The Budgetary Impact of Eliminating the GPOs' Safe Harbor Exemption from the Anti-Kickback Statute of the Social Security Act

by

Hal J. Singer†

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† President, Criterion Economics, L.L.C. Criterion is a consulting firm with offices in Washington and Cambridge that provides advice on strategic, economic, and business transformation matters to a diverse group of clients. For more information about Criterion, you can visit our website at www.criterioneconomics.com. Financial support for this report was provided by the Medical Device Manufacturers Association.

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I. Introduction and Summary of Conclusions

Group purchasing organizations (GPOs) purport to act as agents for many of the nation's hospitals, negotiating contracts with medical suppliers, including medical device makers. A GPO identifies medical products for its members and negotiates contracts for them, but member hospitals do the actual buying. For many hospitals, the GPO-selected vendors are, as a practical matter, the only vendors from whom the hospitals will consider purchasing. By paying fees to GPOs that largely determine which products many hospitals buy, a medical device maker can secure an exclusive contract to sell its device to thousands of hospitals, can obtain percentage-based commitments from member hospitals, or can induce the GPO to negotiate too high a price. In particular, medical supply companies pay GPOs hundreds of millions of dollars in fees annually that represent a percentage of hospital purchases; the more hospitals spend on the preferred medical supplies, the greater the fees the GPOs collect from the medical suppliers. Indeed, according to an investigation by the *New York Times*, Premier, a San Diego-based GPO

that represents non-profit hospitals, received stock or stock options from medical supply companies with which Premier contracts.[1]

The purported goal of a GPO is to use its buying power to find the best medical products for its member hospitals at the lowest prices. But that goal could be undermined because the agents (the GPOs) are paid by medical supply companies and not by their ultimate principal (the hospitals). Hence, the appropriate lens through which to analyze the competitive and budgetary effects of eliminating side-payments to GPOs is the classic principal-agent paradigm of economics.

The anti-kickback statute of the Social Security Act makes it a criminal offense knowingly and willfully to offer, pay, solicit, or receive any remuneration to induce referrals of items or services reimbursable by federal health care programs.[2] Convinced by GPOs that federal health care expenditures could be reduced if medical suppliers were allowed to pay the GPO's costs, Congress amended the Act in 1986 by exempting GPOs from the general statutory ban on such kickbacks where the government covers health care costs.[3] In 1991, the Department of Health and Human Services (HHS) established "safe harbors" for purposes of the anti-kickback provision, which provide that GPOs are to have written agreements with their customers either stating that fees are to be three percent or less of the purchase price, or specifying the amount or maximum amount that each vendor will pay.[4]

From an economic perspective, the rationale for limiting the magnitude of side-payments to GPOs is clear: As the fees paid by medical suppliers to a GPO come to dominate the fees paid

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1. *See* Walt Bogdanich, *Medicine's Middlemen; Questions Raised of Conflicts At 2 Hospital Buying Groups*, N.Y. TIMES, Mar. 4, 2002, at A1[hereinafter *NY Times Investigation*].
2. *See* 42 U.S.C. §1320a-7b(b).
3. *See* 42 C.F.R. 1001.952(j).
4. *See* 56 Fed. Reg. 35952, 35982.

by its member hospitals, the incentive of a GPO to act in the best interest of its principals (member hospitals) will be dampened. Several indicators suggest that GPOs have not respected the three-percent-of-purchase-price threshold. For example, Novation, an Irving, Texas-based GPO that represents community hospitals and academic hospitals, acknowledged in 2002 that about 30 percent of its contracts contained administrative fees that exceeded three percent of sales.[5] Although Premier currently does not accept administrative fees above three percent, it has accepted stock in supplier companies in lieu of or in addition to cash payments.[6] According to a General Accounting Office (GAO) report issued in 2003, two out of seven GPOs reported that the maximum contract administrative fee received from manufacturers in 2002 exceeded the three-percent threshold.[7] The GAO also found that fee levels for private label products—that is, products sold under a GPO's brand name—were on average five percent.[8] For one of the GPOs in the GAO study, the administrative fee for private label products was nearly 18 percent.[9] According to an April 2005 report in the *Los Angeles Times*, supplier fees paid to GPOs range from three percent of a manufacturer's sales to as much as twelve percent under certain circumstances.[10]

Although some GPOs cap their administrative fee receipts at three percent, they collect additional fees from suppliers. These fees include marketing fees, licensing fees, stocking fees, switching fees, and growth fees. It bears emphasis that the original intent of the administrative fee was to cover the overhead of the GPO contracting functions: The fee was never intended for

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5. *NY Times Investigation*, *supra* note 1, at A1.
6. *Id.*
7. GAO 2003 GPO Report, General Accounting Office, Use of Contracting Processes and Strategies to Award Contracts for Medical-Surgical Products, GAO-03-998T, July 16, 2003, at 10 [hereinafter *2003 GAO GPO Report*].
8. *Id.*
9. *Id.*
10. Michael Hiltzik, *Supply Middlemen May Leave Hospitals Ailing*, L.A. TIMES, Apr. 14, 2005, at B1 [hereinafter *Supply Middlemen*].

other business ventures or overages. A portion of the unused money goes back to the member hospitals in annual disbursements. Other hospitals that buy through the groups but do not have an ownership stake get no cash back. According to the *New York Times'* investigation in 2002, however, a large portion of the supplier fees paid to GPOs was not passed on to member hospitals.[11] This finding was confirmed by two Health and Human Services (HHS) reports released in 2005, which showed that GPOs pass on only between 68 and 79 percent of the savings net of expenses to member hospitals.[12]

In this report, I attempt to quantify the budgetary impact of eliminating the GPOs' safe harbor exemption from the Medicare anti-kickback statute. In Part II, I review the academic literature on agency problems in the health care industry, and I relate the findings of agency problems in other industries (finance and real estate) to the agency problem here. In Part III, I explain why the elimination of the GPOs' safe harbor exemption from the Medicare anti-kickback statute would not increase the federal government's health care expenditures. If the exemption were repealed, GPOs would still exist, as would any efficiencies they confer to member hospitals. But GPOs would be paid by hospitals and thus motivated to be loyal to hospitals. In particular, member hospitals would pay GPOs their operating expenses plus a competitive return on those expenses. Because existing rebates offered to GPOs would be offered directly to hospitals or indirectly to hospitals through the GPOs, the elimination of the GPOs' safe harbor exemption from the Medicare anti-kickback statute should have no negative effect on hospital expenditures and thus no negative effect on the government's expenditures.

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11. *NY Times Investigation*, *supra* note 1, at A1 ("Instead of being returned to hospitals, some of that revenue goes to finance programs that have little to do with negotiating buying contracts.").

12. Office of Inspector General, Review of Revenue from Vendors at Three Group Purchasing Organizations and Their Members, Jan. 19, 2005 [hereinafter *First OIG Report*]; Office of Inspector General, Review of Revenue

This conclusion assumes generously that: (1) 100 percent of the rebates paid to GPOs by medical suppliers are passed on to member hospitals; (2) there is no distortionary effect of the current regime on the incentives of the GPOs to secure the best prices possible for hospitals; (3) hospitals have been properly accounting for their GPO net revenue distributions to Medicare; and (4) these fees are not used to further anticompetitive exclusion.

When the first two of these assumptions are relaxed to more closely conform to reality, the effect of the elimination of the safe harbor would be to decrease hospital expenditures on medical supplies, thereby decreasing the federal government's expenditures. When the first assumption (full pass through of rebates net of expenses to member hospitals) is relaxed, I estimate that total savings to member hospitals would be between $471.1 million and $808.1 million per year. When the second assumption is relaxed, I estimate that side-payments to GPOs have contributed to excessive medical expenditures by member hospitals on the order of $830 million to $4.15 billion. When the two effects are combined, the total savings to member hospitals is between $1.30 billion and $4.96 billion. Assuming that the federal government saves $0.46 for each additional dollar saved by member hospitals,[13] I estimate that the federal government would save between $598 million and $2.28 billion per year. Finally, when the third assumption (complete reporting of net revenue distribution by hospitals to Medicare) is

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from Vendors at Three Additional Group Purchasing Organizations and Their Members, May 19, 2005 [hereinafter *Second OIG Report*].

13. According to the Center for Medicare and Medicaid Services's National Health Accounts, the ratio of federal expenditures on hospital services to total expenditures on hospital services in 2004 was roughly 46 percent. *See* National Health Expeditures by type of service and source of funds, CY 1960-2004, available at http://www.cms.hhs.gov/NationalHealthExpendData/02_NationalHealthAccountsHistorical.asp#TopOfPage [hereinafter *National Accounts*]. Other studies in the health care industry have used the same methodology to calculate federal savings resulting from a reduction in total health care expenditures. *See*, *e.g.*, Muse and Associates, A Cost Savings and Marketplace Analysis of the Health Care Group Purchasing Industry, prepared for the Health Industry Group Purchasing Association (HIGPA), June 2005, at 1.

relaxed,[14] I estimate that the federal government's savings would increase by an additional $42 to $220 million per year, which brings the total federal savings to between $640 million and $2.5 billion per year. These calculations do not attempt to quantify the additional savings that will be realized by state and local governments.

This estimate of government savings is conservative because it does not account for the possibility that the payment of fees by device makers makes it easier to implement schemes of anticompetitive exclusion that harm hospitals. Recent verdicts and settlements in the hundreds of millions indicate that the size of this effect is economically significant,[15] but I make no effort to quantify it here. Because of this inflationary effect, the true cost savings to the government would be even larger if it eliminated the exception to the anti-kickback statute. Moreover, this estimate is conservative because it does not include the cost of treating patients and caregivers who have been harmed by substandard medical devices, which could be replaced by higher quality devices, at comparable or lower prices, if the incentives of GPOs were properly aligned with member hospitals.

II. The Perverse Incentives Created when Buying Agents Receive Side-Payments in the Medical Supply Industry and Other Industries

Side-payments made by sellers typically create conflicts of interest for buying agents. Most buyers would object to side-payments if they believed the buying agent could not act in their best interests. Yet side-payments from sellers are prevalent in many industries in the economy. In some industries like finance, the principals are not aware that the side-payments are taking place. In other industries like real estate, the principals are aware of the practice but

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14. *First OIG Report*, *supra* note 12, at 7 (showing that 21 member hospitals surveyed did not report to Medicare 21.6 percent of net revenues distributed by GPOs).

15. *See*, *e.g.*, Heather Smith, *Big Suits - Retractable v. Becton, Dickinson et al.*, THE AMERICAN LAWYER, July 3, 2003, available at http://www.lanierlawfirm.com/art-010703.htm.

because the practice is so pervasive, they cannot find good substitutes. In this section, I review the agency problems in the medical supply industry and in other industries in the U.S. economy.

A. The Theory of Agency Problems in the Medical Supply Industry

GPOs receive various payments from medical suppliers in return for routing their members' purchases to a particular vendor. In his testimony to Congress, Professor Einer Elhauge of Harvard Law School explained that these payments can cause GPOs to agree to adverse prices or anticompetitive conditions that are harmful to hospitals.[16] These payments are particularly harmful when they consist of side-payments that are not related to the volume of purchases, as many are.[17] But Professor Elhauge also shows that even percentage-based payments give GPOs incentives to negotiate insufficiently hard for lower prices because higher prices net them a higher fee. Moreover, because the purchase price is paid by hospitals (and not the GPOs), and because the GPOs get a percentage of what the hospitals pay, volume-based side-payments made to the GPOs do not reduce the marginal costs to hospitals by an equal amount because GPOs only return a fraction of their revenue to member hospitals.[18] Finally, volume-based side-payments are generally returned to shareholder hospitals only, which are only a subset of the member hospitals that buy the products.[19]

Principal-agent problems have been long studied in the field of economics,[20] and its treatment is often found in the "Moral Hazard" chapter of any textbook on the economics of

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16. Einer Elhauge, The Exclusion of Competition for Hospital Sales Through Group Purchasing Organizations, Report to U.S. Senate, June 25, 2002, at 28-42, available at http://www.law.harvard.edu/faculty/elhauge [hereinafter *Elhauge Testimony*]

17. *Id.*

18. *Elhauge Testimony, supra* note 16, at 30.

19. *Id.* at 31.

20. For a classic treatment, see Sanford J. Grossman & Oliver D. Hart, *An Analysis of the Principal-Agent Problem*, 51 ECONOMETRICA 7-45 (1983); Michael C. Jensen & William H. Meckling, *Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure*, 3 J. FIN. ECON. 305 (1976).

uncertainty and information.[21] Moral hazard arises whenever (1) a principal cannot perfectly monitor the actions of his agent and (2) the agent's success depends in part on some random process that is outside the control of the agent.[22] GPOs are supposed to be the agent of hospitals; they are being paid for their advice about which devices to buy. Because member hospitals cannot perfectly monitor the dealings between their GPO and the medical supplier, and because the outcome of the bidding process depends on other factors besides the effort of the GPO, the two conditions for moral hazard are clearly satisfied and the optimal contract for the GPO is difficult to construct. Side-payments from medical suppliers distort the GPOs' incentives to effectively advise hospitals, and thus exacerbate the principal-agent problem. For example, the GPO may be willing to enter into an exclusive agreement with an incumbent medical supplier that harms its members so long as the GPO receives direct payments from the medical suppliers. As Professor Elhauge points out, even if the harm to its member hospitals would to some extent harm the GPO, that harm can be more than offset by the direct gain the GPO receives from the medical supplier.[23]

For at least three reasons, the agency costs in the medical industry are significant, which implies that GPOs (agents) generally have strong incentives to deviate from the interests of their member hospitals (principals). First, until Congress took an interest in the matter, hospitals were ignorant of the extent of the conflicts and that they were being deceived. Second, even if a hospital were aware of this agency cost, it might conclude that such cost is offset by the value of

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21. *See*, *e.g.*, JEAN-JACQUES LAFFONT, THE ECONOMICS OF UNCERTAINTY AND INFORMATION 180-195 (MIT Press 1995).

22. *Id.* at 181.

23. *Elhauge Testimony*, *supra* note 16, at 36.

having an agent.[24] Third, it is hard for the member hospitals to discern the true long-term costs of the GPOs' agreeing to the anticompetitive scheme with a preferred medical supplier. As Professor Elhauge explains, a GPO may benefit by procuring a short-term price reduction for their members even if their members' long-term costs increase because the scheme enhances seller market power. Eventually the members' long-term medical supply costs will increase, but that problem may well be attributed to general market forces rather than the GPO's earlier decisions.

B. Empirical Evidence of Agency Problems in the Medical Supply Industry

Conflicts of interest in the medical supply industry can manifest themselves in terms of sacrifices in quality of the products purchased and increases in prices. In this section, I review the empirical evidence in support of these economic predictions.

1. Sacrificing Quality

There are several anecdotes of GPOs steering member hospitals' purchases to a device that the hospital and sometimes even the technical staff of the GPO itself considered to be inferior.

- **Masimo**: Masimo is a maker of pulse oximeters, which are clipped to a finger or toe to measure blood oxygen levels. Masimo did not have a contract with Premier or Novation. Both had awarded "sole source" contracts to Nellcor, which meant that hospitals were given strong financial incentives to buy Nellcor oximeters. According to the *New York Times* investigation, Masimo's product was considered by doctors to be a "significant advance over Nellcor's product." Masimo was believed by doctors to have "played a critical role in helping to virtually eliminate certain infant eye damage." Indeed, Premier's technical staff endorsed Masimo's product over its rival's device, saying in a 1999 report: "Clinical trials conducted and published by well-respected physicians in the U.S. indicate that Masimo SET has significant clinical advantages to neonates and some highly critical adult patients." The report added, "We can conservatively say Masimo technology will remain superior" to Nellcor through the remainder of 1999." Premier officials said they based their rejection of Masimo's device on a survey of member hospitals. But of the 20 medical

24. *Id*. at 45 ("If the GPO confers a valuable benefit as to many other products, it has agency slack to pursue side-profits on some products.").

personnel surveyed that were familiar with Masimo's product, 15 said it was "more accurate than other pulse oximetry devices or eliminates false alarms." Novation said it awarded a contract to Nellcor, rather than Masimo, for financial and clinical reasons. Masimo won at trial on its claims.

- **Retractable Technologies**: Retractable Technologies is a maker of safety syringes based in Little Elm, Texas. Retractable's VanishPoint needle protects health care providers from accidental pricks with a spring that automatically pulls the needle back into the syringe before leaving the patient's body. Retractable sued Premier and Novation in Texas, alleging that, among other items, the GPOs steered their members' purchases to Becton Dickinson and Tyco despite the fact that the GPOs' technical staff considered Retractable's syringes to be superior. Because the case was settled in April 2003 before it reached trial, the evidence that Retractable and its economic experts, including Professor Elhauge, put forward in support of this proposition remains under seal.[25]

- **St. Jude Medical**: St. Jude Medical is a maker of pacemakers. St. Jude wanted to sell its product to Premier, but two principal competitors—Medtronic and Guidant—already had it. To help evaluate St. Jude's claims that its technology represented a "breakthrough," Premier formed an expert panel of six cardiologists, including Dr. Anne Curtis at the University of Florida. St. Jude claimed it could operate a pacemaker on less electricity, meaning the implanted battery would last longer. According to the *New York Times* investigation, on September 19, 2000, the panel concluded: "In light of the increased device longevity and ease of use, the expert panel agreed unanimously that St. Jude's breakthrough claim is substantiated." But Premier reported to its contracting committee that the experts had found only a "theoretical breakthrough potential," and never mentioned the unanimous expert conclusion. In March 2001, Premier's contracting committee rejected St. Jude's request after concluding that the product's battery did not last significantly longer than the battery of its rivals.

These examples expose the GPOs' conflicts of interest, which leads to sacrifices in quality. Indeed, these conflicts have motivated GPOs to sidetrack new products that might threaten the market shares of established manufacturers for whom the GPOs have cemented relations.

2. Increasing Prices

The above examples pointed to sacrifices in product quality that can emerge in the presence of conflicts of interest, while the examples below highlight the possibility of higher prices.

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25. *See* Heather Smith, *Big Suits - Retractable v. Becton, Dickinson et al.*, THE AMERICAN LAWYER, July 3, 2003, available at http://www.lanierlawfirm.com/art-010703.htm.

- **University of California**: The prices that the largest GPO, Novation, charges the University of California on its drug purchasing contract have been undercut by hundreds of thousands of dollars by a group of oncologists at UCLA who decided to contract with suppliers themselves.[26]

- **GAO 2002 Price Study:** The GAO study asked whether hospitals got lower prices on their own than from a GPO when buying the *same* model of safety syringe. The study found that median prices were higher through GPOs than outside them for all safety syringe models (by 1 to 5 percent) and most pacemaker models.[27] As explained by Professor Elhauge in his Senate testimony, however, the GAO study does not purport to measure the full costs to hospitals of the exclusionary agreements because it does not consider the greater costs of excluding cheaper models.[28] For example, even if GPOs excluded a superior Masimo product that was 30 percent cheaper than the Nellcor model, the GAO study "would not pick up that cost difference unless Nellcor charged more when its model was sold through the GPO than when its model was sold outside it."[29]

- **Retractable Technologies:** Retractable Technologies reported that Novation finally said it would agree to use safer needle technology from Retractable Technologies, but only if it were sold under Novation's private label for a price 270 percent higher than Retractable wanted to charge.[30]

- **Hill-Rom**: On June 30, 2003, a class action lawsuit was filed in the U.S. District Court for the District of South Carolina by the Spartanburg Regional Healthcare System on behalf of a class of similarly situated hospitals and other health care facilities against Hillenbrand Industries, Inc. and its subsidiaries Hill-Rom, Inc. and Hill-Rom Company, Inc. The complaint alleged higher prices for hospital beds that resulted from bundled loyalty rebates offered by Hill-Rom through GPOs. A settlement in principle was announced on November 16, 2005 that, once finalized, will require the defendants to continue to refrain from certain pricing practices consistent with policies put in place by Hill-Rom in 2002 and to pay $337.5 million in cash to the members of a proposed settlement class.

These examples demonstrate that the financial arrangements between GPOs and medical suppliers often result in higher prices paid by member hospitals.

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26. *Supply Middlemen*, *supra* note 10, at B1.
27. *See* GAO, Group Purchasing Organizations—Pilot Study Suggests Large Buying Groups Do not Always Offer Hospitals Lower Prices, Apr. 30, 2002, at 11 (showing that GPOs' median price is higher for all safety needle models and for 60 percent of pacemaker models) [hereinafter *2002 GAO GPO Study*].
28. *Elhauge Testimony*, *supra* note 16, at 21.
29. *Id.*
30. *See* Thomas Shaw, *Examine the 'questionable' side of GPOs*, DALLAS BUS. J., Mar. 15, 1999.

C. Empirical Evidence of Agency Problems in Other Industries

The theoretical literature on the principle-agent problem has spawned several empirical papers that attempted to quantify the magnitude of the distortion created by agency costs. In this section, I review the empirical literature from the real estate and finance industries.

1. Real Estate Agents

Professor Stephen Levitt and Chad Syverson of University of Chicago analyzed the behavior of real estate agents using the lens of the principal-agent framework.[31] Because real-estate agents know much more about the housing market than the typical homeowner, there are large agency costs in the real estate industry. The authors hypothesize that real estate agents have an incentive to convince their clients to sell their houses too cheaply and too quickly because real estate agents receive only a small share of the incremental profit when a house sells for a higher value. To test this hypothesis, they compare home sales in which real estate agents are hired by others to sell a home (the potential for distorted incentives) to instances in which a real estate agent sells his or her own home (the control group). Levitt and Syverson find that homes owned by real estate agents sold for about 3.7 percent more than other houses and stay on the market about 9.5 days longer, even after controlling for a wide range of housing characteristics. Moreover, they find these effects to be larger in situations where the agent's informational advantage is larger.

2. Soft Dollars in Mutual Funds

Mutual funds frequently receive some type of research service in return for sending an equity trade to a specific brokerage firm. The research services provided by brokers can be

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31. Steven D. Levitt & Chad Syverson, *Market Distortions when Agents are Better Informed: The Value of Information in Real Estate Transactions*, NBER Working Paper No. W11053, Jan. 2005. For a more accessible exposition of the subject, see STEVEN D. LEVITT & STEPHEN J. DUBNER, FREAKONOMICS: A ROGUE ECONOMIST EXPLORES THE HIDDEN SIDE OF EVERYTHING 55-88 (HarperCollins 2005).

thought of as rebates granted to mutual funds in return for excess commissions paid by fund providers. These commissions are referred to as "soft dollars." Professor Marshall Blume of the University of Pennsylvania surveyed institutional managers and a sample of their trading records to examine the effect of soft dollars on the structure of the brokerage industry.[32] He found that these effects have been significant in redirecting order flow to different types of brokers. Additionally, he found evidence that investment managers at mutual funds tend to send their easier orders to brokerage houses providing research for soft dollars and their harder orders to more traditional brokerage houses that are more likely to commit their own capital to facilitate a trade. Finally, he found that investment managers tend to be less pleased with the quality of execution for certain types of soft dollar transactions. In an empirical analysis of agency costs in the mutual fund industry, Professor Nicolaj Siggelkow of the University of Pennsylvania found that mutual fund providers shift part of their research expenses on to fund shareholders by not passing those rebates (in the form of research from brokers) on to their fund shareholders.[33]

3. Payment for Order Flow

Payment for order flow is the practice whereby securities markets compete for orders placed by brokers by providing side-payments to brokers in return for brokers promising to send them investors' orders. Auction markets, such as the New York Stock Exchange (NYSE), are in large part institutionally incapable of offering side payments to brokers and are, therefore, systematically disadvantaged by such non-price competition. Professor Allen Ferrell of Harvard Law School explains that payment for order flow creates inefficient non-price competition

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32. Marshall E. Blume, Soft Dollars and the Brokerage Industry, Wharton School Working Paper, Sept. 1999.
33. Nicolaj Siggelkow, Expense Shifting: An Empirical Study of Agency Costs in the Mutual Fund Industry, Wharton Working Paper, Jan. 1999.

between securities markets.[34] He explains that the brokers' conflict of interests arises due to (1) investors' inability to monitor brokers, (2) the brokers' ability to identify investors unable to monitor them, and (3) the high opportunity cost of providing quality to investors. Because the ability to offer a large side-payment can be the direct result of profits arising from executing orders at an inferior price, brokers who route orders to the securities market offering the best price will incur the opportunity cost of these foregone side-payments. According to Professor Ferrell, the major adverse consequence of this conflict of interest is the distortion in where a given order is sent. As demonstrated below, the cost of this distortion has been shown to be borne primarily by non-monitoring small traders.

Professor Charles Lee of Cornell University analyzed the prices of all orders in 500 NYSE-listed stocks received in 1988 and 1989.[35] He found that in 1988 traders who placed orders for less than 400 shares and had their orders routed to a non-NYSE securities market received, on average, 1.07 cents less per share than similarly sized orders sent to the NYSE. For small orders routed to third market dealers, the disparity between NYSE prices and prices received was even larger, at 1.51 cents per share.[36] He found similar results in 1989. According to a NYSE Working Paper, smaller orders were increasingly sent by brokers to non-NYSE securities markets in the 1980s, often in exchange for cash payments.[37] In contrast, the relative performance of the NYSE and non-NYSE securities markets for orders larger than 400 shares was very different. The overall disparity in 1988 for orders in the 500-900 share range was -.22

34. Allen Ferrell, The Allocation of Investors' Orders and Inefficient Market Competition: A Proposal, Harvard Law School, Law and Economics Discussion Paper No. 281, Apr. 2000.

35 Charles Lee, *Market Integration and Price Execution for NYSE Listed Securities*, 48 J. FIN. 1009-1038 (1993).

36 *Id*. at 1022.

37 James Cochrane, U.S. Equity Market Competitiveness, NYSE Working Paper (1993).

cents per shares, non-NYSE securities markets actually offered slightly better prices, while in 1989 the difference was .45 cents.[38]

D. Summary

As I demonstrated above, agency problems exist in several industries throughout the economy. Table 1 shows the relevant actors (principals, agents, and the source of the side-payments) in each application of the theory.

38 Lee, *supra* note 35, at 1022. Empirical evidence from 2001 suggests that brokers may still not act in the best interests of their principals (investors). *See, e.g.,* Kee H. Chung, Bonnie F. Van Ness & Robert A. Van Ness, Are Nasdaq Stocks More Costly to Trade than NYSE Stocks? Evidence After Decimalization, Working Paper, July 24, 2001 (finding that the average quoted, effective, and realized spreads of Nasdaq-listed stocks are 18, 29, and 59 percent larger, respectively, than those of NYSE-listed stocks).

TABLE 1: EXAMPLES OF AGENCY PROBLEMS

Industry	Principal	Agent	Source of Side-Payments	Adverse Consequence of Conflict of Interest
Real Estate	Home Owner	Real Estate Agent	Home Seller	Unwillingness to leave property on the market for a sufficient period of time; willingness to accept first offer
Securities: Mutual Funds	Fund Investor	Mutual Fund	Brokerage Firm	Routing easier orders to brokerage houses providing research for soft dollars; investment managers tend to be less pleased with the quality of execution for certain types of soft dollar transactions; shifting part of their research expenses onto fund shareholders by generating soft dollars and not reducing explicit fees
Securities: Investments	Investors	Broker	Dealer	Deterioration of speed and price of trade execution for small investors incapable of monitoring their orders
Health Care	Member Hospitals	Group Purchasing Organization	Medical Suppliers	Sacrifices in product quality; higher prices paid by hospitals

In each of these examples, parties representing the principals have called for regulatory intervention to ban the side-payments or at least alter the compensation arrangement for buying agents. In the following section, I explain why eliminating the GPOs' safe harbor exemption—that is, effectively banning the side-payments made by medical suppliers to GPOs—makes sense from a budgetary perspective. Elimination of side-payments might also have competitive effects (for example, by encouraging entry of new medical suppliers), which are not investigated here.

III. THE ELIMINATION OF THE SAFE HARBOR WOULD LIKELY REDUCE THE FEDERAL GOVERNMENT'S HEALTH CARE EXPENDITURES

To estimate the budgetary impact associated with eliminating the GPOs' safe harbor exemption from the anti-kickback statute, one must articulate the nature of the contracting among member hospitals, GPOs, and medical suppliers in a but-for world. For the purpose of my calculations, I assume that hospitals would receive rebates from medical suppliers directly but-for the safe harbor exemption. In the but-for world, GPO would still negotiate contracts with

medical suppliers on behalf of member hospitals, but GPOs could not receive rebates from the medical suppliers. I assume that hospitals would pay the GPOs their operating expenses to stay in business plus a competitive return on those expenses equal to 13.5 percent.[39] I begin by conservatively assuming that (1) GPOs currently pass on 100 percent of all rebates net of operating expenses to their member hospitals; (2) GPOs do not engage in any activities that increase the price of medical supplies for their members; and (3) direct payment of rebates by medical suppliers to member hospitals would not improve reporting to Medicare. Under these assumptions, I demonstrate that federal expenditures would not be affected by the proposed rule change. When these three assumptions are relaxed, I demonstrate that the elimination of the safe harbor exemption would actually decrease the federal governments' expenditures.

A. The Elimination of the Safe Harbor Would Be Revenue Neutral Under the Most Conservative Assumptions

In a but-for world without side-payments to GPOs, the existing rebates now paid to GPOs would be offered directly to hospitals or indirectly to hospitals via the GPOs. Competition among medical suppliers would ensure that an individual medical supplier would not reduce the amount of his rebates simply because his payments were no longer routed through an intermediary. Assuming generously that (1) 100 percent of the discount offered to the GPO was passed on to the hospitals, (2) there are no distortionary effects caused by the side-payments, and (3) direct payment of rebates from medical suppliers to member hospitals would not affect the accuracy of Medicare reporting, the budgetary impact of the rule change would be zero. In this section, I explain why each of these assumptions is critical to this finding.

39. The competitive return on investment is provided by Risk Management Associates, which used to be Robert Morris and Associates.

1. Assumption 1: GPOs Pass 100 Percent of the Net Revenues from Medical Suppliers in Excess of Operating Expenses on to Member Hospitals

Medical supply expenditures in the but-for world without side-payments are equal to expenditures before rebates less rebates *paid to member hospitals*. Medical supply expenditures under the current regulatory regime are equal to expenditures before rebates less rebates *paid to GPOs*. So long as GPOs do not skim a portion of the rebate paid by medical suppliers, these two formulas will generate the same result.

2. Assumption 2: Side-Payments from Medical Suppliers to GPOs Have No Distortionary Effect

Medical supply expenditures in the but-for world without side-payments are equal to expenditures before rebates less rebates paid to member hospitals. Medical supply expenditures under the current regulatory regime are equal to expenditures before rebates less rebates paid to GPOs. Expenditures can be written as the sum across all product models of the product of the price and number of units. So long as GPOs do not currently engage in activities that increase the prices paid for medical supplies, these two formulas will again generate the same result.

3. Assumption 3: Direct Payment of Rebates by Medical Suppliers to Hospitals Would Not Improve Reporting to Medicare

Reimbursements paid to member hospitals by the federal government for medical supplies are equal to some percentage of the net expenses for medical supplies incurred by the hospitals, which are equal to the pre-rebate expenses less the rebate reported to Medicare. Under the current regime, a large portion of the medical suppliers' rebate is paid to member hospitals indirectly by GPOs in the form of net revenue distributions. I assume that the direct payment of rebates by medical suppliers to hospitals, which would occur if side-payments were eliminated, would not improve reporting to Medicare. Hence, according to the above formula, reimbursements paid to member hospitals by the federal government would not change.

B. The Elimination of the Safe Harbor Would Generate Large Savings for the Federal Government Under More Realistic Assumptions

In reality, if hospitals were compensated directly by medical suppliers, then hospitals would likely capture 100 percent of the fees net of expenses. As I demonstrate below, under the current regime, GPOs do not pass on the full rebates paid by medical suppliers to their member hospitals. Second, kick-backs likely have inflationary effects on the prices paid by hospitals for medical supplies. Third, indirect payment of rebates via GPOs has been shown to create Medicare reporting problems relative to direct payment of rebates by medical suppliers. To the extent that these distortions can be eliminated, hospitals, and in turn the federal government, would realize large savings.

1. Relaxation of Assumption 1: GPOs Pass 100 Percent of the Net Revenues from Medical Suppliers in Excess of Operating Expenses on to Member Hospitals

Two Department of Health and Human Services (HHS) Office of Inspector General (OIG) reports of the GPOs' finances reveal, however, that the portion of the fees paid by medical suppliers (net of operating expenses) that gets passed on to member hospitals is less than 80 percent. In January 2005, the OIG issued a report regarding an audit of three GPOs.[40] During the audit period, these GPOs collected $1.8 billion in administrative fees and incurred operating costs of $0.5 billion.[41] Of the remaining $1.313 billion in net revenue, these three GPOs retained $415 million for venture capital investment (32 percent of net revenue) and other business ventures and distributed $898 million to its members (68 percent of net revenue).[42] In May 2005, the OIG issued a second report regarding an audit of three additional GPOs.[43] The report found

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40. *First OIG Report*, *supra* note 12.
41. *Id.* at ii.
42. *Id.*
43. *Second OIG Report*, *supra* note 12.

that these three large GPOs collected administrative fee revenue of $513 million and incurred $238 million in operating expenses.[44] Of the remaining $275 million in net revenue, these three GPOs retained $58 million to provide reserves and venture capital for new business lines (21 percent of net revenues) and distributed $217 million to its members (79 percent of net revenues). Hence, according to these two reports, GPOs pass on between 68 and 79 percent of the revenues paid by medical suppliers (net of operating expenses) to member hospitals.

It is reasonable to assume that, in the absence of side-payments to GPOs, member hospitals would retain 100 percent of the fees net of operating expenses that would be paid currently by medical suppliers to GPOs less a competitive return on those expenses. According to the Risk Management Association, the average ratio of operating profits to operating expenses for all hospital equipment and supplies merchant wholesalers (SIC 5047) as of the end of the first quarter 2004 was 13.5 percent.[45] I here assume that GPOs would continue to incur the same level of operating expenses as that reported by the GPOs—that is, I here assume that payments by medical suppliers do not make the GPOs any more or less efficient at contracting with medical suppliers.

Seven large GPOs account for 85 percent of the medical expenditures in the United States.[46] Novation, the largest GPO, accounts for 35 percent, and it was excluded from the two HHS surveys. Hence, to the extent that aggregate fees received from medical suppliers by a GPO are highly correlated with the aggregate expenditures controlled by the GPO, one can reasonably infer that the six GPOs surveyed in the two HHS reports account for roughly half (100 percent

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44. *Id*. at ii.

45. THE RISK MANAGEMENT ASSOCIATION, ANNUAL STATEMENT STUDIES: FINANCIAL RATIO BENCHMARKS 2004-2005, at 777.

46. EUGENE SCHNELLER, THE VALUE OF GROUP PURCHASING IN THE HEALTH CARE SUPPLY CHAIN, at 5, available at http://wpcarey.asu.edu/hap/upload/group_purchasing_pdf.pdf (“Despite the fact that seven GPOs

less 15 percent less 35 percent) of the total fees net of operating expenses paid to GPOs by medical suppliers. Because the six GPOs collectively earned $1.588 billion in fees net of operating expenses (equal to $1.313 billion from the first survey plus $275 million from the second survey), my best estimate of total fees net of operating expenses paid to GPOs by medical suppliers is $3.176 billion (equal to 2 x $1.588 billion). If an additional 21 to 32 percent of those net revenues were captured fully by the member hospitals in a but-for world in which side-payments were barred, then the total savings to member hospitals would be between $666.9 million (at 21 percent) and $1.003 billion (at 32 percent) per year.[47] Finally, I subtract a competitive return on investment from those figures to allow the GPOs to continue to make positive profits after the side-payments are eliminated. This competitive return on investment would be paid by the member hospitals to the GPOs. Given an average ratio of operating profits to operating expenses of 13.5 percent, I estimate these payments to be $195.8 million per year (equal to 13.5 percent of $1.45 billion in operating expenses). Total savings to member hospitals net of the payments to GPOs ranges from $471.1 million to $808.1 million per year. Because these incremental rebates would be paid directly by medical suppliers to member hospitals, I assume that member hospitals would report 100 percent of these incremental rebates to Medicare.

2. Relaxation of Assumption 2: Side-Payments from Medical Suppliers to GPOs Have No Distortionary Effect

An alternative compensation arrangement that eliminated side-payments by medical suppliers to GPOs would induce better behavior by GPOs, and could thus lead to lower prices for

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account for 85% of the U.S. hospital market, the substantial reconfiguration of the U.S. health care industry has raised issues about the future role of GPOs.”).

medical supplies for hospitals and federal, state, and local governments. The effect of this incentive correction on the prices paid for medical supplies is difficult to estimate. According to the GAO, the seven largest GPOs, which account for 85 percent of all hospital expenditures in the United States, had a combined purchasing volume of $43.2 billion in 2002.[48] Hence, all GPOs controlled some $50.8 billion (equal to $43.2 billion divided by 0.85) in 2002. According to a survey conducted by Modern Healthcare, GPOs controlled $83 billion in supplies and services in 2004.[49]

The relevant question is: If the distortionary effects of side-payment were eliminated, by how much would total hospital expenditures on medical supplies decline? As noted in Part II, the GAO found in 2002 that, for various safety needle products, the median GPO-negotiated prices exceeded prices negotiated by a hospital buying on its own by 1 percent to 5 percent.[50] A similar study by the Lewin Group in 2003 found that in a comparison of GPO and non-GPO prices for a set of 42 top products purchased by hospitals, GPOs' base prices were lower than non-GPO prices for 32 products, the same for 7 products, and higher for just 3 products.[51] But both of these studies ask what the but-for world would look like without GPOs. The relevant inquiry here is what the but-for world would look like with GPOs that had better incentives to act on behalf of hospitals.

To the extent that GPOs *can* negotiate lower prices or save hospital costs because of economies of scale in contracting, they would still do that for hospitals, only better. Thus, if it is

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47. Note that it is not necessary to know what portion of the GPOs' revenues came from member hospitals. Presumably, member hospitals would retain 100 percent of those revenues (in excess of operating expenses) in a but-for world as well.

48. *2003 GAO GPO Report*, *supra* note 7, at 4 Table 1.

49. Cinda Becker, *Of Two Minds*, 35 MODERN HEALTHCARE, Aug. 15, 2005.

50. *2002 GAO GPO Report*, *supra* note 27, at 12.

51. The Lewin Group, Assessing the Value of Group Purchasing Organizations, prepared for Health Industry Purchasing Group Purchasing Association (HIGPA), May 2003, at 1.

7.7 percent cheaper to buy through GPOs, as suggested by the Lewin Group,[52] the problem remains that it would instead be even cheaper to buy through GPOs if they were not motivated to benefit the seller rather than buyer. Based on the magnitude of the distortion caused by agency costs in the real estate and securities industries (in the real estate example, agency costs contributed to a 3.7 percent decline the price of the home), I assume that the difference in purchase prices in the but-for world and the actual world would range from 1 to 5 percent.

Hence, I estimate that the side-payments have contributed to excessive medical expenditures by hospitals on the order of $830 million (equal to 1 percent of $83 billion in GPO-controlled expenditures) to $4.15 billion (equal to 5 percent of $83 billion in GPO-controlled expenditures). It bears emphasis that another separate harm that is not measured here is from the exclusion of cheaper products, which would result in lower prices on *different* products. Such benefits should be added to the above figures, which represented lower prices on the *same* products. The large settlements that resulted from recent antitrust litigation suggest that the size of the inflation associated with exclusionary behavior facilitated by GPOs is economically significant.

3. Relaxation of Assumption 3: Direct Payment of Rebates by Medical Suppliers to Hospitals Would Not Improve Reporting to Medicare

A January 2005 report by the OIG revealed that member hospitals did not fully account for net revenue distributions from GPOs on their Medicare cost reports. In particular, the OIG found that the 21 member hospitals surveyed offset on their Medicare cost reports $200 million of the $255 million distributed by the GPOs—that is, 21.6 percent (equal to $55 million divided by $255 million) of net revenue distributions paid *indirectly* to member hospitals by GPOs were

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52. *Id*. at 1.

not offset.[53] The OIG notes that "less than full reporting can affect certain types of Medicare payments."[54] With respect to the treatment of rebates *directly* paid by vendors to member hospitals, however, the OIG found that "GPO members generally offset rebates on their Medicare cost reports as required." The OIG found that only 1.05 percent (equal to $3 million divided by $285 million) went unreported to Medicare. In its May 2005 report, the OIG found that 4.1 percent (equal to $5 million divided by $123 million) of net revenue distributions paid *indirectly* to member hospitals by GPOs were not offset.[55] Because these rebates are currently paid with a lag by GPOs to member hospitals, and because a particular rebate cannot easily be associated with a particular medical product, it is no surprise that hospitals cannot report these rebates accurately to Medicare. Directly paying rebates to hospitals would make them easier to track and thus reduce this over-billing of Medicare.

In my but-for world, I assume that 100 percent of the rebates now paid indirectly by GPOs (in the form of distributed net revenues) to member hospitals would be accurately reported to Medicare once they are paid directly by medical suppliers. According to the January 2005 OIG Report, member hospitals received $898 million in distributed net revenue from GPOs.[56] According to the May 2005 OIG Report, member hospitals received $217 million in distributed net revenue from GPOs.[57] Because these GPOs account for roughly 50 percent of all GPO-related activity, my best estimate of total distributed net revenues from GPOs to member hospitals is $2.23 billion (equal to 2 x $1.115 billion). Under the current regime, member hospitals report between 78.4 and 95.9 percent of those rebates to Medicare. Under the proposed

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53. *First OIG Report*, *supra* note 12, at 7.
54. *Id.*
55. *Second OIG Report*, *supra* note 12, at 4.
56. *First OIG Report*, *supra* note 12, at 4.
57. *Second OIG Report, supra* note 12, at 4.

regime, I assume that member hospitals would report 100 percent of those rebates to Medicare. Hence, Medicare would learn of an additional $91.4 million (equal to 4.1 percent of $2.23 billion) to $479 million (equal to 21.5 percent of $2.23 billion) in unrecognized rebates currently received by member hospitals. Assuming the federal government would be relieved of $0.46 for every new dollar of rebates now recognized by member hospitals, I calculate the incremental federal savings associated with relaxing assumption three is between $42.1 million (equal to 46 percent of $479 million) and $220.6 million (equal to 46 percent of $479 million) per year.

C. Summary

Table 2 summarizes the budgetary effects associated with eliminating the GPOs' safe harbor exemption from the anti-kickback statute.

TABLE 2: SUMMARY OF ANNUAL BUDGETARY EFFECTS (IN MILLIONS OF DOLLARS)

	Conservative[1]	**Aggressive**[2]	**Average**
Relaxation of First Assumption (no skimming)			
Captured Net Revenues	$666.9	$1,003.8	$835.3
Less Competitive Return on GPOs' Expenses	$195.8	$195.8	$195.8
Incremental Savings to Member Hospitals	$471.1	$808.1	$639.6
Incremental Savings to Federal Government[3]	$216.71	$371.73	$294.22
Relaxation of Second Assumption (no distortion)			
Incremental Savings to Member Hospitals	$830.00	$4,150.00	$2,490.00
Incremental Savings to Federal Government[3]	$381.80	$1,909.00	$1,145.40
Relaxation of Third Assumption (accurate reporting)			
Unrecognized Rebates	$91.43	$479.45	$285.44
Incremental Savings to Federal Government[3]	$42.06	$220.55	$131.30
Total Savings to Federal Government	$640.56	$2,501.27	$1,570.92
Total Savings to Member Hospitals[4]	$1,259.04	$4,737.55	$2,998.30

Notes: (1) Under the conservative scenario, member hospitals keep an additional 21 percent of fees net of operating expenses paid by medical suppliers less a competitive return on investment earned by GPOs, realize a savings on all purchases of 1 percent, and increase the offset on their Medicare cost reports from 95.9 percent to 100 percent. (2) Under the aggressive scenario, member hospitals keep an additional 32 percent of fees net of operating expenses paid by medical suppliers less a competitive return on investment earned by GPOs, realize a savings on all purchases of 5 percent, and increase the offset on their Medicare cost reports from 78.4 percent to 100 percent. (3) Assumes that the federal government saves $0.46 for each additional dollar saved by member hospitals. (4) Equal to the sum of the private savings from relaxation of first and second assumptions less federal savings associated with relaxation of the third assumption.

As Table 2 shows, when the first assumption is relaxed, I estimate that total savings to member hospitals would be between $471.1 million and $808.1 million per year. When the second assumption is relaxed, I estimate that side-payments to GPOs have contributed to excessive

medical expenditures by member hospitals on the order of $830 million to $4.15 billion. When the two effects are combined, the total savings to member hospitals is between $1.30 billion and $4.96 billion. Assuming that the federal government saves $0.46 for each additional dollar saved by member hospitals, I estimate that the federal government would save between $598 million and $2.28 billion per year. This multiplier effect is derived from the Health Industry Purchasing Group Purchasing Association's recent estimate of the government multiplier from GPO-induced savings (equal to a $1.0 billion in savings for federal and state governments in 2004 in response to $2.18 billion in savings created by healthcare purchasing entities in 2004.)[58] The multiplier effect created by GPO-induced savings from greater operating efficiency should be no different from the multiplier effect created by GPO-induced savings from the elimination of agency costs. Finally, I calculate that the federal government would realize an additional $42 to $220 million per year from more accurate reporting of rebates now paid indirectly to member hospitals via GPOs, which brings the total federal savings to between $640 million and $2.5 billion per year.

IV. CONCLUSION

Under highly conservative assumptions, the elimination of GPOs' safe harbor exemption from the Medicare anti-kickback statute would not increase government expenditures on health care. Indeed, for at least three reasons, the rule change would likely decrease government expenditures. First, member hospitals would capture a higher percentage of the fees now paid by medical suppliers to GPOs. Under the current regime, the GPOs skim a significant percentage (between 21 and 31 percent) of those rebates from the system, which causes hospitals to pay more for their medical supplies. Second, if GPOs were paid by their principals—namely, the member hospitals—the distortion of their incentives to serve their principals would likely be

58. *National Accounts*, *supra* note 13, at 1.

corrected. To the extent that this distortion currently allows incumbent medical suppliers to charge higher prices than they would in a but-for world, the elimination of the safe harbor exemption would further decrease hospitals' expenditures, thereby creating additional savings for member hospitals and the federal government. The governmental cost savings are even greater if one also considers that these fees facilitate the anticompetitive exclusion of cheaper products and make it hard for the government to account for the true costs incurred by hospitals. Third, direct payment of rebates to member hospitals would increase the accuracy of hospitals' expense reports to Medicare, which would generate additional savings for the federal government.

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ABOUT THE AUTHOR

Hal J. Singer is President of Criterion Economics. His economic areas of expertise are antitrust, industrial organization, auction design and strategy, and damages. He has applied these skills to several industries, including health care, insurance, the Internet, telecommunications, and transportation.

He is the co-author of the book *Broadband in Europe: How Brussels Can Wire the Information Society* (Springer 2005), with Dan Maldoom, Richard Marsden, and J. Gregory Sidak. He also has written book chapters, including chapters in *Access Pricing: Theory, Practice and Empirical Evidence* (Justus Haucap and Ralf Dewenter eds., Elsevier Press 2005) and in *Handbook of Research in Trans-Atlantic Antitrust* (Philip Marsden, ed. Edward Elgar Publishing 2006).

Dr. Singer has published scholarly articles in several economics and legal journals, including the *American Economic Review Papers and Proceedings*, *Berkeley Technology Law Review*, *Canadian Journal of Law and Technology*, *Hastings Law Journal*, *Federal*

Communications Law Journal, *Journal of Business and Finance*, *Journal of Competition Law and Economics*, *Journal of Industrial Economics*, *Journal of Insurance Regulation*, *Journal of Network Industries*, *Journal of Regulatory Economics*, *Regulation*, *Telecommunications Policy Journal*, *Topics in Economics Analysis and Policy*, and *Yale Journal on Regulation*.

In regulatory proceedings, he has presented economic testimony to the Federal Communications Commission, the Federal Trade Commission, and the Antitrust Division of the Department of Justice. He has served as a testifying expert in several litigation matters. He prepared an expert report that was submitted by Allegheny Communications as part of a petition for review of an agency action in the United States Court of Appeals for the District of Columbia Circuit. He also prepared an expert report on behalf of a parcel delivery company that was submitted in the United States District Court for the Southern District of New York. He prepared an expert report on behalf of an Indian tribe that estimated the external costs imposed by a major railroad on the reservation that was submitted in the United States District Court of Montana.

He has prepared several white papers and written testimony for clients, including 1-800 CONTACTS, BellSouth, Bell Canada, Coventry First, General Motors, Harvest Partners, Internet Innovation Alliance, Mid-Atlantic Sports Network, Qwest, SBC, TELUS, Verizon, and the Walt Disney Company.

Before joining Criterion, he worked at an internationally recognized consulting firm. In addition, he has worked as an economist for the Securities and Exchange Commission and the Army Corps of Engineers, and he has taught microeconomics and international trade at the undergraduate level.

He earned M.A. and Ph.D. degrees in economics from the Johns Hopkins University and a B.S. *magna cum laude* in economics from Tulane University.