

1 Introduction

In recent years, two types of behavior by branded gasoline marketers have come under antitrust scrutiny: zone pricing for wholesale sale of gasoline to retail stations and territorial restraints on independent distributors (jobbers) that deliver gasoline to other retail stations. These territorial restraints are called “redlining” by opponents of the practice. Commentators have suggested that zone pricing and territorial restraints lead to higher retail prices for gasoline. Regarding redlining, the Petroleum Marketers Association of America (2003) wrote that the “obvious effect of redlining is to reduce the number of competitors and, hence, the level of competition.... [R]efiners are afforded a monopoly on the brand...” The Federal Trade Commission (FTC) has investigated the effects of these practices at least twice, in the 1998-2001 Western States Gasoline Pricing investigation and in the 1998-99 investigation of the Exxon/Mobil merger. It concluded that these practices could not be

these practices? The existence of the latter can be inferred if the practices are common even in circumstances where the conditions for competitive harm are not present. Where the practice lacks a solid theory of anticompetitive effects or lacks evidence supporting the theory, the practice is unlikely to lead to competitive harm even without strong evidence supporting the procompetitive explanations for the practice.

contract with a marketer, or more likely a jobber acting as an agent for the marketer, to use the marketer's brand.³

The two basic types of distribution are direct supply and jobber supply. Company operated stations and lessee dealers are typically supplied directly by the marketer, while open dealers are typically supplied by jobbers who buy gasoline from the marketer at a terminal. Lessee dealers typically pay a delivered price, often referred to as the dealer tank wagon (DTW) price. Jobbers pay a posted price at the terminal,⁴ often referred to as the rack price, and then set delivered wholesale prices to the open dealers they supply as well as the jobbers' lessee dealers. In the United States, the breakdown of gasoline volumes sold through different station types is

an2 (3)Tj% coy

station operation, have a significant influence on a lessee dealer's station. While the marketer is not able to ensure effort levels or set the retail price for these stations, the marketer can address these problems to some degree through contractual terms, such as minimum volume requirements. One reason marketers choose to have lessee dealers rather than company operated stations is to deal with agency problems. If marketers have a difficult time monitoring the efforts of store managers, turning the store manager (who earns a salary) into a lessee dealer (who is the residual claimant on station profits) removes the monitoring problem. This is true because the lessee dealer's profits are tied to its performance in a way that marketers may not be able to replicate at the same cost with employee compensation.⁶

Another reason that marketers have lessee dealer stations is that many states have some form of divorcement law that bars marketers from owning and operating retail stations outright, or that limits the number of retail stations that the marketer may own and operate in an area. By building a large network of lessee dealers in these areas, branded marketers ensure a relatively steady retail outlet for their gasoline.⁷ Jobbers and open dealers are not as reliable as a long-run outlet for a marketer's gasoline because jobbers and open dealers can and do switch brands.⁸ The use of lessee dealers varies across geographic regions; for example, on the West Coast, DTW

⁶ For example, a marketer may own a station with automobile service bays, and repeat business may depend substantially on the quality of service work the dealer performs. The marketer could, in theory, hire a station manager whose compensation depends on some measurement of the quality of work performed, or could periodically inspect the quality of work, but either of these solutions may be suboptimal.

sales are nearly 50% of the total, while the comparable figure in the Midwest is below 10%.⁹

Because the decision to use a company-operated or lessee dealer station depends on a number of factors, including whether the station has service bays or a convenience store (see Section 3), one should not compare the fraction of company-operated stations across markets without controlling for station characteristics. Without the security of a lessee dealer

The FTC defined two types of redlining: “territorial, in which the contract between the refiner [branded marketer] and the jobber gives the refiner the right to refuse to approve the jobber’s request to supply branded gasoline to independent stations or supply its own stations in specific price zones,” and “site-specific, in which the contract includes financial disincentives for the jobber to sell in locations directly supplied by the refiner [branded marketer] and prevents a jobber from shipping low-priced gasoline to stations located in high-priced zones.”¹¹ Section 5 discusses possible reasons for these restrictions.

3 Literature on Vertical Restraints in Gasoline Marketing

In general, the empirical economics literature on vertical restraints in gasoline marketing has shown that these restraints are procompetitive. These findings are consistent with the bulk of the theoretical literature on vertical restraints, which finds several procompetitive motivations for this behavior. For example, a manufacturer may try to affect downstream markups in order to expand the manufacturer’s sales, induce resellers to maintain product quality or service levels, or align its interests with those of its resellers. To do so, the manufacturer may impose maximum markups (directly limiting resellers’ abilities to increase margin), two-part tariffs (indirectly limiting markups through a fixed fee and a lower transfer price), exclusive territories (making resellers the residual claimants on local profits), or tying (monitoring the intensity of use of one product by observing the frequency of purchase of another product).¹² In this section, we review the relevant literature on vertical restraints in the gasoline industry.

¹¹ See “Statement of Commissioners Sheila F. Anthony, Orson Swindle, and Thomas B. Leary concerning Western States Gasoline Pricing Investigation, File No. 981-0187,” available at <http://www.ftc.gov/os/2001/05/wsgpiswindle.htm> (“Western States Gasoline Statement”).

¹² Viscusi *et al.* (1992), pp. 222-24, 234-48.

A number of states have divorcement regulations that limit the ability of gasoline marketers to own and operate their stations. Vita (2000) provides the most careful and comprehensive study of the effect of these regulations, and finds that retail gasoline prices average about two to three cents per gallon higher in states with divorcement laws than states without such laws, all else equal. His findings are consistent with those of earlier studies on divorcement. Barron and Umbeck (1984), who looked at the effects of Maryland's divorcement law, found that divorcement increased average full-service prices by 6.7 cents per gallon, and increased average self-service prices by about two cents per gallon.¹³

Other papers examine the ownership structure in gasoline marketing. Shepard (1993) looks at the effect of vertical integration on retail prices and station characteristics to test the hypothesis that vertical integration ameliorates both double marginalization and moral hazard issues. She finds that prices at company-owned stations are six cents per gallon lower than prices at jobber-supplied stations for full-service regular gasoline and ten cents per gallon lower for full-service premium gasoline, but differences in prices across other organizational structures, such as lessee dealer stations, for self-service gasoline are not statistically significant. Taylor (2000) uses a principal-agent framework to examine effects of monitoring conditions on the effort to ex

full-service operations, it is more difficult for the marketer to monitor effort, thus favoring operation by a lessee (who becomes the residual claimant on profits) rather than by a salaried employee.

Two unpublished papers found that vertical integration between gasoline marketing and retailing can lead to higher prices, although problems with the papers limit their usefulness. Hastings (2002) examines the effect of ARCO's 1997 acquisition and rebranding of 260 Thrifty gasoline stations in southern California. About two-thirds of the rebranded stations became company-operated stations, while the remainder stayed dealer-operated as the result of prior contractual arrangements. Using this difference in the method of operating the stations, Hastings finds that rebranding the stations had a significant positive effect on prices, but the difference did not depend on whether ARCO operated or leased the stations. As the paper does not consider the value that consumers place on the ARCO brand,¹⁵ one cannot use the paper to determine whether consumer welfare increased or decreased as a result of the acquisition. Hastings and Gilbert (2002) conduct an empirical examination of West Coast gasoline markets, and conclude that increasing vertical integration increases wholesale gasoline prices. However, because it focuses on *wholesale* prices,

Opponents of price zones and redlining have proposed “open supply” laws that would prevent marketers from restricting where jobbers and dealers can sell and purchase gasoline.¹⁷ Comanor and Riddle (2003) discuss one such proposed law in California, and argue that open supply laws would increase average branded retail prices by about two cents per gallon and average unbranded retail prices by four to six cents per gallon. About 80% of the stations would face higher prices under an open supply law as arbitrage shifts competition from localized retail markets to the broader wholesale market. Intu

sufficient quasi-rents from the franchise operation, the threat of contract termination and the associated loss of the stream of quasi-rents may be sufficient to deter franchisees from cheating on the contract. Baskin-Robbins and McDonald's both use this technique.²² Mathewson and Winter (1985) develop a model in which the franchisor has an incentive to set maximum prices and/or minimum store hours as a way of preventing franchisees from incorrectly claiming that a low-demand state of the world occurred, then pocketing the scarcity rents. As with the Klein and Saft paper, vertical restrictions in franchise contracts serve to reduce the likelihood of franchisee free-riding. Franchisors do not need market power to find these restrictions profitable to employ. Neither of these papers directly examines vertical restrictions in gasoline marketing and retailing, but the types of restrictions – including requirements to purchase gasoline from the marketer and the use of leases for retailers – are similar to those discussed in the franchising literature.

4 Price Zones

Much of the controversy around price zones seems to stem from the fact that the differences in DTW prices that marketers charge retailers may not be explained solely by differences in delivery costs, but may be based in part on local market conditions.²³ The Exxon/Mobil Analysis to Aid Public Comment states that “These DTW prices generally are unrelated to the cost of hauling fuel from the terminal to the retail store.”²⁴ Critics of zone

²² Klein and Saft, p. 352, fn. 24. Kaufmann and Lafontaine (1994) show that McDonald's leaves expected quasi-rents to franchisees on the order of \$300,000 to \$455,000 in 1982 dollars, although those authors attribute this

pricing further argue that the existence of wholesale price differences that are not based on differences in costs implies that wholesale markets for gasoline are not competitive. The argument is that zone pricing reflects price discrimination, that price discrimination requires market power, and that therefore branded marketers that use zone pricing are exercising market power, perhaps due to coordination. Indeed, the Commission viewed the presence of price zones as an indication of market power.²⁵

Even if zone pricing reflects price discrimination and the existence of price discrimination reflects market power, it does not follow that zone pricing as a practice reduces consumer welfare. If zone pricing simply reflects the existence of market power (unilaterally or through coordination), removing zone pricing will not eradicate the market power unless zone pricing contributes to the ability to exercise market power. In addition, if zone pricing reflects price discrimination but does not otherwise make the exercise of market power more durable or effective (we discuss this possibility in the next two sections), the impact of zone pricing on consumer welfare is ambiguous. When sellers practice price discrimination, prices are lower to some consumers and higher to others than would be the case if sellers charged uniform prices. The net effect of price discrimination on consumers is therefore uncertain and overall welfare may increase to the extent output increases (Tirole (1997)). Thus, even if the existence of zone pricing reflected the existence of market power among wholesale marketers, the practice itself

²⁵ The Exxon/Mobil Analysis of Proposed Consent Order to Aid Public Comment (available at <http://www.ftc.gov/os/1999/11/exxonmobilana.pdf>) said that “The use of price zones indicates that these competitors set their prices on the basis of their competitors’ prices, rather than on the basis of their own costs. This is an earmark of oligopolistic market behavior.” See also Statement of Chairman Robert Pitofsky and Commissioners Sheila F. Anthony and Mozelle W. Thompson *in re* Exxon/Mobil (available at <http://www.ftc.gov/os/1999/11/exxonmobilpitofskystatement.pdf>): “[T]here was some evidence of coordinated action in parts of metropolitan areas (usually termed ‘price zones’)...” Commissioner Swindle, in a separate statement, argued that only in highly concentrated retail markets (which he defined as metropolitan areas) was the presence of price zones an important factor in determining whether removing a competitor would facilitate coordination. (<http://www.ftc.gov/os/1999/11/exxonmobilswindle.pdf>)

need not reduce consumer welfare. A justification to ban the practice on competition grounds must be based on a finding that zone pricing in some way contributes to the ability to exercise market power.

However, the question of whether the presence of zone pricing reflects market power is important in analyzing the nature of competition in the marketing segment of the petroleum industry, particularly in the context of a merger. If there is existing market power (particularly reflecting coordinated behavior) in a market, then a merger in that market is more likely to raise competitive concerns. As a starting point, even if zone pricing actually reflects price discrimination (that is, the differences in prices do not reflect differences in a true measure of costs, a concept that may be broader than just transport costs), this alone does not indicate the presence of market power because price discrimination is not a good indicator of the existence of substantial market power (Klein and Wiley (2003) and Baumol and Swanson (2003)).

may not be explained solely by differences in the marketer's cost of transporting gasoline to different stations are discussed further below.

In any event, retail price variation is not a sign of less-than-competitive wholesale markets. Consider what retail prices would look like if all stations were independently owned and operated and all paid a uniform wholesale price. These stations will still need to be profitable (that is, make at least zero economic profits) to stay in business over the longer run. Local supply and demand conditions will influence the prices at an individual station. The types of factors that will affect its demand include traffic flows, population density, and the amount of local retail competition, while the types of factors that will affect its supply include land cost, station format, labor costs, and taxes. Differences in local retail competition will arise even in competitive markets, because local competition will be affected by the number of stations that can operate profitably in an area as well as government zoning regulations.

For example, consider two areas with similar initial retail competition with similar prices but different land costs or real estate taxes. For a station to be profitable in the higher-cost area, it will need higher prices or volumes (or both). Over the long run, this will likely affect local competition by causing some stations in the higher-cost area to exit. An area may also be less competitive if demand increases but government zoning regulations do not allow new stations to enter. Over time, as demand at each station grows, the equilibrium price of gasoline will increase relative to what it would be in a growing area where new stations can enter easily. Where entry of new stations is constrained, the higher prices help relieve congestion at a station. When faced with higher prices where few stations are located, some consumers will buy gasoline elsewhere at lower prices, relieving the congestion.²⁸ If instead of each station being independently owned

²⁸ Congestion may occur only at peak demand hours.

and operated, marketers owned and operated all of their branded stations, the same factors would create retail price variation. Retail prices would still depend on demand and cost conditions for each station. Thus, retail price variation is to be anticipated, whether or not wholesale prices vary. The question is whether wholesale price variation that follows to some extent the retail price variation is a natural outgrowth of the nature of the market or reflects potential anticompetitive behavior at the marketer level.

4.1 Anticompetitive Theories of Price Zones

The principal antitrust concerns relating to zone pricing appear to be that the practice may allow marketers to coordinate prices more effectively and to deter entry through localized price cuts.²⁹ For example, according to Vigdor (2003, p. 12), “Zone pricing apparently facilitated oligopolistic pricing or non-cost-based pricing. Such pricing suggested to the Commission [in the context of the Exxon/Mobil investigation] that the markets for gasoline were not performing competitively.” The FTC also noted entry-detering effects of price zones in the context of the Exxon/Mobil investigation, commenting that

Market incumbents also use price zones to target entrants without having to lower price throughout a broader marketing area. With a large and dispersed network of stores, an incumbent can target an entrant by cutting price at a particular store, without cutting prices throughout a metropolitan area. By targeting price-cutting competitors, incumbents can (and have) deterred entrants from making significant investments in gasoline stations (which are specialized, sunk cost facilities) and thus from expanding to a scale at which the entrant could affect price throughout the broader metropolitan area.³⁰

²⁹ Dealers also complain that price zones (along with the contractual requirement to purchase gasoline from the marketer) are used to create an incentive for individual dealers to *reduce* retail prices if the marketer believes the price is too high. Dealers have tried to increase prices above the levels suggested by branded marketers and, to create an incentive for the dealers to reduce prices, the marketers may increase the DTW price in order to deprive the dealers of the additional margin. (Levin Hearings, p. 9) As reductions in retail price generally benefit consumers, we do not address this as a separate anticompetitive theory.

³⁰ Federal Trade Commission, “Analysis of Proposed Consent Order to Aid Public Comment in the Matter of Exxon Corporation and Mobil Corporation, File No. 991 0077, Docket No. C-3907,” available at <http://www.ftc.gov/os/1999/11/exxonmobilana.pdf>. (“Exxon/Mobil Analysis to Aid Public Comment.”)

First, coordination over prices within zones likely requires coordination over the zones themselves. If two marketers do not know whether their stations are in the same price zone, neither marketer will know how to react to price cuts by the other. Is the competitor cheating, or is it reacting to competition from a station that it considers part of its price zone but that the other marketer considers too distant to be concerned about? The evidence suggests that different marketers often use price zones that are of significantly different shapes and sizes.³¹

Second, within a marketer's price zone, there can be significant retail price variation among its own branded stations. This variation would reduce the ability of marketers to infer the DTW prices of its competitors from

this way. Because price zones are not co-extensive across firms, punishing a price-cutter in one zone may create ripple effects in prices across neighboring zones. Thus, the response to a price-cutter may result in lower prices in multiple zones that then engender further price cuts, and so on. Rather than facilitating collusion, it seems just as likely that price zones may actually facilitate price wars.

Fourth, zone pricing likely makes reaching consensus more difficult. Economic theory suggests that coordinating firms typically want to *reduce* the number of prices or other dimensions on which they must coordinate, as coordination is more likely to be successful with a smaller number of things on which to agree and fewer dimensions on which firms must monitor adherence to an agreement. In the gasoline market, coordination on a single wholesale price – the rack price – would seem to be easier than coordination on an entire array of DTW prices.

Finally, for zone pricing to make coordination more effective, the conditions that make coordination feasible must be present. In particular, entry must be difficult. However, we see sections of the country where zone pricing has been employed, yet substantial entry has occurred. For example, Costco entered into gasoline retailing in San Diego in 1998 and expanded to seven locations in 2000.³⁴ The existence of such entry suggests that efforts to make coordination more effective or likely cannot explain the existence of zone pricing in these areas. This does not prove that zone pricing cannot be used to make coordination more effective in those areas where entry is difficult and the market structure is conducive to coordination; however, it does suggest that other reasons also explain the use of zone pricing and that a general ban on this practice could be harmful. Moreover, the foregoing arguments suggest that, as a

³⁴ Dan McSwain, “Gasoline’s ‘gouge gap’ returns to North County,” *North County Times*, Dec. 16, 2001. Available

general matter, zone pricing as it is currently employed does not appear to be a particularly good mechanism to facilitate coordination.

4.1.2 Entry Deterrence Theory

A second potential anticompetitive theory is that zone pricing allows marketers to make localized entry less profitable and thus more difficult by selectively lowering prices around the new entrant's station, thereby requiring an entrant to enter on a larger scale.³⁵ This theory assumes that marketers would not respond to larger-scale entry with similar (but broader-based) price cuts. If this behavior were unilateral, it is unlikely that one would be able to distinguish it for a normal competitive response to entry. If entry took place next to a company-owned station, a localized price response would be seen as entirely normal; the analysis should be no different because of the relationship between the lessee and the marketer. To look at the problem another way, suppose marketers were required to set a uniform price (net of delivery costs) to their lessee dealers. Entry would require the marketer to choose between maintaining its pre-entry wholesale price, thereby accepting a reduction in the margin that lessee dealers near the entrant earn, or cutting wholesale prices throughout the city in response to one new station.

The more likely of these outcomes, in our view, is that the marketer would maintain its pre-entry wholesale price. In fact, for an entry deterrence theory to be viable, the marketer under uniform pricing must either maintain its price or reduce price less. Otherwise, the ability to cut prices locally would have no impact on entry. Thus, the likely effect of requiring uniform

³⁵ See Vigdor (2003): “[Z]one pricing contributed to entry barriers by increasing the minimum efficient scale necessary to enter a market....[O]il companies create price zones around a new entrant and cut prices in those zones.

pricing is that while entry might be more profitable and thus more likely to occur (although this is uncertain), the reaction to entry by incumbents will be less strong. Thus, the immediate benefits to consumers of lower market prices from entry will be reduced. This harm to consumers would then have to be compared to the potential benefit to consumers of possible increased competition more generally at some time in the future. To this extent, concerns about zone pricing as an entry deterrence mechanism are very similar to price predation concerns. As with price predation, it is very important not to confuse normal competitive responses with anticompetitive behavior.

The impact of requiring uniform prices may also have other, longer-run competitive implications. Ultimately, in a competitive market for lessee dealers, the dealer that faces new entry will be unable to earn a normal rate of return on that location and the incumbent (or the entrant) will exit or switch brands.³⁶ If one of the dealers exits, consumers are clearly worse off than they would be if the marketer were allowed to offer a localized wholesale price cut.

Furthermore, even if the marketer does lower wholesale prices to all lessee dealers following competitive entry at one location, it is likely that most of this benefit of lower wholesale prices to distant retailers would go to the lessee dealer in the form of higher profits rather than to consumers at those stations in the form of lower retail prices. Thus, the result to consumers may be little different than with zone pricing. In areas where new entry has occurred, consumers will get lower prices as would occur under zone pricing (although these prices might be higher if the uniform wholesale price decrease is smaller than would occur under zone

³⁶ This assumes that the rent the marketer charges the dealer remains constant. An alternative possibility is that the marketer could lower the rent; this is most likely to occur when the value of the land as a gas station exceeds the value for any alternative use. Even in this situation, however, the principal effect of banning price zones is to shift some economic quasi-rents from the marketer to the dealer. As we discuss in Section 4.2, this does not necessarily benefit consumers.

built by the local station owner (possibly the jobber itself) and the jobber is responsible for choosing which sites it will supply with branded gasoline. Because the marketer provides more services to the lessee dealer, the marketer will expect to be compensated for those services. One way that the marketer can be compensated is through a premium on wholesale gasoline prices. Part of the difference in wholesale prices between jobbers and lessee dealers may also be caused by discounts to jobbers. The marketer may give jobbers discounts on the wholesale price to give them an extra incentive to sell its brand of gasoline, through either new or existing stations.⁴²

We now turn to potential reasons for differential pricing across zones. First, one would expect any locational rents to accrue to the owner of the land.⁴³ For lessee dealers, the owner of the land is the marketer, but for jobber-supplied stations the owner of the land is usually the open dealer or the jobber. If the marketer cannot extract all of the locational rents from the fixed lease payment, then the marketer may charge higher DTW prices.⁴⁴ For example, marketers may face either practical or legal limits on how rapidly they can increase lease terms. This may have a substantial effect on the DTW price when the value of a site for use as a gasoline station is substantial. For example, if a city has very strict zoning regulations for gasoline stations but not other commercial real estate, the value of the gasoline station may be much higher than the underlying value of the land's next best (non-gasoline retail) alternative, such as a video rental store.

involve something between the two extremes, with a monthly rent below the full market value of the property but above zero (i.e., with the DTW price capturing the entire value of the property). To the extent that the optimal tradeoff between lease payments and DTW prices varies across an area, the marketer will find

Consumers in areas with high wholesale prices under uniform pricing clearly benefit from zone pricing; consumers in areas with low wholesale prices under uniform pricing do not necessarily benefit much from this situation, because dealers will capture most of the gain. Zone pricing also may benefit consumers indirectly in two ways. First, to the extent that zone pricing allows for a better alignment of risk between the branded marketer and the dealer, prices will be lower, all else equal. Second, to the extent that zone pricing allows branded marketers to capture the value of their investments in land and stations, marketers will make the optimal level of investments. The alternative would seem to be more widespread use of open dealers who then affiliate with branded marketers. However, dealers tend to be small businessmen, less able to withstand the ups and downs of the business than the large branded marketers, and dealers may have less expertise in choosing optimal sites.

5 Redlining

As noted in Section 2, the term “redlining” is used to refer to restrictions on jobbers’ supplying specific stations in areas with direct distribution and to restrictions on a jobber’s ability to arbitrage from low-priced zones to high-priced zones. This section explores possible anticompetitive theories and procompetitive rationales for redlining.

5.1 Anticompetitive Theories of Redlining

Opponents of redlining have suggested three possible competitive concerns with the practice. The principal concern appears to be that the practice reduces intra-brand competition in a way that engenders higher retail prices. Second, the presence of redlining has been used as an argument that a market may not be fully competitive, thereby justifying more aggressive antitrust

intervention than otherwise. Finally, redlining may be necessary to support price zones, so that if price zones raise competitive issues, redlining may as well.

Much of the criticism against redlining and, indirectly, price zones is focused on the role of intra-brand competition in maintaining competitive retail gasoline prices. For example, the Petroleum Marketers Association of America (2003) claims that, “By limiting intra-brand competition...refiners [branded marketers] are afforded a monopoly on the brand and, as a consequence, brand-loyal customers are reduced to a single purchase option....In dual distribution areas..., where intra-brand competition is allowed to flourish, consumers generally enjoy the benefit of lower prices.”⁴⁷ To the extent that redlining is analogous to other non-price vertical restraints, the empirical literature discussed in Section 3 does not support this proposition, nor does the experimental work of Deck and Wilson (2003).

More generally, exclusive territories are typically examined under the rule of reason. This is because exclusive territories, like other non-price vertical restraints

How would redlining help prevent inter-brand coordination among marketers from breaking down through intra-brand competition? Suppose marketers have found a way to coordinate prices within a price zone. Clearly, arbitrage by jobbers – transporting gasoline from low-priced zones to high-priced zones whenever the difference in the transportation cost is sufficiently small that the jobber can profitably undercut the DTW price – would undermine this coordination, unless all jobbers were part of the scheme. Furthermore, allowing jobbers to supply stations within the area of coordination, whether through conversion of existing stations from one brand to another or through construction of new, jobber-owned stations, and to supply those stations at the competitive rack price plus a cost-based delivery charge, would undermine the coordination.

Although this theory is internally consistent, there are a number of reasons to question its empirical relevance. First, the theory assumes that marketers can coordinate prices. As discussed in Section 4, coordination on different prices in different zones does not appear likely because coordination would be more difficult as the number of prices on which to coordinate increases.⁵⁰

In addition, successful coordination requires that sufficient entry by other marketers is unlikely. Entry by marketers may not be unlikely, at least in some areas. In order to defeat a coordinated price increase in scussed

ay not bneuccesad bnovo()Ts /TT0 1 T0.000 di Tc 0 T3.38965 0 T(t entrne)Tj 0.0002 Tc -0.002 T-36.1.325 -2

may not be necessary for an entrant to have a major brand. Entry could be by a hypermarket, such as Costco and Wal-Mart,⁵² by a low-price, high-volume brand, such as Sheetz or Racetrac, or by other unbranded stations.⁵³ Even though entry by hypermarkets often involves unbranded gasoline, the substantial sales that hypermarkets enjoy in some areas suggests that they can be an important competitive constraint on major brands.

The second concern about redlining is the belief that a marketer's ability to use redlining implies that the market is not competitive.⁵⁴ However, as we explained above in connection with zone pricing, the ability of a firm to engage in price discrimination across geographic areas is not a good indication of substantial market power.⁵⁵ Furthermore, it seems inappropriate to focus concern over this practice on gasoline retailing. Firms limit intra-brand competition in other markets. For example, franchisors frequently limit how close to an existing franchise a new

price zone were to increase as the result of coordination among existing marketers, expansion by marketers now serving Virginia only may now become profitable.

⁵² Hypermarkets "can typically establish a significant market presence in a relatively short time. They tend to use very competitive gasoline pricing to build traffic on their site. The increased traffic, in turn, generates incremental store sales with margins much higher than those on gasoline." J.S. Carter (ExxonMobil) statement, Levin Hearings, pp. 133-34.

⁵³ In other areas, such as California, having a major brand may be important for reasons unrelated to redlining. During supply disruptions, unbranded gasoline becomes extremely scarce as the branded marketers attempt to make sure their stations are supplied. These supply disruptions occasionally result in price inversions, where unbranded gasoline becomes more expensive than branded gasoline at the wholesale rack. These price inversions have driven most independents to affiliate with one of the marketers, or exit the market all together. Therefore, the scarce resource that the jobber needs to open a station is someone to commit to supply him gasoline during supply disruptions at prices comparable to the branded marketers. If a marketer is reluctant to commit to supply gasoline to new branded stations during what appear to be inevitable price spikes on the West Coast, the marketer may use redlining to force the jobber to find sites in areas where the marketer does not already have a network of stations. In this case it is the assured supply rather than the brand that is important, and one of the reasons that most of California's unbranded gasoline stations have exited or affiliated with branded marketers.

⁵⁴ For example, see Petroleum Marketers Association of America (2003).

⁵⁵ Klein and Wiley (2003); Baumol and Swanson (2003). Keeley and Elzinga (2003) argue that price differences across price zones are unlikely to be economic price discrimination, as price discrimination is difficult to sustain in the long run in a competitive market. Of course, whether these markets are, in fact, workably competitive is precisely the question at hand.

franchise may locate. Firms also frequently employ exclusive territories for sales representatives.⁵⁶

The third concern is that, by preventing arbitrage, redlining helps to maintain price zones in two ways. First, redlining could prevent jobbers who pay a lower rack price from supplying lessee dealers that the marketer supplies at higher DTW prices. Second, redlining could prevent jobbers from opening new branded stations in what are currently high price zones for that brand. However, redlining does not appear to be necessary to prevent lessee dealers from engaging in arbitrage because a marketer, through contract terms with its lessees, can require that its lessee dealers purchase gasoline from the marketer alone. In addition, even if redlining prevents jobbers from undermining the local DTW price for a particular brand, redlining does not prevent unbranded entry or entry of other brands.⁵⁷ In theory, marketers could collude to impose redlining restrictions in order to deter entry, but the Commission has not alleged that redlining is the result of coordinated behavior among marketers.

5.2 Business Justifications for Redlining

Marketers can be expected to choose different methods of distribution according to specific market needs. Where one brand has a limited presence, it is often efficient for the marketer to use jobber distribution to economize on distribution costs, as the jobber can supply stations of multiple brands. In addition, jobbers may have better information than the marketer about new opportunities for station locations. Where a brand has a greater presence, direct

⁵⁶ Mathewson and Winter (1994) find territorial restrictions in half of their sample of 24 franchise contracts, including fast food (Arby's, Chicken Delight, Hardee's, Long John Silver, and Swiss Chalet), computers (Computerland, Entre Computer, Micro Age, Software Centre), video rental (National Video), printing (PIP), and snowmobile sales (Bombardier). Jordan and Jaffee (1987) discuss exclusive territories in beer distribution.

⁵⁷ Although there are regions of the country, such as California, where entry is difficult because of difficulties in obtaining bulk gasoline supplies, and there are local areas in which government zoning regulations make entry difficult, these problems are unrelated to redlining.

distribution, whether through company-owned stations or lessee dealer stations, may be a more efficient arrangement. The marketer can eliminate the successive markups that a separate distribution system entails, along with any agency problems that arise with jobbers. Furthermore, different marketers have different

to a lesser degree, with open dealers, as their relationship to marketers involves a more arm's-length relationship.

Consumers benefit from these business motivations for redlining, albeit indirectly. First, any inefficiencies in dual distribution will lead to higher costs of supplying gasoline and, therefore, to higher prices. Second, allowing branded marketers to capture the return from their investments in land and stations results in the optimal level of investment and, therefore, greater retail competition than would otherwise exist.⁵⁹

6 Conclusion

Concerns over price zones and redlining continue to draw public attention. However, these concerns are based on the assumption that the rack prices and non-price terms between marketers and dealers that exist today would continue in a world without price zones and/or redlining. To the extent that the DTW price reflects the provision of services to lessee dealers that jobbers provide to open dealers, or, to put it another way, that the rack price allows jobbers an additional margin for services they provide to open dealers, one would expect that banning these restraints would increase rack prices relative to DTW prices. Economic theory, empirical research, and experimental rese

control [the ability to raise the price of specified inputs] ‘market power’ is not merely legally incorrect, it is also extremely dangerous as a policy matter. It threatens to turn antitrust into an engine for the resolution of all kinds of disputes over long-term contracts, or worse yet, to use antitrust as a device for protecting people from their own careless bargaining.” (p. 306)

As this paper has shown, both price zones and redlining have business explanations other than anticompetitive motivations. Price zones allow branded marketers who own gasoline stations to capture the returns from good locations – returns that would otherwise be captured by station lessees. Price zones may permit an efficient allocation of risk between the marketer and lessee dealer, and help align the incentives of the marketer and its lessee dealers. Redlining, by helping to maintain zone pricing, facilitates the procompetitive effects of zones. Redlining may also help maintain a more efficient delivery system by preventing jobbers from cherry-picking the most profitable stations to supply, thereby increasing economies of scale or scope in distribution and avoiding duplicative investments in distribution assets. These results are consistent with both economic theory and empirical work on vertical restraints in the gasoline industry.

One likely consequence of prohibiting contractual provisions such as zone pricing and redlining is that marketers will use other, less-efficient means of achieving the same goals. For example, marketers can increase the fraction of company-owned stations in areas without divorcement laws; if this were more efficient than using lessee dealers, presumably the marketers would have done so already. This suggests that regulators need to be careful to consider how firms will react to restrictions on their ability to operate their businesses.

As we noted in the introduction to this paper, determining whether a practice is anticompetitive requires a sound economic theory of harm and evidence consistent with the

theory. Conversely, one can infer the likely existence of procompetitive effects from conduct that occurs where anticompetitive effects appear unlikely. The existence of zone pricing and redlining in areas of the country where entry has occurred into gasoline marketing suggests that one or more of the business justifications, rather than the anticompetitive explanations, is likely to explain these practices in such areas. Thus, in parts of the country where entry may be impeded for one reason or another, where we cannot exclude the anticompetitive theories *a priori*, we cannot exclude the procompetitive justifications, either. As a consequence, antitrust policy should not condemn zone pricing or redlining across the board, nor conclude that the presence of the practices indicates the existence of market power, but should instead require market-specific evidence that the practices have resulted in higher retail gasoline prices.

References

Barron, John M. and John R. Umbeck, 1984. "The Effects of Different Contractual Arrangements: The Case of Retail Gasoline Markets," *Journal of Law and Economics*, vol. 27, pp. 313-28.

10, pp. 157-68.

Klein, Benjamin and Lester F. Saft, 1985. "The Law and Economics of Franchise Tying Contracts," *Journal of Law and Economics*, vol. 28, pp. 345-61.

Klein, Benjamin and John Shepard Wiley, Jr., 2003. "Competitive Price Discrimination as an Antitrust Justification for Intellectual Property Refusals to Deal," *Antitrust Law Journal*, vol. 70, pp. 599-642.

Kleit, Andrew N., 2003. "The Economics of Gasoline Retailing: Petroleum Distribution and Retailing Issues in the U.S.," American Petroleum Institute, December.

Kreps, David and Robert Wilson, 1982. "Reputation and Imperfect Information," *Journal of Economic Theory*, vol. 27, pp. 253-79.

Leffler, Keith and Barry Pulliam, 1999. "Preliminary Report to the Attorney General Regarding California Gasoline Prices," manuscript.

Marvel, Howard P., 2003. "On the Economics of Branded Open Supply," *International Journal of the Economics of Business*, vol. 10, pp. 213-23.

Maryland Energy Administration, 2001. "Task Force Report on Gasoline Zone Pricing," Sept. 14, 2001. Available from the Maryland Energy Administration.

Mathewson, G. Frank and Ralph A. Winter, 1985. "The Economics of Franchise Contracts," *Journal of Law and Economics*, vol. 28, pp. 503-26.

Mathewson, Frank and Ralph Winter, 1994. "Territorial Restrictions in Franchise Contracts," *Economic Inquiry*, vol. 32, pp. 181-92.

O'Brien, Daniel P. and Greg Shaffer, 1994. "The Welfare Effects of Forbidding Discriminatory Discounts: A Secondary Line Analysis of Robinson-Patman," *Journal of Law, Economics, and Organization*, vol. 10, pp. 296-318.

Petroleum Marketers Association of America, 2003. "PMAA White Paper on Refiner Redlining in Historic Independent Marketer Territories."

Rey, Patrick and Joseph Stiglitz, 1995. "The Role of Exclusive Territories in Producers' Competition," *RAND Journal of Economics*, vol. 26, pp. 431-51.

Shepard, Andrea, 1993. "Contractual Form, Retail Price, and Asset Characteristics in Gasoline Retailing," *RAND Journal of Economics*, vol. 24, pp. 58-77.

Taylor, Beck A., 2000. "Retail Characteristics and Ownership Structure," *Small Business Economics*, vol. 12, pp. 157-64.

Taylor, Christopher T. and Jeffrey H. Fischer, 2003. "A Review of West Coast Gasoline Pricing and the Impact of Regulations," *International Journal of the Economics of Business*, vol. 10, pp. 225-43.

Tirole, Jean, 1997. *The Theory of Industrial Organization*, Ninth printing. The MIT Press.

Vigdor, William R., 2003. "Antitrust Treatment of Zone Pricing and Redlining," ABA Section of Law Course Materials, April 2, 2003. Available upon request from Vinson & Elkins, LLP.

Viscusi, W. Kip, John M. Vernon, and Joseph E. Harrington, Jr., 1992. *Economics of Regulation and Antitrust*. D.C. Heath and Co.

Vita, Michael G., 2000. "Regulatory Restrictions on Vertical Integration and Control: The Competitive Impact of Gasoline Divorcement Policies," *Journal of Regulatory Economics*, vol. 18, pp. 217-33.

Table 1a: Arlington Co., Virginia Texaco prices for two weeks in July 2001		
	Week of 7/22/01	Week of 7/29/01
Clarendon Gas & Co./Texaco	\$1.53	\$1.52
Columbia Pike Texaco	\$1.58	\$1.60
Shirlington Texaco	\$1.63	\$1.59
Texaco D&V Auto Service Center	\$1.55	\$1.53
Texaco Food Mart	\$1.50	\$1.46

Source: OPIS. Prices are for reoPIS.q6.46