rate Schedule No. 9, Firm Delivery Gas Supplier Agreement of its Gas Tariff, Docket No. PUE-2004-00085 (2005) • Prepared Direct Testimony, Application of Wisconsin Public Service Corporation for a Certificate of Public Convenience and Necessity for Construction of A Large Electric Generating Plant with Associated Facilities, known as Weston 4, at Its Existing Weston Generating Station Located in Marathon County, Docket No. 6690-CE-187, Public Service Commission of Wisconsin (2004) • Prepared Direct Testimony, Metromedia Energy, Inc. - Regarding Washington Gas Light Company's Plan to Return Customers to Sales Service Effective December 1, 2003, Docket No. PUE-2003-00536 (2004) • Report (with Mark Frankena) and Testimony, Analysis of Competitive Implications: An investigations into whether electric industry restructuring and competition in the provision of retail electric service is in the public interest, Louisiana Public Service Commission Docket No. U-21453, U-20925 (SC), U-22092 (SC) (Subdocket A) (2000) • Report and Hearing, Atlantic City Electric Company: Audit of Restructuring, New Jersey Board of Public Utilities, Docket No. EA97060395 (1998) • Prepared Testimony and Hearing, Proceeding on Motion of the Commission to Redesign Niagara Mohawk Power Corporation’s Current SC-7 Service Classification and Implement a New SC-7-A Service Classification, Case 94-E-0172, New York Public

Service Commission (1995)

TESTIMONY BEFORE FEDERAL COURTS	Report, Deposition, and Bench Trial, FTC v. Arch Coal, Inc., et al., Civil Action 04-0534 (JDB), U.S. Dist. Court, Dist. of Columbia (2004) • Report, Deposition and Jury Trial, Trigen v. OG&E, CIV-96-1595L, U.S. Dist. Court, Western Dist. of Oklahoma (1998)
TESTIMONY BEFORE STATE COURTS	Affidavit, City Public Service Board of San Antonio vs. Public Utility Commission of Texas, et al., No. 97-02917, District Court of Travis County, Texas, 200th Judicial District (1997)
OTHER TESTIMONY	Report, Metromedia Energy, Inc. v. Mirant Americas Energy Marketing, RE: 18 198 Y 18484 03 (2005) • Report and Deposition, King Provision Corporation v. Burger King Corporation and Grand Metropolitan PLC, 90-05718-CA, 4th Cir., Duval Co., Florida (1992) • Deposition, West Texas Transmission L.P. v. Enron Corp. et al., SA 88 CA 0638, W.D. Texas, San Antonio Division (1988)

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"The Likely Effect of the Proposed Exelon-PSEG Merger on Wholesale Electricity Prices," *Electricity Journal* 21(1) (Jan./Feb. 2008): 45-54 • "FERC MBR Screens: The Good, the Bad, and the Ugly," *Public Utilities Fortnightly* 143(7) (July 2005): 37-42 • "Finding Market Power in Power Markets," *International Journal of the Economics of Business*, 7(2) (July 2000): 167-178 • "Why Applicants Should Use Computer Simulation Models to Comply with the FERC's New Merger Policy," with Mark Frankena, *Public Utilities Fortnightly*, 135(3) (February 1, 1997): 22-26 • *Electric Utility Mergers*, with Mark Frankena and Bruce Owen, Chapters 1, 4, & 5, 1994 • "International Trade and Antitrust: Comments," *University of Cincinnati Law Review*, 61(3) (1993): 945-953 • "Upstream Vertical Integration with Automatic Price Adjustments," *Journal of Regulatory Economics* 4 (1992): 279-287 • "Should the U.S. Department of Justice deviate from the 5% price test for market definition on a case-by-case basis?" with Gale Mosteller, *International Merger Law*, April 1992 • "Defining Markets for Merger Analysis," with Gale Mosteller, *Antitrust Bulletin* 36 (Fall 1991): 599-640 • "Analyzing Agreements Among Competitors: What Does the Future Hold?" with Jim Langenfeld, *Antitrust Bulletin* 36 (Fall 1991): 651-679 • "In Defense of Antitrust," with Jim Langenfeld, *Regulation* 14(2) (Spring 1991): (Letters) 2-4 • "Enforcement of Property Rights and the Provision of Public Good Attributes," *Information Economics and Policy* 3 (1988): 91-108

WORKING PAPERS

"Advertising Restrictions as Rent Increasing Costs," FTC Bureau of Economics Working Paper No. 196, May 1992 • "Rent Increasing Costs: The Antitrust Implications from a Paradox in Value Theory," FTC Bureau of Economics Working Paper No. 182, November 1990 • "The Relationship Between Industrial Sales Prices and Concentration of Natural Gas Pipelines," FTC Bureau of Economics Working Paper No. 168, November 1988 • "Deregulation by Vertical Integration?" FTC Bureau of Economics Working Paper No. 166, November 1988

PRESENTATIONS & PROFESSIONAL ACTIVITIES

"Efficacy of Vertical Integration in Energy Industries with Applications to Proposed Standards of Conduct for Transmission Providers," submitted to FERC by Santee Cooper in Docket No. RM07-1-000 (2007) • Chair, Antitrust Committee, Energy Bar Association, 2004–2005 • "Competition in the Natural Gas Industry: An Antitrust Perspective, presentation to staff of the Federal Energy Regulatory Commission," March 28, 2005 • Vice Chair, Antitrust Committee, Energy Bar Association, 2003–2004 • "Weston 4 Effect on Wholesale Competition in WUMS," submitted to the Public Service Commission of Wisconsin by Wisconsin Public Service Corporation in Docket No. 6690-CE-187, September 26, 2003 • "Computer Models In The Electric Power Industry," presented to staff of the Federal Trade Commission, Washington, DC, June 11, 2002 • "TECO EnergySource Market Share Analysis," submitted to FERC by TECO EnergySource, Inc. in Docket No. ER96-1563-017, September 10, 2001 • "Finding Market Power in Power Markets," presented to staff of the Federal Trade Commission, Washington, DC, June 20, 2001 • "A Study of Marketing Affiliate and Other Affiliate Holdings of Firm Capacity on Interstate Natural Gas Pipelines and the Effects on Natural Gas Markets," April 30, 2001, submitted to FERC by the Interstate Natural Gas Association of America in Docket No. PL00-1-003 • "Why We Should Use Computer Models to Unveil Market Power," presented at the Sixth DOE–NARUC National Electricity Forum, Brown Convention Center, Houston, TX, September 16, 1998 • Comments, *Agency Information Collection and Dissemination Activities: Comment Request*, U.S. Department of Energy, Energy Information Administration, August 28, 1998 • Comments, *Revised filing Requirements Under Part 33 of the Commission's Regulations*, Federal Energy Regulatory Commission Docket No. RM98-4-000, August 21, 1998 • "Use of Computer Simulation Models to Unveil Market Power," presented to staff of the Federal Trade Commission, Federal Energy Regulatory Commission and U.S. Department of Justice, Federal Trade Commission, Washington, DC, April 10, 1998 • "Use of Computer Simulation Models to Unveil Market Power: The Primergy Case," presented to the Bureau of Economics, Federal Trade Commission, Washington, DC , December 8, 1997 • "Use of Computer Simulation Models to Unveil

Market Power," presented at the 29th Annual Conference of the Institute of Public Utilities, Williamsburg, Virginia, December 3, 1997 • **"**Mergers and Market Power," presented at the National Association of State Utility Consumer Advocates Mid-Year Meeting, Charleston, South Carolina, June 9, 1997 • "Market Power Analysis: An Economic Perspective," (with Mark Frankena), presented at the Strategic Research Institute Conference on The Legal Challenges of Restructuring, Arlington, Virginia, April 16, 1997 • "Mergers and Market Power," presented at the Edison Electric Institute Workshop on FERC Merger Policy Guidelines, Arlington, Virginia, April 1, 1997 • "New Approaches to Controlling Distribution Company Market Power," presented at the New York Energy Efficiency Council Conference on Innovative Solutions to a Changing Energy Market, New York Athletic Club, February 7, 1997 • Description of the Western Power Model, with Mark Frankena, Exhibit 8 to Prepared Testimony Before the Nevada Public Service Commission, January 31, 1997 • Reviewer, American Bar Association, Section of Antitrust Law, *Manual on the Economics of Antitrust Law, 14th Supplement*, 1995 • Referee, *Quarterly Journal of Business and Economics*, 1994—1995 • Reviewer, American Bar Association, Section of Antitrust Law, *Manual on the Economics of Antitrust Law, 10th Supplement*, 1993 • Expert Witness, Federal American Inn of Court, Washington, DC, Winter 1993 • "Advertising Restrictions as Rent Increasing Costs," presented at a *Contemporary Policy Issues* Session of the Western Economics Association's 67th Annual Conference, July 1992 • "Let's Make Merger Policy 'Fully Consonant With Economic Theory,'" presented at a *Contemporary Policy Issues* Session of the Western Economics Association's 67th Annual Conference, July 1992 • "Advertising Restrictions as Rent Increasing Costs," Seminar, Department of Business Economics, Indiana University, October 1991 • "International Trade and Antitrust: Comments," presented at a *Contemporary Policy Issues* Session of the Western Economics Association's 66th Annual Conference, July 1991 • Discussant, Western Economics Association's 66th Annual Conference, July 1991 • Horizontal Restraints Cases at the Federal Trade Commission: From *American Medical Association* through the Present," with Jim

Langenfeld, presented at the 60th Annual Conference of the Southern Economics Association, November 1990 • "Defining Markets for Merger Analysis," with Gale Mosteller, presented at a *Contemporary Policy Issues* Session of the Western Economics Association's 65th Annual Conference, cosponsored by the *Antitrust Bulletin* and the Antitrust and Trade Regulation Section of the Federal Bar Association, July 1990 • "Analyzing Agreements Among Competitors: What Does the Future Hold?" with Jim Langenfeld, presented at a *Contemporary Policy Issues* Session of the Western Economics Association's 65th Annual Conference, cosponsored by the *Antitrust Bulletin* and the Antitrust and Trade Regulation Section of the Federal Bar Association, July 1990 • "The Relationship Between Industrial Sales Prices and Concentration of Natural Gas Pipelines," Seminar, Office of Economic Policy, Federal Energy Regulatory Commission, Summer 1989 • "The Relationship Between Industrial Sales Prices and Concentration of Natural Gas Pipelines," Seminar, Economic Analysis Group, Antitrust Division, U.S. Department of Justice, February 1989 • "Deregulation by Vertical Integration?" Seminar, Department of Business Economics, Indiana University, January 1989 • Discussant, Industrial Organization Society Session, Annual Meeting of the American Economics Association, December 1988 • "Concentration and Price in the Natural Gas Industry," Seminar, Federal Trade Commission, July 1988 • "Relevant Measures of Concentration for Antitrust Policy," presented at an Industrial Organization Society Session of the 57th Annual Conference of the Southern Economics Association, November 1987

Attachment 2

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Education

Ph. D. Economics, Cornell University, August 2009
Industrial Organization, Applied Economics
Dissertation title: *"Essays on the U.S. Motion Picture Industry"*

M. A. Economics, Cornell University, 2007

B. A. Economics (First Class Honors), University of Adelaide (Australia), 2002

B. A. Finance, University of Adelaide (Australia), 2001

Papers and Articles

The Intel-AMD Antitrust Suits: Economic Issues and Implications. American Bar Association Section of Antitrust Law Communications & Digital Technology Industries Newsletter: ICARUS , Winter 2010.

FTC and DOJ Release Draft of Revised Horizontal Merger Guidelines. Economists Ink, Special Issue, May 2010.

Merger Guidelines to be Reviewed. Economists Ink, December 2010.

The Impact of Emotional Product Attributes on Consumer Demand: An Application to the U.S. Motion Picture Industry. Johnson School Research Paper Series No. #22-09 Samuel Curtis Johnson Graduate School of Management and Cornell

University - Johnson School of Management, with Vrinda Kadiyali and Vishal Narayan, May 2009

An analysis of the Review Formulation Framework Used by Movie Critics. Mimeo, Cornell University, September 2008

Awards and Fellowships

Sage Fellowship, Cornell University, 2004 & 2007

Ernest Liu Family Outstanding Teaching Award, Cornell University, 2007

Best Tutor Award, University of Adelaide, 2003 & 2002

Citigroup Asset Management Prize for best overall performance, Bachelor of Finance, 2001

ABN AMRO Morgans Prize for best level II finance, University of Adelaide, 2000

The Patrick Wheelan Investment Prize for level II finance, University of Adelaide, 2000

University of Adelaide Scholarship for Bachelor of Finance, 1999 – 2001

Teaching Assistantships

Probability and Statistics (600 Level) with Professor Thomas Diciccio, Cornell University, Fall 2008

Derivatives Equities and Related Products (MBA class) with Professor Mark Zurack, Cornell University, Fall 2008

Econometrics (300 Level) with Professor Thomas Diciccio, Cornell University, Spring 2007

Microeconomics (300 Level) with Professor Ani Guerdjikova, Cornell University, Fall 2006

Macroeconomics (100 Level) with Professor Steven Kyle, Cornell University, Spring 2006

Statistics and Probability (200 Level) with Professor Jeffrey Lewis, Cornell University, Fall 2005

International Trade and Investment Policy (200 Level) with Professor Brian Bentick, University of Adelaide (Australia), Semester 1, 2004

Microeconomics (200 Level) with Professor Eran Binenbaum, University of Adelaide (Australia), Semester 2, 2003

International Trade and Investment Policy (200 Level) with Professor Kym Anderson, University of Adelaide (Australia), Semester 2, 2002

International Trade Theory (300 Level) with Professor Kym Anderson, University of Adelaide (Australia), Semester 1, 2002