A Neglected Theory of Harm: Joint Ventures as Facilitators of Collusion Across Markets

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ABSTRACT
While there has been extensive discussion in the antitrust literature on the procompetitive and anticompetitive effects of joint ventures, there is a lack of systematic analysis on the potential of a joint venture to have collusive harm beyond its home market. This article aims to fill the gap in the literature by systematically accounting for the possible ways in which a joint venture can facilitate collusion by its members outside of the venture’s home market, namely: (i) as a punitive mechanism for the cartel; (ii) as a provider of an important input; and (iii) as a facilitator of information exchange. In addition to discussing these theories of harm, this article will attempt to offer some ways in which such anticompetitive concerns raised by joint ventures can be alleviated or addressed under US antitrust law, including ex ante behavioural remedies and ex post conduct enforcement. The proposals are intended to preserve the efficiency-enhancing potential of joint ventures by permitting them as long as their collusion facilitating potential can be reasonably contained.

KEYWORDS: Joint ventures, Cartel facilitation, Punitive Mechanism, Control of Crucial Input, Information exchange

JEL CLASSIFICATIONS: K21

1. INTRODUCTION
Joint ventures are generally viewed favourably from an antitrust perspective. Many commentators have remarked on the pro-competitive benefits of joint ventures. They allow firms with different strengths to pool together their resources to pursue a wide variety of endeavours, such as production, marketing, and R&D, without having to consummate a full merger which, for a variety of reasons, firms may be reluctant to do. Joint ventures have been characterized as ‘an important and distinct category

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for antitrust analysis because of their potential to bring about an efficiency-enhancing integration of economic activity'. For this reason, some commentators have argued that joint ventures should be presumptively legal and that an antitrust plaintiff should bear the burden of demonstrating that the anticompetitive effects of the venture outweigh its efficiencies. The enforcement record against joint ventures by and large bears out this favourable attitude towards joint ventures. Gregory Werden noted that there appeared to be no reported cases in which a joint venture not treated as a cartel or a merger was dissolved by court order following an antitrust challenge. The US Agencies have also largely taken a permissive attitude towards joint ventures.

While the efficiency gains of joint ventures are well documented, the discourse on the potential competitive harm is much less extensive and systematic. As Werden’s statement suggested, the analysis of anticompetitive harm of a joint venture tends to focus on whether it functions as a proxy cartel or de facto merger—in other words, the competitive harm inflicted by the joint venture on the market in which it operates, also known as its home market. There is a lack of systematic analysis on the potential of a joint venture to have collusive harm beyond its home market. Granted, some commentators have noted that joint ventures may increase the likelihood of collusion by facilitating the exchange of competitively sensitive information about markets ‘outside the scope of a venture’s operation’. Others have observed that joint ventures ‘will reduce the likelihood that individual participants would attempt to cheat on any collusive agreements because the ongoing relationship creates disincentives’. But one struggles to find structured, in-depth analysis of the possible theories of harm of joint ventures as facilitators of collusion outside the home market, and with limited possible remedies offered short of outright prohibition. In particular, the possibility of a joint venture operating as a punitive mechanism to discipline members of a cartel seldom features in the legal literature, even though it has received some attention in the economic literature.

This Article attempts to fill the gap in the literature by systematically accounting for the possible ways in which a joint venture can facilitate collusion by its members outside of the venture’s home market. Such theories of harm include: (i) as a punitive mechanism for a cartel, (ii) as a provider of an important input; and (iii) as a facilitator of information exchange. The three scenarios are not completely mutually exclusive. For example, an upstream input joint venture can be used as a punitive mechanism when the fellow cartel members withhold supply of the input from the defector from the cartel. Exchange of information may also take place in the context of procurement and sharing of an input. For clarity of exposition, theories of harm that are premised on sharing or leakage of information will be discussed under the rubric of information exchange even if the exchange takes place in the input

3 Werden (n 1) at 726.
5 Piraino (n 2) at 1174.
6 Stockdale (n 4) at 284.
procurement and sharing context. Provision of input encompasses scenarios in which collusion is facilitated through the pricing or the supply of the input itself without punitive withholding of supply. Punitive withholding of supply will be dealt with under the heading of punitive mechanism.

In addition to discussing the above theories of harm, this Article attempts to offer some ways in which such anticompetitive concerns raised by joint ventures can be alleviated or addressed under US antitrust law. The proposals are motivated by a desire to preserve the efficiency-enhancing potential of joint ventures by permitting them as long as their collusion facilitating potential can be reasonably contained. In this sense, the two authors share the same general positive attitude towards joint ventures as the majority of commentators. However, the authors are also mindful of Professor Herbert Hovenkamp’s admonition that if a joint venture poses a real threat to competition and cannot be restructured such that it is less harmful to competition, courts or the Agencies may have no choice but to condemn the whole venture. The adequacy of *ex ante* behavioural and structural remedies and *ex post* conduct enforcement will have to be determined on a case-by-case basis.

This Article is divided into five sections. After the introduction, Section II focuses on the use of joint ventures as a punitive mechanism for disciplining cartel members. In Section III, attention is turned to how a joint venture that supplies a crucial input to the venture partners can be used to coordinate behaviour. Section IV examines how joint ventures facilitate information exchange that may lead to anticompetitive effects across markets. Section V concludes the Article.

### II. JOINT VENTURES AS A PUNITIVE MECHANISM FOR CARTELS

One of the least discussed ways in which a joint venture may pose competitive harm is by providing a punitive mechanism for policing a cartel. There are two ways in which this can be done. Firstly, the joint venture partners can reduce the value of the joint venture to the defector through various forms of non-cooperation. Secondly, the joint venture which produces an important input can suspend supply of that input to the defector in retaliation. Under the first mechanism, the intuitive idea is that the joint venture creates value for the joint venture partners, which also operate a cartel in a different market. Should one of the cartel members deviate from the cartel, the joint venture partners will inflict punishment on the cheater by reducing the value of the joint venture. This can be achieved by investing less effort or providing less capable personnel to the joint venture, withdrawing from the joint venture altogether, or expelling the cheater from the joint venture. It is not surprising that this theory of harm is so rarely discussed. These two authors are not able to locate any US case in which this theory was invoked as a basis for challenging, let alone invalidating, a joint venture. Yet it would be a mistake to overlook this theory of harm, as

8 One of the notable exceptions is Brodley, who noted that ‘one participant may punish the other by withholding the continuing cooperation essential for joint venture success’. Joseph Brodley, ‘Joint Ventures and Antitrust Policy’ (1982) 95 Harvard Law Review 1521 at 1530–31.
the possibility is real and there need not be a link between the joint venture market and the cartel market. The joint venture could still serve as a punitive mechanism even if the two markets are completely unrelated. In addition to serving as a punitive mechanism, the joint venture can also serve as a signalling device to the potential cartel members. By making high effort in the joint venture, the firm can signal to all other cartel members that it intends to cooperate. Upon seeing this, the other firms may adjust their behaviour and assume that this spirit of cooperation will continue in the cartel context.

Cooper and Ross provide a concrete illustration of how a joint venture can be used as a punitive mechanism for a cartel in a different market. Using a game theoretic model in which the competitive market game is played first and the joint venture game is played second, they demonstrate that a joint venture will serve as an effective punitive mechanism for a cartel in a different market regardless of whether the game sequence is played only once, repeated finitely, or repeated infinitely. In the one-shot game context, the joint venture would serve as an effective punitive mechanism if the gains from cooperative efforts in the joint venture outweigh the potential gains from cheating in the cartel market. As the game sequence is repeated more, the gains from the joint venture can be smaller to sustain collusion in the repeated market game. If the game sequence is infinitely repeated, then even a small joint venture can have a large effect on market outcomes so long as the payoffs from high and low effort in the joint venture diverge sufficiently. In fact, collusion can be facilitated by a joint venture even if the joint venture game is played first. Collusion can still be facilitated by the joint venture notwithstanding that it cannot be used as a punitive mechanism. Instead, the joint venture can serve as a signalling mechanism. By cooperating in the joint venture, the parties can signal to each other their willingness to cooperate, which is expected to extend into the cartel market.

In addition, an input joint venture can be used as a punitive mechanism to facilitate collusion when a joint venture suspends, or threatens to suspend, supply of input to a defector from downstream collusion. This possibility has been recognized by the courts. In Consumers Warehouse Center, the court noted that a ‘joint venture’s ability to deprive a rival of access to a scarce input may be used by parent firms operating in a cartel-like fashion to discipline recalcitrant firms’. To the extent that this input is one which is important and difficult to source (at least in the short run) from another supplier, this could be a credible form of punishment for the cartel defector. The punishment would still be effective if alternative suppliers of the input are less cost-effective than the joint venture, which means the defector would be placed at a cost disadvantage if it had to source the input from these high-cost suppliers. The higher costs could put pressure on the defector to reverse the price cut and return the price to the collusion level. In fact, this punitive mechanism need not only apply when the collusion takes place in the downstream market. Strictly speaking, so long as the input is essential and difficult to source from elsewhere, a threat to suspend

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10 ibid.
11 Consumers Warehouse Center, Inc v Intercounty Appliance Corp, WL 922423 (EDNY) (2007).
12 ibid at 4.
supply would be a sufficiently credible punishment to sustain collusion in markets unrelated to the input market.

The extent to which a suspension of supply would be a sufficient deterrent would depend on the relative size and profitability of the two markets. If the collusion market is significantly larger and more profitable than the downstream market for which the joint venture supplies the input, it may still be worthwhile for the defector to defect from the collusion. The gains from defection outweigh the loss inflicted by the punishment. Conversely, if the market for which the joint venture supplies the input is considerably larger and more profitable than the collusion market, the punishment would be credible and defection is unlikely. Of course all of this is only possible if decisions in the joint venture are made by a majority vote (which is very likely on the board of directors), and the remaining cartel members can outvote the defector to suspend supply to it, and a cessation of supply would not result in a breach of contractual obligations by the joint venture.

In theory, every joint venture can serve as a punitive mechanism for a cartel (especially when the joint venture is not used to withhold a crucial input), no matter how unrelated the joint venture and the cartel markets are. If pushed to its logical limit, this theory of harm could be used to justify the prohibition of every joint venture involving partners that operate in multiple overlapping markets. This obviously cannot be the case. There are some features of the joint venture, and the market in which it operates, that can help identify joint ventures that are more likely to be problematic. Firstly, as was mentioned earlier, the gains from the success of the joint venture, perhaps in the form of cost savings, must be larger than the potential gains from defection from the cartel. Otherwise, a potential defector would rationally sacrifice profit from the joint venture in order to obtain the benefits from defection. Calculating the respective gains from the joint venture and potential defection could be complicated. A shorthand way of ascertaining the deterrent effect of the joint venture is to compare the size of the two markets. If the joint venture market is significantly larger than the cartel market, then the gains from the joint venture is likely to outweigh the gains from defection. In that case, the joint venture would be an effective punitive mechanism for the cartel.

Secondly, whether the parties are repeat players in the joint venture and the cartel markets would be highly relevant. If the parties are forming the joint venture only once and do not plan to stay in the cartel market for the long haul, then the gains from the joint venture will have to be larger. Otherwise, even a small gain from the joint venture would be enough to deter defection in the cartel market. In that case, a wider universe of joint ventures would need to be scrutinized.

Thirdly, the proportion of the participants in the cartel market taking part in the joint venture has a bearing on the effectiveness of the joint venture as a punitive mechanism. If important players in the cartel market are not partners of the joint

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13 It is worth noting that if the joint venture is particularly profitable, and the cartel members cannot punish the defector by expelling it from the joint venture and can only do so by denigrating the effectiveness of the joint venture, using the joint venture as a punitive mechanism can also be costly for the cartel members. In fact, the costs of using this punitive mechanism may be so high that the cartel members would rather punish the defector by engaging in price war in the cartel market.
venture, they will not be subject to the punitive mechanism.\textsuperscript{14} Their actions will not be constrained by the joint venture as a punitive mechanism and they may be more likely to defect even if they are part of the cartel. And if they are not part of the cartel, they would provide a disruptive force that may undermine the cartel. Relatedly, if the joint venture partners produce products in the cartel market that are not close substitutes, the joint venture is less likely to contribute to the stability of the cartel.\textsuperscript{15}

Fourthly, the way the joint venture agreement is structured could also affect the effectiveness of the joint venture as a punitive mechanism. It is due to the fact that there are multiple equilibria in the joint venture-cartel game that a joint venture can serve as a punitive mechanism. Therefore, ‘an incomplete JV contract may be a useful device for jointly managing incentives in the market game and a design that seems to open the possibility of multiple equilibria may not be accidental’.\textsuperscript{16} Accordingly, the Agencies should particularly look for signs that the joint venture agreement is unnecessarily vague or open-ended in its allocation of rights and responsibilities.\textsuperscript{17} The possibility of renegotiation also affects the effectiveness of the joint venture as a punitive mechanism. If the joint venture partners could renegotiate after the competitive market game, they could restructure the agreement in such a way that all parties would continue to invest high effort, thereby rendering the joint venture an ineffective punitive mechanism.\textsuperscript{18} Therefore, it would be in the parties’ interest to limit the scope for renegotiation in the joint venture agreement. The Agencies should hence be particularly watchful for joint ventures with agreements that only allow very limited renegotiation.

Lastly, it is important to examine whether the joint venture members operate in other markets in which collusion is likely. It does not matter how effective the joint venture is as a punitive mechanism if there are no markets in which the joint venture members can successfully consummate a cartel. This may be the case if all other markets in which the joint venture members operate are unconcentrated and have low barriers to entry. In this respect, the standard considerations for the likelihood of cartelization, namely whether the parties can successfully agree on the terms of coordination, whether the parties can observe and detect cheating, and whether there is an effective punitive mechanism to deter deviation, would be highly relevant. In particular, the joint venture would be particularly helpful for a market in which the first two conditions for successful cartelization, but not the third condition, are fulfilled. If for whatever reason the parties can successfully agree on terms of coordination and monitor each other’s compliance, but lack an effective punitive mechanism, the potential anticompetitive effect of the joint venture would be much greater.

Assuming that, after going through these five factors, a particular joint venture is considered likely to be used as a punitive mechanism for a cartel, what are the options for the Agencies? The first and foremost solution is outright prohibition of the joint venture. However, for a joint venture that nonetheless produces considerable efficiencies, the authority may want to stop short of outright prohibition. There

\begin{itemize}
  \item \textsuperscript{14} Cooper and Ross (n 9) at 47.
  \item ibid.
  \item ibid at 39.
  \item ibid at 48.
  \item ibid at 40.
\end{itemize}
are two possibilities: first, to fashion behavioural remedies that can limit the anticompetitive potential of the joint venture while allowing it to produce its procompetitive benefits; and second, to rely on *ex post* conduct regulation under section 1 of the Sherman Act or its equivalents. The aim of behavioural remedies would be to prevent or at least minimize the use of the joint venture as a punitive mechanism. Resort to *ex post* conduct regulation could either target the cartel itself or the enforcement action perpetrated by the cartel members.

If the concern is that the joint venture is used as a punitive mechanism to restrict or cut off supply of a crucial input to a joint venture partner, this can be addressed by introducing what is known as the Adelman rule, which essentially gives ‘each parent an individually exercisable right to increase joint venture output, provided the parent is willing to pay the full operating and investment cost of producing the additional output’.19 Given that the joint venture had been producing sufficient output to supply all joint venture partners in sufficient quantity, the investment cost is likely to be minimal. As suggested earlier, there are three ways in which cartel members can inflict losses on the defector through the joint venture: (i) to lower effort in the joint venture; (ii) to withdraw from the joint venture; or (iii) to expel the defector from the joint venture. What can the Agencies do with respect to these three strategies? The first thing to note is that a joint venture partner may decide to take any of the above three actions without any punitive or anticompetitive intent. Joint venture partners may legitimately want to lower effort in the joint venture, exit the joint venture for whatever reason, or expel a member from the joint venture. Therefore, there is a need to attempt to distinguish between legitimate and anticompetitive use of the three strategies. To do so, the Agencies may want to ascertain whether any of the three actions is preceded by a firm in the cartel market lowering prices.

If the Agencies intend to pursue the cartel itself, then any signs of a cartel falling apart and subsequent use of any of the three strategies by the joint venture members would be indicative of the existence of a cartel in the cartel market. The Agencies would do well to focus its energy on investigating that market. If the Agencies decide to pursue the three strategies themselves as anticompetitive conduct, the options become more limited. It would be difficult for the Agencies to bring a claim against a firm for lowering its effort in a joint venture. The Agencies would be seen as trying to police an internal dispute within the joint venture, which does not fall within the scope of their responsibilities. There is the added difficulty on the part of authority in ascertaining whether or not a joint venture partner has lowered its effort. Needless to say, this is a formidable task, especially if the allegation is that the firm is sending inferior personnel to the joint venture, which would require the Agencies to demonstrate that a particular officer being sent by the partner to the joint venture is somehow less capable than the current officer. This would be a very difficult evidentiary burden to meet. And obviously if the defector falls back in line after the punishment, it will have no incentive to complain. Meanwhile, it would be easier to prove if the allegation is a withdrawal of resources, the level of which is more objectively ascertainable. Overall, it is highly unlikely that the authority will be able to bring action against a firm for lowering its effort in a joint venture. Offsetting this difficulty in

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19 Brodley (n 8) at 1550.
prosecution is the fact that lowering of effort is likely to be a less effective means of punishment than the other two strategies. For a variety of reasons, a lowering of effort may not immediately translate into a loss of profit by the joint venture. For example, the reduced competence of the personnel sent by one joint venture partner may be made up by more competent personnel sent by another partner or greater diligence on the part of the joint venture personnel. Therefore, when choosing a punitive strategy, a firm has to balance evasion of prosecution against reduced effectiveness.

It would be similarly difficult for the Agencies to bring claims over a firm’s withdrawal from a joint venture. The authority will be essentially compelling the firm to continue to deal with another firm, which in this case is a competitor. After Trinko, the US courts will not impose an obligation to deal lightly. While some of the justifications that the Supreme Court gave for imposing a duty to deal in Aspen Skiing, such as prior dealing between the plaintiff and the defendant and the sacrifice of profit on the part of the defendant, are applicable here, Aspen Skiing is a Sherman Act section authority which could only be invoked if the defendant possesses monopoly power. Therefore, Aspen Skiing is likely to be of limited applicability as it is inherently rare for a monopolist to enter into a joint venture with its competitors. Meanwhile, if two or more of the joint venture partners except for the defector exit the joint venture as a punishment of the defector, the situation can be characterized as a concerted refusal to deal. However, the leading concerted refusal to deal cases would be inapposite as most of those which involve joint ventures, such as Associated Press and Northwest Wholesale Stationers, are concerned with denial of admission into or expulsion from the joint venture. There are few cases that would support compelling joint venture members to remain in a joint venture to continue to deal with undesirable venture partner.

The Agencies are likely to have the greatest success in pursuing the cartel members for expelling the defector from the joint venture and for refusing to supply the input to the defector. Expulsion from a trade association or joint venture is an established actionable conduct under antitrust law. The leading case here is Northwest Wholesale Stationers. While the Supreme Court held that unless the joint venture or

20 However, it is important to note that the a joint venture partner may have little incentive to send more competent personnel to the joint venture given that it alone bears the cost of losing the use of a competent employee but the benefits redounded by this competent employee to the joint venture is shared by all partners. Meanwhile, if the defector is minded for the joint venture to succeed, one way for the other joint venture partners to punish the defector is by sending incompetent personnel to the joint venture, hence forcing the defector to send its most competent personnel to the joint venture to make up for the deficit. This obviously imposes a cost on the defector.

22 ibid at 407–08.
24 ibid at 608, 610–11, as cited in Trinko (n 21) at 409.
25 Aspen Skiing (n 23) at 596.
cooperative ‘possesses market power or exclusive access to an element essential to effective competition’, the *per se* rule does not apply.\(^{28}\) Courts should apply the rule of reason instead. However, elsewhere in the opinion the Court also implied that an expulsion that is motivated by anticompetitive animus raises a probability of anticompetitive effect and may call for the *per se* rule.\(^{29}\) Even though clearly not every joint venture possesses market power or controls access to an essential facility, expelling a joint venture member or discontinuing supply of a crucial input for defection from a cartel should evince anticompetitive animus and call for the *per se* rule. This is further buttressed by the Supreme Court’s holding in *Superior Trial Court Lawyers*\(^{30}\) that a concerted refusal to deal whose sole purpose is to facilitate collusion is *per se* illegal.\(^{31}\) This means that both expulsion of the defector and refusal to supply input as punitive mechanisms would be subject to the *per se* rule, provided that it can be shown that the action is motivated by a desire to discipline the defector, and not due to other legitimate reasons.\(^{32}\) Therefore, the cartel members would be most susceptible to antitrust liability if they were to use expulsion from the joint venture or discontinuation of supply of input as the punitive mechanism against the defector.

If the Agencies opt for behavioural remedies after their *ex ante* review of the joint venture to minimize the use of the joint venture as a punitive mechanism, the options again would be limited by the concerns highlighted above. Difficulty in measurement and enforcement means that the Agencies would not be able to compel the joint venture partners not to lower their effort or investment in the joint venture. Similarly, the Agencies cannot require the joint venture partners to stay in the joint venture forever. To the extent that the Agencies can accurately ascertain whether an exit is preceded by one of the joint venture partners cutting prices in another market, they will be able to narrowly tailor the limitation. Of the four punitive strategies, the easiest to remedy again is the expulsion of the cartel member from the joint venture and refusal to supply. The Agencies can require the joint venture not to expel any member and not to suspend supply input to a particular joint venture member absent legitimate justifications. This will greatly hinder the cartel members’ ability to use the joint venture to punish each other.

### III. JOINT VENTURES AS A CONTROL OF CRUCIAL INPUT

Joint ventures can also facilitate collusion by controlling an important input for the production of a downstream product. There are myriad ways in which an input joint venture may facilitate collusion in the downstream market such that firm competing downstream need not collude expressly. Tacit collusion would suffice to raise prices

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28 ibid at 296.
29 ibid (‘It is therefore the action of expulsion that must be evaluated to determine whether per se treatment is appropriate. The act of expulsion from a wholesale cooperative does not necessarily imply anticompetitive animus and thereby raise a probability of anticompetitive effect.’)
31 ibid at 419, 422–23, 436.
32 For instance, the cartel members may argue that supply must be discontinued due to capacity constraints. However, if there are capacity constraints that restrict output of the joint venture, a more usual and justifiable course of action would be to reduce supply to all joint venture members proportionately, not to discontinue supply to one member completely.
to a supracompetitive level. In that case, the tools that were available for dealing with a joint venture being used as a cartel punitive mechanism, namely *ex post* conduct regulation, would be of little use, as tacit collusion is generally not considered illegal in the US and most other jurisdictions.\(^{33}\) The input joint venture need not be a production one; it could be a procurement one. The coordinative effect of an input joint venture would be the same even if the joint venture is nothing more than a joint purchase agency of inputs for the parents.

Not every commentator, however, shares the same cautious attitude towards input joint ventures as facilitator of collusion. Thomas Piraino, Jr. has argued that input joint ventures should qualify for a conclusive presumption of legality.\(^{34}\) While not going as far as Piraino, Gregory Werden has observed that input joint ventures result in relatively less loss in independent decision-making.\(^{35}\) Meanwhile, the anticompetitive potential of input joint ventures has been widely recognized by other commentators. Rossini and Vergari assert that input joint venture ‘is definitely a form of partial collusion and, as far as we know, there are not many robust results to sustain the benign stance of antimonopoly institutions unless fixed costs saving are [sic] quite high and there is a clear benefit to consumers.’\(^{36}\) Carlton and Salop argued that an input joint venture combined with exclusivity provisions could create anticompetitive results. According to them, an input joint venture can enhance its ability to facilitate price coordination by requiring its members to obtain input exclusively from the joint venture, thereby rendering it impossible for the members to seek cheaper alternatives. Cheaper input from elsewhere may undermine the collusive scheme in the downstream market.\(^{37}\) Such an exclusivity provision would also contribute to the magnitude of the competitive harm by preventing members of the joint venture from competing independently in the output market.\(^{38}\)

Three ways in which an input joint venture could facilitate collusion have been identified. Firstly, an input joint venture can function as an instrument of control by

\(^{33}\) In re High Fructose Corn Syrup, 295 F.3d 651, 654 (7th Cir 2002): ‘Section 1 of the Sherman Act forbids contracts, combinations, and conspiracies in restraint of trade. This statutory language is broad enough . . . to encompass a purely tacit agreement to fix prices, that is, an agreement made without any actual communication among the parties to the agreement. If a firm raises price in the expectation that its competitors will do likewise, and they do, the firm’s behavior can be conceptualized as the offer of a unilateral contract that the offerees accept by raising their prices. Or as the creation of a contract implied in fact. Suppose a person walks into a store and takes a newspaper that is for sale there, intending to pay for it. The circumstances would create a contract implied in fact’ even though there was no communication between the parties. . . . Nevertheless it is generally believed . . . that an express, manifested agreement, and thus an agreement involving actual, verbalized communication, must be proved in order for a price-fixing conspiracy to be actionable under the Sherman Act.’ Similarly, in the European Union, the Court of Justice stated in Wood Pulp [1993] ECR I-1307 that: ‘. . . although Article [101] of the Treaty prohibits any form of collusion which distorts competition, it does not deprive economic operators of the right to adapt themselves intelligently to the existing and anticipated conduct of their competitors . . . ’.

\(^{34}\) Piraino (n 2) at 1178.

\(^{35}\) Werden (n 1) at 725. Yet Werden also recognizes that the pricing mechanism of an input joint venture can be used to facilitate collusion. Ibid at 723–24.


\(^{38}\) Ibid.
controlling the input of the partners, especially when the input is essential and is used in fixed proportion to the output. 39 Secondly, an input joint venture can provide a forum through which the joint venture partners can reveal their own downstream production plans and ‘thus diminish the uncertainty necessary for effective competition in concentrated markets’. 40 Lastly, through pricing of the input by the joint venture, the members can indirectly coordinate their output in the downstream market. At the very least, the incentive for members of the joint venture to engage in price competition in the downstream market would be significantly curtailed. 41 This facilitative effect would be enhanced when the joint venture is combined with exclusivity provisions. Another scholar has noted that this coordinative effect can also be achieved even if the joint venture does not produce the input itself but merely serves as a joint input procurement agency for the joint venture partners.

Essentially, an input joint venture, either a production one or a joint procurement agency, may facilitate collusion in two main ways. It can achieve a collusive outcome either by raising input price to a supracompetitive level or by restricting the supply of input, and by extension the supply of downstream output, to below the competitive level. A number of commentators have suggested that the parents of an input joint venture can coordinate their pricing in the downstream market through pricing of the input by the joint venture. Using a model of two firms producing differentiated products, under which the joint venture chooses an input price subject to the approval of the two parents at the first stage of the game and the parents choose the price of their downstream products at the second stage, Chen and Ross demonstrate formally that an input joint venture in such a market will lead to higher output prices if the two firms produce close substitutes or if they face little competition from outside firms. 42 In particular, they note that when the two products are perfect substitutes, the joint venture partners will reduce their margins downstream to zero and price the input at the common monopoly level. 43 The profit lost in the downstream market will be recouped on the upstream level. They observe that if the two products have independent demands, then the input price will be set at marginal cost. For any intermediate level of substitution, the input price ‘is set so that each firm internalizes the effect its price setting has on the profit of the second firm’. 44 Chen and Ross further note that the two parents will earn higher profit with a joint venture in place than otherwise, and that there are two sources of the profit. 45 The first is the cost savings from eliminating one otherwise duplicative input production facility. And the second is ‘the effective cartelization of the downstream market as a result of the [joint venture].’ 46 By cartelization Chen and Ross probably do not mean express collusion. In light of the fact that the two firms will internalize the effect of its price

39 Brodley (n 8) at 1560.
40 ibid at 1561.
41 ibid at 1561.
43 ibid at 388.
44 ibid.
45 ibid at 392.
46 ibid.
setting on the second firm’s profit, they can achieve cartel-level profit through tacit collusion. In fact, they observe that under certain conditions, the joint venture could replicate the result of a full merger.\textsuperscript{47}

Other commentators have also recognized the anticompetitive potential of price setting in an input joint venture. The sharing of profit among the joint venture parents has been analogized as rebate payments, and ‘if rebate payments are unrelated to usage in the short term, the net effect is to price the input above its average total cost and to induce corresponding price increases in the downstream products of the joint venture’s participants’.\textsuperscript{48} It has also been noted that setting a high input price will dilute the parents’ incentive to cut prices in the downstream market. This is because when a parent cuts prices in the downstream market, it alone bears the loss of revenue while the profit from the sale of an additional unit of input is shared among all the joint venture partners.\textsuperscript{49} An input joint venture has been described as a reservoir of profit for downstream competitors.\textsuperscript{50}

In fact, the same results can be achieved even if the firms do not produce their own input and merely procure them from other suppliers. The idea again is to set the input price, here the wholesale price, high enough to induce the joint monopoly outcome in the final product market.\textsuperscript{51} Again, there is no need for a cartel to be formed at the downstream level or for output restriction to be stipulated in the joint venture agreement. Nor do wholesale contracts need to be observable to the other firms in the market for the joint buying arrangement to facilitate a downstream cartel.\textsuperscript{52} Tacit collusion without resorting to an ancillary restraint would suffice. Using a joint buying arrangement to facilitate a downstream cartel is more likely to be successful if the membership of the arrangement covers all the firms in the downstream market. In other words, the higher the market share of the firms taking part in the joint buying arrangement in the downstream market, the more successful it is likely to be. Moreover, such joint buying arrangement will, of course, be easier to defend in front of the Agencies as the parties can argue that the arrangement allows them to achieve cost savings which will be passed on to consumers. Ironically, the greater the cost savings achieved by the joint buying arrangement, the more stable the cartel. The reason being that the opportunity cost of cheating becomes larger as the cost savings increase as well. The gains from defection will have to be substantial to outweigh the opportunity cost. Apart from exclusivity provisions, the stability and the anticompetitive potential of the joint buying arrangement can be enhanced by minimum purchase clauses and rebates.\textsuperscript{53} An upstream joint venture, either input production or joint buying, together with exclusivity provisions effectively functions as a commitment device on the part of the joint venture partners that they will commit

\textsuperscript{47} ibid at 389–90.
\textsuperscript{48} Werden (n 1) at 724.
\textsuperscript{49} Brodley (n 8) at 1561.
\textsuperscript{50} Rossini and Vergari (n 36).
\textsuperscript{51} Martijn Han, ‘Vertical Relations in Cartel Theory—Managerial Incentives, Buyer Groups and Antitrust Damages’ ACLE Dissertation Series No 4 (2011) at 85.
\textsuperscript{52} ibid at 87.
\textsuperscript{53} ibid at 94–97.
to a different output level from Cournot competition and that they will not deviate from the collusive outcome in the downstream market.\textsuperscript{54}

Another way in which an input joint venture can be used to facilitate the achievement of a collusive outcome is when an incumbent firm shares a key input or facility through a joint venture, thereby deterring the new entrant from building larger capacity to enter the market on a larger scale.\textsuperscript{55} An entry on a larger scale would increase output and reduce price to a duopoly level. By sharing its input with the new entrant, the incumbent can limit the scale of entry and pull the output and price levels closer to the monopoly level. The idea is that when a new entrant, especially one that produces a close substitute for the incumbent’s product, threatens to enter the market by building new capacity, the incumbent would have the incentive to offer its input or capacity to the entrant.\textsuperscript{56} The post-entry output level would be higher than the previous monopoly level, however, because the incumbent will always have the incentive to cheat and expand output beyond the joint maximization level.\textsuperscript{57} Meanwhile, the incumbent can limit the entrant’s output by way of capacity constraint or limiting the amount of input it sells to the entrant.\textsuperscript{58} Therefore, the output would be higher, and the price would be lower, than the previous monopoly level. This may give the deceptive appearance that the joint venture is procompetitive, as it increases output and lower price. However, the correct comparator is the output and price level if the entrant enters with its own capacity, which would surely produce even higher output and lower prices. Viewed in this light, the joint venture is clearly anticompetitive. There are two main welfare effects resulting from this joint venture: firstly, cost effects, which are two-folds, including the fixed cost savings when a duplicative facility is avoided and the increase in marginal cost resulting from congestion in the existing incumbent facility; and secondly, the collusion effect, which results from reduced output and higher prices.\textsuperscript{59} Regardless of how social welfare may fare overall, consumers are clearly made worse off as a result of the price increase and output suppression.\textsuperscript{60}

One example in which something akin to the strategy outlined above was arguably attempted was the famous General Motors–Toyota joint venture in the 1980s. In that case, General Motors formed a joint venture with Toyota by utilizing its existing capacity in Fremont, California to produce Toyota designed cars to be sold by General Motors.\textsuperscript{61} The agreement provides that Toyota can produce cars for

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\textsuperscript{55} Zhiqi Chen and Thomas Ross, ‘Strategic Alliances, Shared Facilities, and Entry Deterrence’ (2000) 31(2) RAND J of Economics at 326.

\textsuperscript{56} ibid at 340.

\textsuperscript{57} ibid at 333.

\textsuperscript{58} ibid.

\textsuperscript{59} ibid at 355–56. The overall welfare effects depend on the steepness of the marginal cost curve and the demand curve. Steeper marginal cost curve and demand curve result in negative welfare effects.

\textsuperscript{60} The main positive contribution to social welfare is the reduction in fixed costs, which only redound to the producers.

\textsuperscript{61} Chrysler Corp v General Motors Corp, 589 F.Supp 1182 (DDC 1984).
General Motors using its Japanese capacity instead, thereby sparing capacity in Fremont to produce Toyota-specific vehicles to be sold in the USA. At the time Toyota had not built any manufacturing capacity in the USA; all the Toyota cars sold in the US were imported. By offering its capacity to Toyota, General Motors probably helped delay Toyota’s construction of domestic manufacturing capacity in the USA. This argument was in fact raised by Chrysler in its District Court action against the joint venture. The District Court did not end up deciding on the merits of this argument. And this claim was not discussed by any of the Commissioners in the Federal Trade Commission (FTC) order allowing the joint venture. The two main anticompetitive concerns identified by the Commission were General Motors’ reduced incentive to produce small cars outside of the joint venture and the exchange of confidential, competitively sensitive information between the two parents through the joint venture.

In fact, Chairman James Miller III justified his approval of the joint venture on the grounds of some pro-competitive benefits, one of which was that the total number of small cars sold in the US market would increase after the formation of the joint venture. This is exactly what was pointed out above as a fallacious pro-competitive effect of a joint venture under these circumstances. However, in the end, whatever delay effect of the joint venture was probably insignificant as Toyota opened its first wholly owned manufacturing facility in Kentucky in 1986. This is probably because unlike in the model outlined above, the incumbent in the General Motors-Toyota case was not a monopolist. The amount of profit General Motors can protect by deferring entry would be smaller than that in the model. Therefore, there is less profit for General Motors to share with Toyota to induce the latter to delay entry.

This theory is obviously of more limited application as it is only relevant in the context of a potential new entry into the market. Even though the model was constructed around a single incumbent firm, in theory, the model would also apply if the incumbent is a cartel with a single input production facility (perhaps in the form of a joint venture) charging prices at a monopolistic level. In that case, as opposed to the incumbent forming a joint venture with the entrant, it would be the existing joint venture admitting a new member into it. This suggests that courts compelling a joint venture to admit a new member may turn out to have anticompetitive consequences, even though, admittedly, if the entrant is a threat to the existing cartel, the joint venture would probably have the incentive to admit the new entrant to recruit it into the cartel and need not be compelled by the courts to do so. In that case, the dispute is unlikely to be an outright refusal to admit a new member but failure to come to mutually acceptable financial terms for admission. In other words, it is more likely to be constructive refusal. Again, there is no need for the parties involved to form an express cartel at the downstream level. Output is allocated and suppressed by virtue of the allocation of capacity or input.

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62 ibid at 1185. Given the existence of import quota in the US at the time, this would allow Toyota to effectively increase output in the USA.
63 ibid at 1189.
64 In re General Motors Corp, 103 FTC 374, 387 (1984).
65 ibid at 387.
The incentive for the incumbent firm or firms to cooperate with the new entrant is greater when the new entrant produces a close substitute for the incumbent’s product. When the demand of the two products is independent, there is no collusion effect as the entry would not have caused the price of the incumbent product to drop anyway.\textsuperscript{66} Therefore, one way for the Agencies to ascertain the anticompetitive potential of a joint venture between an incumbent and a new entrant is to focus on the degree of substitution between the two firms’ products. Another factor for the Agencies to consider is the fixed costs involved in constructing the requisite capacity. The higher the fixed costs, the greater the cost savings that can be achieved by the two parties, and the less likely it is that the joint venture is driven by anticompetitive price increase and output suppression. Yet another factor for the Agencies to consider is first, whether the joint venture offer originated from the incumbent or the entrant, and second, to what extent the offer is motivated by a desire to pre-empt the construction of new capacity, which in turn is dependent on the likelihood that the entrant will acquire new capacity. This would probably entail the kind of inquiry that is in dispute in the FTC monopolization case against McWane, which has been upheld by the Eleventh Circuit.\textsuperscript{67}

The Agencies have more limited options available to them in terms of remedies for the potential competitive harm identified above. Most of these mechanisms for competitive harm do not require express collusion on the part of the joint venture partners. The normal operation of the joint venture already takes care of the collusion for them. The most that is required is tacit collusion, which would be very difficult to regulate, not to mention that it is not illegal in most jurisdictions, including the USA. Therefore, the Agencies would be hard pressed to come up with behavioural remedies or resort to \textit{ex post} conduct regulation to minimize the harm. To the extent that it is true, the Agencies may be forced to consider prohibiting the joint venture outright if the competitive harm outweighs the efficiency gains of the joint venture.

There have been attempts to apply antitrust law to tackle the price coordination effect of a joint venture. In \textit{Sewell Plastics v Coca-Cola},\textsuperscript{68} a case involving bottlers of Coca-Cola setting up a joint venture to produce bottles to supply themselves, the court refused to apply the \textit{per se} rule to the joint venture’s setting of a uniform bottle price for the bottlers and charging of uniform transportation costs regardless of the distance between the bottle manufacturing plant and the bottlers.\textsuperscript{69} The plaintiff in that case attempted to characterize the price setting by the joint venture as \textit{per se} unlawful price fixing, but the court rejected this on various grounds. The most that the Agencies can do is to take into account the anticompetitive potential when evaluating the joint venture in the first place. As far as an input production joint venture facilitating a downstream cartel is concerned, the two most obvious factors to consider would be the degree of substitution between the two firms’ products and the degree of competition from other firms in the downstream market. The lower the degree of substitution between the two firms’ products, the smaller the collusion

\textsuperscript{66} ibid at 331.
\textsuperscript{67} \textit{McWane, Inc v Fed Trade Comm’n}, 783 F.3d 814 (11th Cir 2015).
\textsuperscript{69} ibid at 1191.
effect on price and output. Moreover, the greater the competition posed by the other firms in the market, the less likely it is that the two firms will be able to raise their prices to a supracompetitive level.

Arguably the real issue is not the price setting by the joint venture, but the facilitation of downstream collusion. Perhaps the court in Sewell Plastics used the price fixing issue by the joint venture as a proxy for downstream collusion. Regardless of the conduct that formed the focus of the analysis, the court focused exactly on these two factors to dismiss the price fixing claim. The court based its refusal to apply the *per se* rule on the fact that the joint venture partners do not share a direct competitive relationship (the bottlers enjoyed territorial exclusivity under their agreements with Coca-Cola) and that they were subject to competition from other brands of soft drinks.\(^70\)

In the case of an input procurement joint venture, the greater the share in the downstream market covered by the joint venture, the more likely that it will be anti-competitive. In light of the aforementioned observation about market share covered by the joint venture, the Agencies should be much more willing to approve a joint venture that only covers a small portion of the market. If the mechanism is a sharing of input or facility, the factors that need to be considered have been identified earlier.\(^71\) These would include the degree of substitution between the incumbent and the entrant’s products, the amount of fixed cost savings involved, who originates the joint venture offer, and how likely it is that the incumbent would have acquired the capacity.

**IV. JOINT VENTURES AS AN AVENUE FOR EXCHANGE OF INFORMATION**

A common issue with joint ventures is that they provide an avenue for the exchange of competitively sensitive information between the partners.\(^72\) This article focuses on situations where a joint venture may have so-called ‘spillover effects’, in that it serves as an avenue for the exchange of information concerning products *not* jointly produced as part of the joint venture.\(^73\)

\(^{70}\) ibid at 1194. The court noted that ‘defendants have no [emphasis in original] obvious incentive to raise prices or restrict output, because they would be raising the cost of their own products. That price is subject to competitive pressure from the prices charged by the distributors of other brands of soft drinks’.

\(^{71}\) Morasch, *supra* note 58 at 262.


\(^{73}\) Federal Trade Commission and US Department of Justice, *Antitrust Guidelines for Collaborations Among Competitors* (April 2000) s 4.2 at note 54; European Commission, Guidelines on the Applicability of art 101 of the Treaty on the Functioning of the European Union to Horizontal Co-operation Agreements (January 2011), ss 156, 215, 251; ABA Section of Antitrust Law (n 72) at 151 (‘While joint-venture participants continue to compete outside the joint venture, there is a risk that competitively sensitive information regarding the businesses outside the venture may be communicated to the competing participants through the venture.’), note 43 (referring to ‘potential spillover effects’ in Health Care Advisory Opinion, Erlanger Medical Centre/Memorial Hospital/Women’s East (31 May 1995) <https://www.ftc.gov/policy/advisory-opinions/advisory-opinion-smith-05-31-95> accessed 20 September 2016.
The most straightforward example is an input joint venture, which usually has ‘spillover effects’ on the output product market in which some of the joint venture partners individually sell their products and compete with one another. In the case of a joint venture for joint procurement of an input, partners would have access to information concerning their joint purchase price of the input and their respective input needs for a given period. Similarly, in the case of a joint venture for joint production of an input, partners would have access to information of their joint production cost of the input and their respective input needs. Provided that the input forms a substantial part of the cost of producing the output product and that some of the partners also compete and sell in the output market, the sharing of input information through an input joint venture may render it easy for partners to predict their respective cost and volume of output production. This is a clear example where transparency of input information and ‘commonality of costs’ resulting from an input joint venture may facilitate downstream collusion between partners which are supposed to compete in the output market.

For an input joint venture to facilitate downstream collusion in the output market, two necessary conditions must usually be present. Firstly, as mentioned above, the joint venture must concern the joint procurement or production of a major input in that the cost of such an input forms a substantial part of the cost of producing the output product incorporating that input. Secondly, not only must some of the input joint venture partners be competitors in the same output market, but they must also jointly possess downstream market power in that output market. Otherwise, their collusive efforts to raise the output price would be easily frustrated by the output expansion reactions of other significant market players which undercut the joint venture partners.

A joint venture for the joint production of a particular product (product A) may also have ‘spillover effects’ on a substitute product (product B) which the joint venture partners produce and sell individually on the same product market. On the one hand, in order for the joint venture to make informed production and market decisions as regards product A, partners may need to gather information on the price as well as the production and sales volume of product B. In the process of aggregating information of their own production and sales of product B, as well as the information of other product B producers, partners will be able to access one another’s production and sales data concerning product B. Not only will they use such information on product B to make joint venture decisions on product A, but they may use such individualized, competitively sensitive information to predict one another’s production and pricing decisions on product B. On the other hand, there might be a substantial common input (input X) to products A and B, in that the cost of X forms a substantial part of producing each of products A and B. Joint venture partners, which engage in joint production of product A, may require their mutual sharing of information concerning the price at which they individually purchase X for the production of product B, since they may use such information to bargain for

74 Supra note 73.
75 The discussion in this paragraph and the following two paragraphs is partly based on: European Commission, supra note 73 at Sections 1.2.1, 4.2, 4.3, 5.2, 5.3.
76 A phrase used in European Commission (n 73) at ss 35, 36, 158, 165, 175–180, 187, 213, 221, 222.
77 Supra note 73.
a cheaper price with suppliers of input X. At the same time, the partners may use the individualized information to collude on the purchase price of input X for their individual production of product B.\footnote{Phillip E Areeda and Herbert Hovenkamp, \textit{Antitrust Law: An Analysis of Antitrust Principles and Their Application} s 2114A (Aspen Publishers 2015).} If the partners possess joint monopsony power in the purchasing market for X, this will likely lead to a suppressed, inefficient purchase price for X upon which suppliers will restrict their output of X,\footnote{ibid.} and accordingly the partners may restrict their output of products A and B, to below competitive levels. The latter effect is, of course, subject to the condition that the partners jointly possess downstream power in the output product market in which both products A and B are sold. The result is that partners not only purchase X for the same price as part of their joint venture for product A, but also for a similar price for their individual production of product B.\footnote{In fact, the joint venture parents may take the further step of pooling their purchases of input X for both products A and B in order to obtain a larger bulk discount. In that case, the input X price for product B paid by the different parents will be necessarily aligned. However, this concern may be addressed by requiring the parents to procure input X for their independent production of product B separately from the joint venture as an antitrust remedy.} Since input X forms a substantial part of product B’s production cost, the resulting ‘commonality of costs’\footnote{\textit{Supra} note 76.} across the partners will likely facilitate their collusion on product B, despite it being outside the scope of their joint venture activities.

A possible solution to the above antitrust issues is for the antitrust Agencies to intervene before the joint venture is constituted and to approve its establishment—subject to the condition that information barriers be imposed between the partners and the joint venture itself.\footnote{ABA Section of Antitrust Law (n 72) at 151, citing at note 43: Business Review Letter to William J Bauer, 31 March 2010, <http://www.justice.gov/atr/public/busreview/257318.htm> accessed 20 September 2016; Health Care Advisory Opinion, Erlanger Medical Centre/Memorial Hospital/Women’s East (31 May 1995), <https://www.ftc.gov/policy/advisory-opinions/advisory-opinion-smith-05-31-95> accessed 20 September 2016; European Commission (n 73) s 215.} In the case of input joint ventures, separate and independent personnel (who are not staff of any of the joint venture partners) can be employed to gather information on each partner’s input needs for a given period for the purposes of aggregating purchases or planning production.\footnote{ABA Section of Antitrust Law (n 72) at 84, citing at note 15: ABA Section of Antitrust Law, Negotiating the Pitfalls of Competitor Collaborations (13 February 2012), available at: <http://www.americanbar.org/tools/digitalsasetabstract.html/content/dam/aba/multimedia/antitrust_law/20120213_at21312_mo.mp3> accessed 20 September 2016.} While an input \textit{joint procurement} venture will submit a bulk order of inputs (after aggregating the input needs of all partners) and pay the same (average) price per unit of input, each partner can be charged a different sum which is inversely proportional to the size of its order. Similarly, partners of an input \textit{joint production} venture may share the cost of joint production in a way that they each pay a sum which is inversely proportional to the size of their respective input needs. Such a pricing mechanism would prevent the collusive problems arising from ‘commonality of costs’\footnote{\textit{Supra} note 76.} due to joint procurement or production of a major input. However, this would not completely eradicate collusion
if the joint venture partners could still work out each other’s input costs based on their respective input needs and the pricing formula. This explains the need for information barriers to prevent the mutual sharing of competitively sensitive information, such as each partner’s individual input needs and its financial contribution to the bulk purchase or joint production, between the partners; only the independent personnel employed by the joint venture should have access to such information.\textsuperscript{85} Likewise, in the case of two substitute products (A and B) of which only one (product A) is produced by the joint venture, information barriers may be imposed such that joint venture partners may not share competitively sensitive information regarding product B (including their individual purchase price for a common input) with one another, or at least that the sharing of product B information be limited to the purposes of their joint production of product A (with the consequence that only independent personnel employed by the joint venture, but not the partners, may have access to the information being shared).\textsuperscript{86}

The General Motors–Toyota joint venture established in the early 1980s for the manufacturing of ‘Sprinter-derived vehicles’\textsuperscript{87} provides a good illustration of the antitrust problem and solution just discussed. The vehicles produced by the joint venture and those individually produced by General Motors and Toyota are clearly substitute products that compete in the same vehicle market. The joint venture was approved by the US FTC subject to the imposition of information barriers to ‘ensure that the joint venture were not used to facilitate the exchange of competitively sensitive information unnecessary to its operation’.\textsuperscript{88} As clearly stated at the outset of the relevant Consent Order:

> While [General Motors], Toyota and the Joint Venture are permitted to exchange information necessary to produce the Sprinter-derived vehicles, the order prohibits the transfer or communication of any information concerning current or future prices of new automobiles or component parts produced by either automaker; sales or production forecasts or plans for any product not produced by the Joint Venture; marketing plans for any product, including products produced by the Joint Venture . . .\textsuperscript{89} (Emphasis added.)

Nevertheless, such information barriers were by no means perfect. As one of the dissenting FTC Commissioners observed, General Motors and Toyota were left with considerable discretion as to the interpretation of whether certain information exchange would be ‘necessary’ for the joint venture’s production, which could be ‘a highly significant loophole’.\textsuperscript{90}

Protective measures against spillover effects in the joint procurement context were thoroughly discussed in at least two Business Review Letters issued by the US Department of Justice (the DOJ). One of these Letters concerns a scheme by which

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85 Supra notes 82 and 83.
86 ibid.
87 In re General Motors, 103 FTC 374, 1984 WL 565376 (FTC 1984), 1–2.
88 ibid at 11–12.
89 ibid at 1.
90 ibid at 20.
members of the Textile Energy Association (TEA) would procure their energy requirements on a collective basis.91 These members were manufacturers of textile products which used energy of different kinds, such as gas, electricity and compressed air. It was accepted by the DOJ that the joint procurement scheme would enable the manufacturers to economise on transaction costs and bargain for lower energy prices. Ultimate consumers of textile products would benefit from any price reduction or output expansion by the manufacturers as a result of their cost savings. Bulk purchases by the textile manufacturers might also benefit energy suppliers in terms of more predictable demand and hence cost savings from optimising production schedules. Despite these benefits, the DOJ noted the potential concern that the joint venture might ‘reduce horizontal competition amongst TEA’s members’ such that ‘output price rivalry might be reduced’. However, this concern was adequately addressed by the protective measures to be put in place by the TEA. Firstly, the TEA would appoint an independent purchasing agent to represent all participating members in their collective bargaining with energy suppliers. Secondly, the agent would collate the energy requirements of each member from time to time but would not share this information with the members, which would only be given ‘such aggregated information . . . as [was] necessary for them to determine whether they want[ed] to participate in particular joint procurements’. Thirdly, members of the TEA would not be permitted to share or discuss their requirements, expenses or other information among themselves, and would carry out their downstream operations on a separate basis. The DOJ observed that such information barriers, ‘if effective, should substantially reduce any risk that the joint purchasing of energy [would] adversely affect competition in the various textile markets’. However, perhaps realizing the limitations of such barriers, the DOJ also noted other factors which render anticompetitive effects unlikely. Apart from the fact that participation in joint procurement was voluntary and the lack of monopsony power on the part of members (with their total requirements amounting to no more than 10 per cent of any energy market), it was particularly significant—from the perspective of downstream collusion risks—that energy costs only accounted for 7 per cent of the textile manufacturers’ total turnover, which was ‘too small . . . to raise concerns about adverse effects on textile price rivalry’. It is unclear from the Letter whether (and to what extent) the TEA’s members collectively possessed downstream market power, but the said small percentage was a clear indication that energy was not a major input in textile manufacturing, thus significantly lessening the risk that the procurement scheme would facilitate collusion in the downstream textile markets.

Another joint procurement venture approved by the DOJ was the Nickel Users Purchasing Association (NUPA) established by three super alloy manufacturers.92 The purpose of the association was to secure for members ‘volume discounts for

nickel prices’ and ‘a steady supply of nickel at a relatively stable price’, which were expected to translate into ‘lower and more consistent prices’ for downstream products.93 The NUPA permitted firms involved in the manufacturing or processing of nickel to join as new members.94 It was therefore acknowledged by the NUPA that its members would be ‘a diversified group’ involving ‘a multiplicity of end uses’.95 The DOJ observed that ‘the cost of nickel [could] represent anywhere from 10% to 70% of the price of finished products’ given the miscellany.96 Hence, for those firms which employed nickel as a major input (ie with a high percentage of nickel cost), the joint procurement venture could possibly facilitate collusion in their respective downstream markets provided that the firms in question had downstream power collectively. This is unlike the textile energy procurement scheme described above where energy (of different kinds) constituted a relatively insignificant input in textile manufacturing. Despite the anticompetitive concern, the DOJ derived comfort from the NUPA’s proposed measures against spillover effects.97 Firstly, an independent administrator would be appointed to represent members of the NUPA in dealings with suppliers of nickel.98 Secondly, the administrator would keep its dealings with the nickel suppliers and the association members confidential, and would not disclose any ‘company-specific or competitively sensitive information’ concerning each member’s purchase price and requirements for nickel.99 Thirdly, members of the NUPA would only share ‘publicly available information’ amongst themselves, and their meetings would be carefully monitored.100 Fourthly, members would distribute and sell their downstream products independently of one another without the association’s involvement.101 These protective measures, which were similar to those imposed in the textile energy procurement context, were complemented by the voluntary nature of members’ participation in any joint purchase of nickel through the NUPA.102 In light of these conditions, the DOJ considered it unlikely that the NUPA would have the undesirable effect of facilitating downstream collusion.103

Information sharing through a joint venture may also have ‘spillover effects’104 on a product which is complementary to the joint venture product. Consider the joint venture between Boeing and Lockheed to provide launch services for space vehicles.105 Launch services, the joint venture services, were clearly complementary to space vehicles being launched into space, which were independently produced by


94 NUPA Request Letter, ibid, s A.
95 ibid.
96 NUPA Business Review Letter (n 92).
97 ibid.
98 ibid.
99 ibid.
100 ibid.
101 ibid.
102 ibid.
103 ibid.
104 Supra note 73.
Boeing and Lockheed outside the joint venture.\textsuperscript{106} Given the joint venture would have transactions with other space vehicle producers, there was a risk that Boeing and Lockheed would come into contact with ‘competitively sensitive non-public information concerning other Space Vehicle suppliers’, resulting in lessened competition between the joint venture partners and their competitors and, accordingly, adverse effects on the advancement of space vehicle technology.\textsuperscript{107} In light of such anticompetitive concern, as part of the FTC Consent Order, the joint venture undertook not to share such information with Boeing or Lockheed, and to share such information with staff of Boeing and Lockheed for the purposes of management of the joint venture, financial reporting, technical support etc. in limited circumstances only.\textsuperscript{108}

Indeed, even if there is no apparent substitutive or complementary relationship between the joint venture product and the independently produced product, ‘spillover effects’\textsuperscript{109} may still occur when the products in question are sold to the same consumers and/or distributed through common channels. An example is the Penn-Olin case,\textsuperscript{110} where the joint venture product was sodium chlorate and the products independently produced by Pennsalt and Olin (the joint venture partners) were ‘non-chlorate chemicals’.\textsuperscript{111} As the US Government complained:

‘Discussions which will ensue between the Pennsalt and Olin representatives in their common effort to make the sodium chlorate business a success . . . will inevitably lead to discussions of all phases of the non-chlorate business in which they are in competition, since chlorate and non-chlorate price policies, marketing areas, distribution systems and customers coincide or overlap.’\textsuperscript{112} (Emphasis added.)

The District Court for the District of Delaware was nevertheless unconvinced. In the Court’s view, there was merely an ‘opportunity . . . to make anticompetitive agreements when [representatives] meet in connection with Penn-Olin’s affairs’, which was insufficient for ‘an inference that a substantially lessening of competition between Pennsalt and Olin in non-chlorates [would] probably result’.\textsuperscript{113} The Court

\textsuperscript{106} ibid at 1–2.  
\textsuperscript{107} ibid at 3. Another possible theory of harm not related to information exchange is that by controlling the pricing of a complementary product, Boeing and Lockheed may be able to reduce their rivals’ competitiveness in the space vehicle market. To the extent that the joint venture has substantial market power in the launch service market, it can raise prices on rival space vehicle manufacturers, which reduces the competitiveness of rival space vehicles. That would allow Boeing and Lockheed to raise the price of their space vehicles. But this theory, of course, is premised on the assumption that the joint venture has substantial market power in the launch service market.  
\textsuperscript{108} ibid at 14–16.  
\textsuperscript{109} Supra note 73.  
\textsuperscript{111} ibid at 113. According to ibid, 115, at fn 3, ‘Olin and Pennsalt each produce and sell in commerce in the United States the following non-chlorates: ammonia, calcium hypochlorite, caustic soda, chlorine, hydrochloric acid, hydrofluoric acid and sulphuric acid’.  
\textsuperscript{112} ibid at 133.  
\textsuperscript{113} ibid at 133.
referred\textsuperscript{114} to the Supreme Court’s decision in \textit{Maple Flooring},\textsuperscript{115} where it was held that the discussion of ‘information and statistics without however reaching or attempting to reach any agreement or any concerted action with respect to prices or production’ was not in itself against the Sherman Act.\textsuperscript{116} The District Court found that ‘[n]o evidence existed of collusion . . . between defendants in the conduct of their non-chlorate operations\textsuperscript{117} and that neither the Sherman Act nor the Clayton Act was contravened.\textsuperscript{118} Unfortunately, the Supreme Court was not asked to rule on this point at the appellate stage.\textsuperscript{119}

The District Court’s decision illustrates the danger of simply focusing on the narrow question of whether there is sufficient evidence of collusion over non-venture products instead of the broader issue of whether market circumstances are conducive to collusion, taking into account the possible ways in which the joint venture may facilitate collusion between the partners. In this regard, joint ventures are similar to information exchanges and basing-point pricing in that they are ‘facilitating practices’ which make it easy and likely for parties to collude.\textsuperscript{120} As in the case of \textit{Penn-Olin},\textsuperscript{121} the parties’ joint venture for sodium chlorate is likely to facilitate their coordination of non-chlorate products which are sold through the same channels to the same customers.\textsuperscript{122} The Government was correct in its observation that ‘it would “defy human nature” for the sodium chlorate partners to maintain an unaltering zeal to compete in non-chlorates’ and not to discuss anything about their non-chlorate products during joint venture meetings.\textsuperscript{123} Provided that there is clear evidence of the facilitating practice itself, even if such evidence is insufficient for an inference that collusion will take or has taken place, the antitrust Agencies and courts ought to intervene by scrutinizing the risks of collusion stemming from the facilitating practice.\textsuperscript{124} In the \textit{Penn-Olin} case,
given the imminent risk of collusion resulting from the joint venture, the Court should have intervened and ordered that information barriers and monitoring mechanisms be established to prevent Pennsalt and Olin from sharing competitively sensitive information of or coordinating on non-chlorate products, in order to reduce the risk of collusion over non-venture products.125

V. CONCLUSION

The pro-competitive benefits of joint ventures have been extensively documented in the antitrust literature: joint ventures allow firms to pull together their resources, personnel and knowhow to pursue objectives that would otherwise elude them individually. However, it is important to remember that joint ventures increase the overlap between and permit more interaction among competitors than would be the case if they were to operate completely independently from each other. Therefore, in addition to well-established competitive concerns of joint ventures as proxy cartels or de facto mergers, the courts and the Agencies must be cognizant of the fact that joint ventures can create competitive harm beyond their home markets by facilitating collusion in an input market, a complementary product market, or perhaps even an unrelated market. When balancing between the competitive harm and the efficiency gains of joint ventures, regard must be given to the potential of joint ventures to facilitate collusion across markets through a variety of means, such as operating as a punitive mechanism for cartels, controlling a crucial input, and facilitating information exchange between members. Some of these anticompetitive concerns can be addressed through ex ante behavioural and structural remedies or/and ex post conduct enforcement, and this Article has explored the options available to the courts and the Agencies. However, some of them may not lend themselves to such piecemeal solutions and may call for more drastic measures, if it is shown that such anticompetitive effects of the joint venture outweigh its procompetitive benefits.

to find understanding, express or implied, from evidence that the industry’s Institute actively worked, in cooperation with various of its members, to maintain the multiple basing point delivered price system; that this pricing system is calculated to produce, and has produced, uniform prices and terms of sale throughout the country; and that all of the respondents have sold their cement substantially in accord with the pattern required by the multiple basing point system.’

125 Supra note 82; ABA Section of Antitrust Law (n 72) at 151–52, citing at note 45: PepsiCo, Inc, FTC File No 0910133 (2010).