

**THE COMPETITIVENESS OF THE GEORGIA DEREGULATED GAS
MARKET**

by

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EXECUTIVE SUMMARY

Retail gas markets in over twenty states have allowed marketers to compete with local gas utilities in selling essentially city-gate gas services to all consumers, including residential and commercial customers. In all of these cases, the local utility assumes the responsibility of provider of last resort (POLR). If a customer wants to stay with the local utility supplier, she can do so. For most gas choice programs, the vast majority of small customers have decided to not leave the local utility for a third-party provider. As a provider of last resort, the utility's price remains regulated, while marketers' prices are unregulated. The utility's price acts as a cap on prices that the marketers are able to charge. In the Georgia deregulated gas market, the local utility, Atlantic Gas Light (AGL), does not assume the role of a POLR. The market, rather than regulators, determines the price of gas for all retail customers (except for the distribution component of service). This feature of the Georgia market makes it particularly imperative that prices reflect competitive conditions with minimal market power being exercised by marketers.

The Natural Gas Competition and Regulation Act ("Act") specifies when a "competitive market" exists. In accordance with the Act, the AGL market was sufficiently competitive in April 1999 when the Georgia Public Service Commission ("Commission") issued a "last chance" notice. Whether today the Georgia market is sufficiently competitive underlies the purpose for this study.

The main objective of this study is to assess the degree of competition in the Georgia deregulated gas market. In most markets, more competition typically translates into benefits for consumers. Competitive forces help to

constrain prices, promote the availability of additional products and services, and improve the quality of service. Competitive markets have certain features that make them attractive from the perspective of consumers. Even when markets deviate from the textbook version of perfect competition, the standard policy response is to leave them alone. The prevailing perception is that most imperfect markets left alone usually function better than if the government tries to intervene. Such markets are sometimes described as “workably competitive.”

The crucial question underlying this study is, to what extent can the high concentration in the Georgia deregulated gas market be interpreted as lack of sufficient competition in that market? By any standard the Georgia market is highly concentrated, with four marketers currently holding about 93 percent of the market. Concentration in the market has slightly increased over the past two years. Over time, the number of fringe marketers has declined; in the meantime, the largest marketers have held on, however, to a stable share of the market.

Economic theory, supported by empirical evidence and antitrust - enforcement principles, suggests that market concentration is only one piece of the puzzle in determining whether a firm or group of firms has sufficient market power to partake in anti-competitive abuses. A careful investigation of market power entails several steps: (1) defining the relevant market, (2) measuring market concentration, (3) determining conditions of entry, (4) examining collusion opportunities for firms in the designated market, and (5) investigating other relevant market characteristics. This study takes such an approach in assessing the competitiveness of the Georgia deregulated gas market.

The findings for this study paint a picture of the Georgia market as a highly

concentrated market where conditions are conducive to the exercise of market power. Exactly how much harm market power, which in most likelihood exists in the Georgia market, has done to gas consumers requires additional information than what is presented here. Evidence showing a high price-cost margin and high prices in the Georgia market relative to surrounding areas over the last several months suggests the possibility of a market-power problem. This evidence should not be interpreted to infer that the Georgia market has failed and, consequently, requires major overhaul by the Commission or the Georgia Legislature. Instead, more than anything the evidence supports incremental actions that would improve the performance of the Georgia market in terms of making it more competitive. The Act was premised on a deregulated gas market that would be sufficiently competitive to benefit consumers, relative to continuation of closed regulated market.

The Georgia market can be best characterized as an oligopoly. The fact that four marketers serve over 90 percent of the market, and sell to a large number of consumers, strongly suggests a market where each marketer recognizes its interdependency with other marketers. Specifically, a single marketer's price or output strategy depends on the strategies adopted by other marketers. In most oligopoly settings, firms are able to sustain prices above marginal cost or perfectly competitive levels without taking part in overt collusive activities. If, in fact, marketers in the Georgia market are colluding, it is likely that they are doing it tacitly. Tacit collusion reflects strategic behavior where firms coordinate their actions by acting together to increase their collective profits. An example of tacit collusion in the Georgia market is when a marketer would be deterred from initiating a price war by a serious threat of

retaliation from other marketers. Tacit collusion allows firms to exercise market power without explicit communications.

In studying the Georgia market as an oligopoly, it should be recognized that economic theory provides no precise answers on how this market structure relates to conduct and performance. Oligopoly theory does not offer any definite price predictions analogous to the predictions of perfectly competitive and monopoly markets. Most theories applied to oligopoly markets predict that firms have market power, with price lying somewhere between marginal cost and the price of a pure monopolist. Oligopoly models predict varying prices because of the different assumptions on such things as how firms behave, the number of firms in the market, the characteristics of a market and the products sold, the degree of interaction among firms, and the information firms have on their rivals. Selecting the best model for a particular market inevitably requires judgment on the part of the analyst, an examination of the assumptions underlying the different models, and a comparison of the predicted outcomes with actual market outcomes.

The model that may best describe the Georgia market (which, in economics jargon, can be called a dynamic version of the Bertrand model) predicts price competition among marketers but softened by the specific characteristics of the market. These characteristics for the Georgia market include entry barriers, repeated interaction among marketers, passive consumers in terms of responding to prices, and the homogeneous nature of marketers' products and costs. Entry barriers are a major source of market power. Prospective marketers of the Georgia market would have to expend money in marketing, sales and advertising. Customer acquisition cost can be

quite high for new entrants. There are also traits of economies of scale in entry where a marketer's average cost of attracting and acquiring customers (especially residential customers) declines as more customers are signed up.

In the Georgia market, marketers interact on a day-to-day basis, which has the effect of increasing the prospects for tacit collusion: marketers would have opportunities to retaliate against a marketer who decides to compete aggressively. Thus, mutual behavior by long-term rivals may weaken price competition.

Passive consumers can also induce market power by lessening the pressure for price competition. A low price elasticity of demand along with the reluctance of consumers to switch marketers means firms can charge higher prices with little fear of losing sales. The Georgia market may be characterized by a low short-run price elasticity of demand for natural gas, plus apathy by customers in searching out the "best deals." Under these conditions, marketers can be less aggressive in their pricing strategies. Search and switching costs can have similar effects on increasing market power: anything making it more difficult or costly for consumers to switch marketers under an otherwise attractive situation would cause marketers to be less willing to lower price and engage in aggressive competitive pricing.

Finally, homogeneity of products and costs allows for easier monitoring of marketers. Thus, marketers may be better able to detect cheating by individual marketers of a collusive arrangement.

The report makes several points, which are summarized below:

- 1. The Georgia deregulated gas market is currently highly concentrated**

and is expected to remain so for the foreseeable future. Highly concentrated markets certainly raise concerns about market power, but such markets are not necessarily plagued by serious market-power problems. Other factors should be investigated before determining whether market power poses a large enough problem to warrant corrective action. In most markets, firms have some market power; the relevant question is whether the market power is being exercised excessively by specific abusive actions, such as collusion.

2. The exercise of market power has largely a distributional effect where firms benefit at the expense of consumers. The adverse effects of market power include firms pricing above marginal cost, consumers paying too high prices and consuming too little, and aggregate economic well-being declining.

3. Perfectly competitive markets represent the model or yardstick for comparing conduct and performance in various markets. Deviations from perfect competition should not necessarily be construed as an indicator of market failure demanding corrective action. Most markets, even though imperfect and generally described as workably competitive, would perform less well with external intervention, especially with regard to pricing.

4. The Georgia market, while having features that resemble a workably competitive market, can best be described as an oligopoly market. Entry

barriers do not seem onerous, but they may be severe enough to prevent many more marketers from entering the Georgia market in the near future. No single marketer seems to have an unfair advantage over other marketers – even although AGL’s affiliate Georgia Natural has the largest market, no evidence exists that this is the result of preferential treatment from AGL. Departures of the Georgia market from conditions of perfect competition arise from the fact that the market is highly concentrated, namely, an oligopoly, with passive consumers and specific supply-side characteristics each conducive to collusive behavior. We are referring here only to tacit collusion, not overt collusion where firms would meet in a “backroom” to fix prices.

5. Although the price of natural gas paid for by marketers is set in a competitive market of national scope, the prices charged by marketers to consumers in the Georgia retail market depend upon the competitiveness of that market. To the extent the local retail market departs from competitive conditions, marketers have the ability to exercise market power by charging excessive prices; this would have the effect of marketers extracting more of the economic gains from gas transactions that would otherwise go to consumers.

6. Oligopoly theory (which, as stated earlier, is applicable to the Georgia market) provides no precise prediction of market conduct and performance. Analysis of oligopoly markets, such as the Georgia market, must speculate on how firms behave in setting prices and conducting

their other activities that directly affect consumers. Some oligopoly markets perform with minimal market-power problems while others have more serious problems, largely depending upon the market characteristics and the ability of firms to collude. The Georgia market has features that may be conducive to behavior by marketers that lie contrary to consumer interests and the objectives of the Natural Gas Competition and Regulation Act. Although no specific conduct was identified, marketers in the Georgia market may have the ability to engage in market-power abuses.

7. Since the evidence from this report is inconclusive, it is difficult to recommend any policy action by the Legislature or the Commission.

Probably more than anything, the findings lend support to “staying the course,” with the recognition that the Georgia market will, at least for the foreseeable future, be plagued with the problems inherent in highly concentrated, oligopoly markets. No definitive conclusion is reached here on whether consumers would be better or worse off by continuing with deregulation with its limitations compared with returning to a regulatory regime with its own shortcomings. The preferred policy action may be to continue with deregulation but supplement it with reforms that would make the Georgia market operate more competitively. As examined in this report, the entry of additional marketers and more active consumer behavior in responding to prices would go far in increasing competition in the Georgia market. To the extent the Legislature and the Commission can affect these components of the Georgia market in a

manner that would promote competition, and it is not clear what influence they legally and practically have, it is advised that they pursue this course of action.

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LAYING OUT THE PROBLEM

The Georgia Legislature passed the Natural Gas Competition and Regulation Act ("Act") in 1997 allowing gas distributors in the state to relinquish their gas merchant function under specified conditions. Atlanta Gas Light (AGL), the state's largest gas distributor, elected to change its status to a "pipes" business only. In November 1998, AGL initiated a program to give all firm customers, including residential and small commercial, the right to choose their gas supplier. A unique feature of the program is that the Act specifies the conditions for a "competitive market;" when these conditions exist, all remaining customers of AGL who did not choose a marketer to that point in time were given one hundred days to select one. If these customers failed to do so, they would be randomly assigned to one by the Georgia Public Service Commission ("Commission"). The "last chance" notice was issued during April 1999. Roughly 280,000 customers who had not chosen a marketer by August 11, 1999 were randomly assigned to marketers in proportion to the share of customers each marketer had captured as of that date. In October 1999, AGL exited the merchant function.

The liberalization of the Georgia gas market was directed at improving the economic performance of that market. As articulated by the Commission in its *2000 Annual Report*, the success of the opening of the natural gas market to competition "ultimately will be judged on whether consumers benefit, economic efficiency is improved, fair competition is promoted, and safety and reliability are maintained or enhanced." (p.14)

The Georgia deregulated gas market has several features tied to the topic of this report, namely, the degree of competition in that market and, particularly, the effect on residential customers. First, gas services are unbundled, with AGL providing distribution service (including storage and metering services) at a regulated price and certified marketers offering other gas services at an unregulated price. The presumption is that the market can introduce adequate competitive pressures against excessive prices and other market-power abuses. Second, unregulated marketers serve all retail customers; in other gas retail choice programs around the country, customers not choosing a marketer remain with the local utility; the utility acts as the provider of last resort (POLR). Third, the Act requires an applicant to demonstrate significant financial and technical capacity before being allowed to enter the Georgia deregulated gas market. Fourth, the largest marketer in that market is the affiliate of AGL, Georgia Natural, and four marketers combined sell over 90 percent of the gas. Fifth, the short-term price elasticity of demand for the vast majority of gas customers is likely quite low; when combined with consumers' hesitancy to switch marketers, market power becomes more likely. Consumers are unable to respond quickly to higher natural gas prices because of sunk investments in appliances and equipment that use natural gas. Most customers, especially small customers, also do not have the metering capabilities to provide them with accurate price information and the control technology to respond to real-time information. Sixth, marketers are required to file their prices on a monthly basis for public disclosure.

Much has been written about the AGL program and its uniqueness in

mandating that all retail customers receive their gas services, other than metering and local distribution, from a marketer who is not subject to price regulation. In contrast to other gas retail competition regimes throughout the country, which can be characterized as hybrid models with consumers having the choice between regulated or deregulated service, customers in the Georgia deregulated market do not have the protection of a provider of last resort, who would be obligated to provide standard offer service at a regulated price. In other words, unlike retail-competition regimes in other states, the AGL program provides no regulated price ceiling that marketers and other third-party energy service providers have "to beat" in order to attract customers. Consequently, it becomes imperative for the Georgia market to operate competitively so that consumers are not harmed by the exercise of excessive market power by the unregulated providers, namely, the marketers.

Market power is commonly defined as the ability of a firm to set a price profitably above competitive levels (i.e., marginal cost, plus recovery of fixed costs including a normal profit) in the long run without attracting entry. In economic theory, any firm that is not a price-taker and faces, in economic parlance, a downward sloping demand curve has some degree of market power. Implicit in this definition is the ability of a firm to raise price above the competitive level for an extended period of time. Under the perfectly competitive model, firms are able to set prices above marginal cost for only a short period until new firms enter the marketplace. Therefore, the primary reason for prices above competitive levels is entry barriers that prevent prices from converging to marginal cost.

The focus of this report is on assessing whether gas marketers have

exercised such market-power excesses in their transactions with customers (especially residential customers) located in the Georgia deregulated market. A study to disclose market power is made difficult by the fact that judgment is required to determine not so much whether market power exists, but whether it is sufficiently large and persists for an long enough period of time to be considered harmful to consumers and to warrant some sort of remedial action. After all, few markets exist where firms hold no market power. In the real world, market power is commonplace, especially in markets where firms sell what are called differentiated products.

The concern should not be whether the Georgia deregulated gas market is perfectly competitive; rather, the pertinent question is whether the market power that likely exists is excessive and deemed harmful to gas consumers. The last point often gets ignored in market-power analysis. It may not always be the case that a firm with market power would use it to the detriment of consumers. For example, punishing a firm that has acquired market power solely because it has developed a superior product or is more efficient than competitors would be ill-advised, since harm is not done to consumers and incentives for future innovations would erode. Some firms retain or acquire market power through efficient activities, rather than through anti-competitive activities. Anti-competitive practices include deliberate acts by a firm or group of firms to increase price or reduce output. These acts include collusion among firms, driving out rivals with predatory practices, and anything that harms consumers.

Firms may not always fully exploit their ability to exercise market power because of possible political repercussions. As an example, studies have shown that in the early days of deregulation of long-distance telephone service AT&T

did not set profit-maximizing prices, fearing antitrust scrutiny if it did.

In antitrust cases, the courts usually evaluate market power by first defining the relevant market affected by a firm's or group of firms' conduct. As described below, the relevant market can be defined as a set of products that consumers considered to be close substitutes for each other. Once the relevant market has been defined, an assessment of market power next involves (1) measuring market shares, (2) examining the possibility of collusion among firms in the designated market, (3) determining conditions of entry, and (4) analyzing other relevant structural features of the market. These are the basic steps taken in this report.

Hardly a situation arises where disagreement between contesting parties over the existence of, and harm done by, market power does not occur. A classic example is the recent Microsoft case: although Microsoft undoubtedly has market power, which was not the center of dispute, the main point of contention was whether the company engaged in anti-competitive behavior, as opposed to its market power being the result of its higher efficiency over other software companies. Market power has always been a highly contentious area of study, whether in the academic environment or in antitrust cases. Sharp disputes exist over how to detect whether a firm has exercised market power, the major sources of market power, measurements of market power, and, probably most important and difficult to resolve, when is market power excessive and significantly detrimental to consumers. For example, some economists place great importance on market concentration, while others focus their attention on entry barriers, the contestability of markets and the price elasticity of demand. That is, for the latter group, high demand and

supply price elasticities infer that a firm would have little market power even if it has a high market share. Another area of contention is identifying the appropriate remedy for excessive market power.

Two distinct schools of economic theory differ on the prevalence of market power in different industries and the harm done to consumers. One school argues that, to the extent it exists, market power is transitory, as competitive forces will quickly emerge to undo it. A positive correlation between concentration and profit or price, as found in empirical studies, may be consistent with a range of firm behavior that includes collusion as one of numerous possible explanations. For example, such correlation can be evidence of efficiency rather than collusion if economies of scale are substantial.

On the other side of the spectrum are those who contend that market power along with its harmful effects prevails throughout the economy largely because of entry barriers.

The aim of this report is not to advance an ideology corresponding to either of these schools of thought. Instead, it takes the facts as given, and applies pertinent economic theories and models to assess the competitiveness of the Georgia market. But, as in antitrust cases, disagreement becomes inevitable as reasonable people can interpret the facts and economic theories differently. Consequently, although the report provides information to policymakers, it does not purport to provide a definitive answer to the question of whether marketers in the Georgia market are able to exercise "excessive market power." At this time, the most that can be said is that the Georgia market is highly concentrated; some market power probably exists; entry of new marketers may be obstructed by economies-of-scale conditions and other

factors; and market conditions such as consumer inertia may be conducive to tacit collusion and other abuses by marketers. No evidence clearly comes to the surface, however, that pinpoints specific actions by marketers exhibiting anti-competitive behavior.

Two particularly troublesome observations of the residential segment of the Georgia deregulated gas market triggered this report. One is the dramatic increase in the gap, since early 2001, between the commodity price charged by marketers for variable-price service and the wholesale price of gas (which includes both the wellhead price and interstate pipeline transportation). One would expect a markup to some degree if the marketers, in fact, were exercising market power or the commodity price included costs in addition to the wholesale price of gas. The markup, which was much lower and almost nonexistent prior to January 2001, dramatically widened over the past year. This markup was calculated for the three largest marketers (Georgia Natural Gas, Scana, and Shell) serving the Georgia market. Different reasons may explain the dramatic rise in the markup, including the exploitation of market power. In highly concentrated markets, such as the Atlanta gas market, one manifestation of market power is for retail prices to fall slowly with decreases in wholesale prices (since mid-January 2001, the wellhead price of gas has fallen steadily). For example, the strategy of individual firms may be to *not* lower their price, since this could invite price cutting by rivals with the result that everyone would suffer with lower profits and the firms initiating the price cut ultimately fails to secure a higher market share. Another explanation for the increased markup may be the allocation of non-gas costs to the commodity price component. For example, marketers may have included bad debt and “back

office” costs as part of the commodity price. This issue is being studied by Commission staff.

A second “red flag” is the high price of marketer gas sold over the last several months to the residential segment of the Georgia deregulated gas market, relative to the prices being charged by neighboring local gas utilities. In September of 2001, for example, the average price of gas in the Georgia deregulated market (including both fixed-price and variable-price service) was about 54 percent higher than the average price of gas sold by a sample of eight gas utilities in southeastern states. In fact, since May 2001 the average price of gas for the sampled southeastern states has been lower than the lowest-priced marketer serving the Georgia market. Relative prices between the Georgia market and adjacent areas have fluctuated over different periods of time; for example, the average price charged by marketers in the Georgia market was below the average price of the sampled southeastern gas utilities in November 2000, December 2000, February 2001, and March 2001. But since then, when the wellhead price of gas has steadily fallen, the price of gas sold in the Georgia market has exhibited a downward rigidity relative to prices in neighboring areas. Once again, this phenomenon may reflect the operation of a highly concentrated market, such as the Georgia market, where prices tend to be more inflexible on the downside than in less concentrated markets.

Looking at movements in prices at the national level, gas prices to residential customers in the United States have been surprisingly rigid over the last several month, notwithstanding the sharp drop in wellhead prices. During the period of January-August 2001, wellhead prices fell by 60 percent and city gate prices declined by 46 percent (the latter price includes only the acquisition

of gas by gas utilities for resale to retail customers). Delivered prices of gas purchased from the local gas utility over the same period declined significantly for commercial, industrial, and electric utility customers – 29, 55 and 60 percent, respectively. Most conspicuous was an increase in residential prices over the same period – although slight at 6.6 percent. One important explanation seems to lie with the mechanics of the purchased gas adjustment (PGA) mechanism, which in many states deferred the recovery of the high gas costs, especially to residential customers, during the winter of 2000-2001 to subsequent months. For the Georgia residential market, the commodity price component of variable-price service, on average, declined by 36 percent for the period January-August 2001. Overall, since January 2001 changes in wholesale gas prices charged to residential customers by marketers in the Georgia market do not seem to be out of line with price changes to residential customers for the country as a whole.

FEATURES OF A COMPETITIVE MARKET

Competitive markets have desirable social outcomes that make them the standard for assessing the performance of real-world markets. Competitive markets reflect the “invisible hand” of Adam Smith, where in trying to maximize their profits firms simultaneously maximize the interest of consumers. In other words, what is best for firms is best for consumers. In contrast, in markets with weak competition and firms exercising market power, these firms are able to engage in pricing and other activities that benefit themselves at a cost to consumers.

Although market power has the effect of reducing total social welfare through allocative and, possibly, productive efficiency losses, mostly it redistributes wealth from consumers to firms: consumers pay excessively high prices, or they are deprived of the benefits of additional consumption that would have otherwise occurred under lower, competitive prices. If marketers serving the Georgia deregulated market are, in fact, exploiting any market power that they may possess, it is assumed to be largely at the expense of consumers.

The Georgia deregulated gas market should be judged in terms of whether its performance is poor or worse than what was expected at the time of the passage of the Georgia Natural Gas Competition and Regulation Act. We cannot expect markets to operate in accordance with the “textbook” version of competition. The real world offers complications and conditions that deviate from the simple and frequently unrealistic assumptions made in

economics books and “blackboard” exercises. Nevertheless, the outcomes obtained in a perfectly competitive market can provide a useful yardstick for evaluating individual real-world markets.

One must be careful, however, to interpret the policy implications for a market that inevitably will fall short of the “ideal” performance of a perfectly competitive market. Some observers may be tempted to argue that any deviation of actual real-world performance from the performance of a perfectly competitive market exemplifies market failure demanding some kind of governmental intervention. This is simply wrong, since few markets exhibit the characteristics of a perfectly competitive market. Most markets can be classified as “workably competitive,” where entry is relatively free, collusion is absent, and consumers are made as well off as they are likely to be; government interference in those markets is more likely to decrease consumer well-being than to increase it, even in the absence of perfectly-competitive conditions.

Obviously, however, when deviations are significant and found to be harmful to consumers, some remedial action might be warranted. For example, if firms are found to partake in collusion or price fixing (either tacit or overt), a *laissez faire* policy should not be tolerated. Certainly, consumers need to be protected against anti-competitive behavior by firms, but, often times it is difficult to distinguish between a firm’s actions that are anti-competitive from those that are pro-competitive.

Competitive markets can be characterized by several common features. Some of these are linked to market power, while others are not. The Georgia program has been plagued by several problems, some of which are not surprising in light of the radical restructuring that has taken place. These

problems, which are well-documented, relate to customer confusion, slamming, disconnects, billing, marketing practices, bankruptcies by marketers, increased Commission workload, and customer service. (One marketer has been reprimanded by the Commission for unauthorized changing of consumers' gas provider [slamming] and for deceptive practices as a means to enlist new customers.) Most of these problems arguably are transitional, becoming less severe over time as more learning and experience by market participants evolve. Whether any of them relate to market power is not clear at this time. It seems sensible to believe that many, if not most, of these problems would emerge in a competitive market where consumers, marketers, and the Commission alike have faced a "bumpy road" in moving down their learning curves.

The first feature of a competitive market is that consumers have real choices for products and services considered to be naturally competitive. Whether consumers would be much better off by being able to choose among ten suppliers instead of five is not clear. A five-supplier market may be sufficiently competitive to produce prices close to marginal cost. Further no rule of thumb applies to how many suppliers are needed for consumers to have a sufficient variety of services and products from which to choose. As discussed later, although product variety *per se* should improve consumer welfare, it also can create market power for individual firms.

The second feature of a competitive market involves consumers receiving proper price signals. Prices are set on the basis of marginal cost with firms, in the long run, earning normal profits (i.e., profits just sufficient to induce firms to continue supplying the product in question). This means that consumers are

paying market-based prices reflective of both current and future market conditions. Preferences by some consumers to hedge against volatile prices by opting for a fixed-price contractual arrangement, assuming that it is being offered by marketers, is not a violation of the condition of market-based prices. As long as the fixed prices offered reflect future market-based prices, rather than inflated prices mirroring any excessive market power that marketers are able to exercise, the prices can be considered competitive. (It should be noted that, in an efficient market, the forward or fixed price corresponds closely to the best-guess future spot price.)

The third feature of a competitive market is that individual suppliers are unable to control prices. This is an extremely restrictive condition applicable to a relatively small number of firms and markets in the U.S. economy. In economics jargon, under competition firms become price-takers, not price-makers: firms do not strategically interact or cooperate in fixing prices either overtly or tacitly. A price-taker would charge a price set by the market on the basis of demand and supply conditions; a firm would supply the market with its product so long as its marginal cost is less than the market-determined price. In contrast, an example of a price-maker would be a firm that has a dominant position and on its own sets a profit-maximizing price, with the competitive fringe setting prices based on marginal cost. As discussed later, it is doubtful whether any marketer in the Georgia gas market can be considered a dominant firm in this regard. As a price-taker, a firm's product is assumed to be homogeneous and consumers are assumed to have perfect information. For example, with imperfect information a supplier may be able to artificially set a high price if it believes that its current customers are hesitant, for whatever reason, to seek out the prices of other

suppliers. Markets for differentiated products are inherently imperfectly competitive (firms face a downward-sloping demand curve), and, arguably, nothing should be done to make them more competitive. Incidentally, advertising by a firm producing a differentiated product is partially done to persuade consumers to buy its product rather than that of a rival; in a perfectly competitive market, on the other hand, since firms produce a homogeneous product, we should observe mostly “information” advertising (although advertising is sometimes used to differentiate essentially homogeneous products by creating “brands”).

A fourth feature of a competitive market is that no one firm has an unfair advantage over other firms. This basically means that all firms are subject to the same rules. Some firms may, however, have advantages in competing because of their superior capabilities or skills in achieving high efficiencies and responding to consumer needs – and this is okay, as the most efficient firms will have higher market shares, which they should. Most analysts and courts now recognize that the intent of a firm to take business away from rivals, and, therefore, hurt them financially, is the essence of competitive behavior.

One potential problem in retail competition regimes occurs when the affiliate of the local utility competes with other suppliers in the local market. Specifically, the utility or its parent company may want to exploit its position in the regulated monopoly market to gain an unfair advantage for its affiliate. As an analogy, an antitrust concern in the recent Microsoft court case was that control of the bottleneck (Windows 98) could foreclose rivals from providing complementary services. In most markets, leveraging of this kind poses no problem, largely because of the lack of economic incentive by a firm with

monopoly power in one market to maneuver that domination into the creation of a second monopoly in a complementary market. For a regulated monopolist, however, conditions are riper for leveraging. Under rate-of-return (ROR) regulation, a firm may have both the incentive and the ability to shift costs and engage in other market-power abuses; these abuses could give the affiliate an unfair advantage over its rivals in an otherwise competitive market. This advantage could thwart the entry of more efficient and consumer-responsive firms.

As a fifth feature, competitive markets have minimal entry and exit barriers. By definition, entry barriers prevent a firm from selling its products in a market where existing firms are earning economic profits. The social cost of barriers derives from the situation where they impose a cost or obstacle preventing a more efficient entrant from competing with less efficient firms. Entry analysis performed by antitrust authorities focuses on the dimensions timeliness, likelihood, and sufficiency. Examples of barriers that can be considered anti-competitive include onerous certification requirements for marketers, vertical foreclosure of essential facilities by the local utility, and discriminatory transmittal of vital consumer and system-operations information by the utility. In a perfectly competitive environment, firms can establish prices above marginal cost only until new firms enter the market. Thus, the basic reason why prices lie above a competitive level is that incumbent firms can block or limit potential entrants, that is, create or exploit effective entry barriers. Entry barriers can be either government induced or the outgrowth of a poorly structured or "natural monopoly" market. While the identification of entry barriers and their relative importance are subject to debate, candidates

include sunk costs, excess capacity, economies of scale or scope, advertising or brand-name capital, strategic pricing, product differentiation, regulations, and consumer inertia. Advertising and other promotional costs may be considered entry barriers since they represent sunk costs that cannot be retrieved if an entry effort is unsuccessful. As another example, product differentiation can create a long-run entry barrier.

Economists often disagree on whether certain “barriers” are actually anti-competitive or merely normal, pro-competitive market activities. Critics of a liberal definition of entry barriers argue that many of the alleged barriers are no more than market efficiencies that serve to improve consumer welfare. Thus, they are often mistaken for obstacles to competition that need to be mitigated.

As an example, when motivated by competitive forces, strategic pricing can be characterized as pro-competitive, rather than anti-competitive. By definition, pro-competitive activities benefit both consumers and society-at-large; in contrast, anti-competitive activities violate socially welfare-enhancing market practices by making a firm or group of firms better off and, at the same time, consumers worse off.

A last feature of competitive markets is that consumers are well-informed. Under this condition, consumers will know the different products and prices being offered by competing firms. These firms will tend to compete more aggressively, since they realize that consumers will go with those firms offering the best deal. Overall, knowledgeable consumers tend to shop around, induce price cuts, and undermine collusive behavior (more on this topic later). When, instead, consumers are ill-informed, firms recognize that they could maintain higher prices, not compete as aggressively, and still retain customers. For

example, if a marketer knows that its customers are not seeking out the prices being offered by other marketers, it may be able to charge a higher price. Even though other marketers would offer a lower price, the marketer recognizes that its customers may not know this or care if they did. Ill-informed consumers are often confused and their tendency is to stay with their current supplier, even though they would be better off by switching to another supplier. This condition again imposes less competitive pressure on suppliers to offer a lower price. Especially in a market where for the first time consumers have choice of suppliers, consumer education becomes crucial. Consumer confusion can revolve around price, as well as consumer rights and responsibilities. In such a market, adequate consumer education is essential for consumers to make informed decisions and for reducing the possibility of market power. An argument can be made that branding and advertising may help to make the market more competitive by disseminating useful information to consumers – thus, the standard of perfect competition whereby consumers have perfect information becomes closer to reality.

DEFINING THE MARKET

How the market is defined is an integral part of any market-power study. Specifically, before assessing the amount of market power a firm enjoys, the relevant market for the firm's output must be identified. One generic market definition includes the *substitutable products* and *geographic area* in which firms compete that affect the price for a given product. The relevant market can be rephrased as, in the words of two eminent economists, "that set of suppliers and demanders whose trading establishes the price of a good." Consistent with this definition, the relevant market includes those firms and products that act to constrain the activities of the firms that are the object of attention. The relevant market can be defined as the area in which a group of firms of some product and its close substitutes compete for the patronage of consumers. Whether a firm in that market is able to exploit market power by increasing price or reducing output depends on what economists call the cross-elasticity of demand and the cross-elasticity of supply.

In the case of the Georgia deregulated gas market, the price of gas services offered by marketers depends upon several factors: the wellhead price of gas, the availability of pipeline capacity and pipeline rates, the competitiveness of the retail market, the cost of ancillary gas services, and, probably to a more limited degree, the price of competing forms of energy. The Georgia gas market can be perceived as a separate market from other retail markets. For example, an increase in gas prices in Charlotte, North Carolina attributable to a rate increase granted by the commission in that state should

have minimal effect on gas prices in the Atlanta retail market.

Defining the product market under which a seller operates requires identifying all substitutes available to the buyers of the seller's product. For the Georgia deregulated gas market, questions revolve around whether a marketer's products and services compete with other products and services, with the latter limiting the marketer's ability to raise price, and whether they should be included in the product market. One general response is that close substitutes are customer specific: industrial customers with the ability to easily switch between gas and other forms of energy based on relative prices would have close substitutes for gas; for the typical small customers, on the other hand, substitutability is much less likely. The real question here comes down to how much consumers would respond to a price increase caused by market power, in terms of substituting another energy source for gas or another gas marketer for one whose price has increased. The relevant price to consider would be the price reflective of competitive conditions. The concept of cross-elasticity (i.e., the effect of a change in the price of one product on the demand for some other product) can be usefully applied to determine whether two products, such as gas and oil, are close substitutes at competitive prices. If a firm were charging a monopoly price for gas services, a high cross-elasticity for gas would only imply that the marketer could not raise its price any further without suffering profit and sales losses. It is not surprising to find a significant cross-elasticity between a monopolized product and other products at a monopoly price-output level. In other words, high cross-elasticities can indicate monopoly power by sellers, since rational pricing would place buyers just on the margin of leaving.

When a firm and its rivals sell their product only in a restricted geographic area and their customers lack ready access to an outside source of supply, the rule of thumb has been to define the geographic market as only that particular area. Calculating market concentration, for example, would encompass only sales made within that market. Consistent with this idea, the service territory of AGL would be the pertinent geographic area for gas sold by certified marketers to retail consumers located in the Georgia deregulated market area. In other words, these consumers (except for those consumers who are able to bypass AGL's distribution system and purchase gas directly off the pipeline) are precluded from buying gas from anyone other than certified marketers designated to serve the AGL service area. In antitrust analysis, the relevant geographic market is that "section of a country" where a firm can increase its price without losing many customers to other suppliers outside that area. An example would be gasoline stations in an isolated town. If they decide to raise prices and assuming the nearest town is fifty miles away, the relevant geographic area for a market-power analysis would be the boundaries of the town within which the colluding gas stations are located. Sure, people in the town could drive fifty miles to buy cheaper gas, but the savings would in most instances not be worth the cost.

Although the price paid for commodity (wellhead) gas by marketers is pretty much set by demand and supply factors at the national level, the price charged to retail consumers depends upon the competitiveness of the retail market. For example, in a competitive retail market, commodity gas prices charged to consumers will converge toward the price paid by marketers (i.e., the marketers' marginal cost). In contrast, where marketers have a high degree

of market power the price they charge would correspond more closely to the value consumers place on the gas. For example, if commodity gas is valued by retail consumers at \$5 per Mcf at the Atlanta city gate, and the spot price of gas purchased by marketers is \$2 per Mcf, exploitable rents would be \$3 per Mcf; that is, intermediaries collectively could charge as much as \$3 per Mcf with retail consumers still willing to purchase the gas. Let us assume that marketers can purchase pipeline service at \$1 per Mcf, which represents the federally regulated price. Consequently, marketers can charge up to \$4 per Mcf to retail consumers; that is, marketers could charge \$4 per Mcf for gas costing \$2 per Mcf – a markup of 100 percent.

In most markets where market power exists, firms usually price discriminate, often between different classes of customers. Although prices charged by marketers to non-residential customers in the Georgia market are not publicly available, it would not be surprising to find marketers earning the largest markups on residential customers because, as discussed later, of their passive response to price.

The above example illustrates the case where competition among marketers in the Georgia deregulated market is weak or nonexistent; otherwise, with a high degree of competition marketers would be forced to price the gas at close to \$2 per Mcf, which is their marginal cost. In a competitive market, marketers could profit -- earn what are called economic rents -- from selling commodity gas, for example, because of efficient procurement practices; the illustration here, instead, shows profits or rents being earned because of excessive market power being exercised by marketers. Marketers are exploiting their position by extracting welfare gains or surpluses from consumers. Even

though in this example the wholesale market for gas is assumed competitive (which few industry observers would contest), retail consumers are limited to purchasing gas from certified marketers serving the Georgia deregulated market. These consumers, other than switching to another form of energy or cutting back on their gas consumption in other ways, are restricted to buying their gas from this group of marketers, who arguably may not be operating in a competitive environment.

The above discussion helps to define the Georgia deregulated retail gas market: the relevant product is natural gas, with other forms of energy acting as substitutes for a limited number of consumers and end uses, and the relevant geographic area is the local market, since AGL customers can only purchase gas from marketers certified to serve the utility's service area. What this means is that if all marketers serving AGL's customers collude and raise their prices together, consumers would either pay the high price and not curtail their consumption or curtail their gas consumption by switching to other forms of energy or through conservation efforts. Of course, with the entry of new marketers, these high prices could not be sustained in the long run. But, with limited entry and little short-run demand response, consumers would be at the mercy of the existing marketers. For example, a residential customer who uses gas for essential services such as space heating and cooking may have little short-run opportunities to switch to another source of energy for meeting these services, even if marketers conspire to increase the price of gas. The additional fact that this consumer cannot "import" gas from an out-of-state marketer (for example, marketers certified to serve retail gas consumers, say, in Ohio) places great importance on assuring competition in the local market.

A last point here is that products sold in the same market generally face similar cost and demand conditions; thus, their prices tend to be highly correlated. In fact, one would not be surprised to observe similar prices offered by competing suppliers in the same market. Price correlation is at most a necessary condition for products belonging to the same market – it would be wrong, however, to infer that two firms belong to the same market just because their prices are highly correlated. Just take the case of two electric utilities located in opposite parts of the country; their prices may be highly correlated but few people would argue that they belong to the same market.

CHARACTERIZATION OF THE GEORGIA GAS MARKET

Measuring Market Power

Just over the last year, certified marketers in the Georgia deregulated retail gas market have declined from twelve to eight, with one marketer not allowed by the Commission to sign up new customers. At the beginning of the new deregulation regime, there were close to twenty marketers in the Georgia market. Since inception, the Commission has issued twenty-five certificates of authority with seventeen of the holders, for various reasons, not currently operating in the Georgia market. The top four marketers currently hold about 93 percent of the market, which represents a slight increase from the January 2000 level. Over time, there has been a decline in the number of fringe marketers, and a stable share of the market held by the largest marketers. This sorting out process has reduced the number of marketers but, arguably, has not led to what can be considered a dominant marketer (more on this later).

The most acceptable measure of market concentration is what is called the Herfindahl-Hirschman Index (HHI). The HHI is calculated as the sum of the squared market shares of each firm in a designated market. Starting in the early 1980s, federal authorities have used HHIs to evaluate mergers. For the Georgia market, the Commission staff calculated an increase in the HHI from a level of 2,444 in January 2000 to a level of 2,686 in September 2001. (A HHI value of 10,000 indicates a market with a single supplier.) Antitrust agencies consider a HHI value of 2,700 or, in fact, any level above 1,800, as raising the possibility of

a serious market-power problem with regard to a merger; the agencies, after calculating a high market concentration, would generally next consider the market characteristics such as entry conditions and the prospects for collusion. Rarely, do enforcement agencies consider a market with a HHI below 1,800 as problematic (1,800 interpreted as the threshold defining a “highly concentrated” market). It should be pointed out, however, that a HHI between 1,000 and 1,800 normally requires further examination rather than automatic clearance if a merger proposal would increase the HHI for a market by over 100 points.

In antitrust cases, the HHI is applied only as a screening tool to help determine whether additional analysis of potential market power should be carried out. The Commission staff HHI calculation of around 2,700 certainly provides a strong rationale for investigating further the competitiveness of the Georgia deregulated gas market. For comparative purposes, the concentration in the Georgia market resembles that in the cereal breakfast foods, the greeting cards, the household refrigerators and freezers, and the photographic equipment and supplies industries. As discussed below, industries with such high concentrations can be described as oligopolies. With some exceptions, these industries have not been subject to antitrust scrutiny – the presumption is that, although firms in these and other industries possess some degree of market power, it is not excessive or would unlikely result in anti-competitive activities such as collusion. One important consideration is the sophistication of buyers; for example, when buyers are less active in pursuing the “best deals,” it is more likely that the firms in a concentrated market would be able to exercise excessive market power.

A theoretically preferred measure of market power relative to concentration measures such as HHI, which, as stated above, is regarded by economists as the best measure of market concentration, is what is called the "Lerner index." (As shown later, the HHI also has the appealing feature of directly linking market concentration with market power in one theoretical oligopoly model, namely, the Cournot model.) (A third approach for measuring market power would be to observe the reaction of individual firms to the activities of other firms.) The Lerner index, L, can be defined as:

$$L = (P - MC)/P = 1/e$$

where

P = price

MC = marginal cost

e = price elasticity of demand facing a firm

The Lerner index for a perfectly competitive market is zero, while its value is one for a pure-monopoly market. The more the Lerner index deviates from zero, the greater is the measured market power. As the above relationship clearly shows, the higher the price elasticity of demand facing a firm the closer price is to the perfectly competitive level. This particular elasticity provides a good measure of market power for individual firms.

For most industries, it is difficult to calculate marginal cost, which is the major reason why the Lerner index is not as widely used as the theoretically inferior HHI or four-firm concentration ratio statistics. One important point

about the Lerner index is that a high elasticity coefficient implies little market power. The elasticity, which is the price elasticity of demand facing an individual firm at its profit-maximizing price, or sometimes referred to as the residual price demand elasticity, becomes higher as a firm's market share decreases, the price elasticity of market demand increases, or the price elasticity of supply of other firms increases (i.e., an increased willingness and ability of other firms to enter and expand in response to any attempted price increase). In an oligopoly market, which will be discussed in detail later, market power also depends on the strategic actions of a firm in response to actions taken by its rivals.

Illustrating the calculation of a residual price demand elasticity, assume we have an industry with a dominant firm-competitive fringe market structure. (If one firm is a price setter and faces smaller, price-taking firms, it is called a "dominant firm." The dominant firm typically has a large market share, with the price-taking firms [fringe firms] each having a very small share of the market, although collectively they may have a substantial share of the market.) Let us also assume that the product being sold has a market demand elasticity of -0.3 (which is probably the "best guess" number for retail natural gas markets), a price elasticity of fringe supply of 1, and the dominant firm has a market share of 60 percent. The residual demand elasticity for the dominant firm can be expressed as $e_d = e_m/MS_d - (1 - MS_d)e_s/MS_d$, where e_m is the market demand price elasticity, MS_d is the market share of the dominant firm, and e_s is the price elasticity of fringe supply. Applying the above information, the residual elasticity is -1.167, which translates into a Lerner index of 0.857. This is equivalent to the dominant firm's marginal cost being less than 15 percent of its profit -

maximizing price.

There is no presumption here that the dominant firm-competitive fringe model is an accurate representation of the Georgia market. As discussed later, it seems more correct to depict the Georgia market as a symmetric oligopoly. Even though Georgia Natural would be the best candidate for the dominant firm, its market share is not distinctly higher than the market shares of the other leading marketers. (Incidentally, no evidence has come forth alleging that Georgia Natural has unfairly benefited from its affiliate association with AGL. Georgia has strict codes-of-conduct rules prohibiting preferential treatment of an affiliate by a gas utility. These comprehensive rules address structural separations, the prevention of preferential treatment, joint sales, promotions and marketing, the use of the utility name or logo, the provision of information, and separate books and records.) There is also no evidence that Georgia Natural is superior to the other market ers in marketing, operations, customer service, or anything else that would make it a dominant firm. It can be said, however, that Georgia Natural may have an advantage because of its affiliation with AGL – specifically, consumers may perceive it to have better service than other marketers because of this association (more on this later). If this advantage is considered an important factor in attracting customers, Georgia Natural may, in fact, have some exclusive ability to exercise market power.

In a dominant firm-competitive fringe model, it is assumed that only the dominant firm possesses market power. Without additional evidence, it is hard to believe that this condition holds true for the Georgia market. Another thing to note about this market structure is, perhaps more plausibly, a group of

marketers (for example, the four largest) can act collectively as a dominant firm.

These marketers can cooperate to promote their collective self-interest, but they would still face the competitive fringe of non-cooperating marketers.

Whether a dominant firm (or group of firms) can exercise market power in the long run depends crucially on the number of firms that can enter a market and their costs, relative to those of the dominant firm or firms.

As another example calculating the Lerner index, assume a market with four identical firms. The price elasticity facing any one firm can be expressed as $e_i = e_m n - e_s(n-1)$, where e_m is the market demand price elasticity, n is the number of firms, and e_s is the supply price elasticity. Let us assume as before a market demand elasticity of -0.3 and a supply elasticity of 1; the residual elasticity is then -4.2, which is equivalent to an Lerner index of 0.238. This example illustrates the case where a reasonable degree of competition seems to exist even with only four firms in the market and a HHI of 2,500.

In sum, the price elasticity facing a firm critically affects a firm's ability to exercise market power. In turn, the elasticity depends on a firm's market share, the market demand price elasticity, and the supply price elasticity. In most markets (e.g., natural resources, farming), the market demand price elasticity may be small but firms generally would have little market power because of low market concentration and easy entry (which implies a high supply price elasticity)

Description of Market Structure

The Georgia deregulated retail gas market can best be described as an

oligopoly. The fact that four marketers serve over 90 percent of the market, and sell to a large number of buyers, strongly suggests a market where each marketer recognizes its interdependency with other marketers. (Information on market shares for individual marketers is not publicly disclosed.) Specifically, a single marketer's pricing strategy depends on the strategies adopted by other marketers. Each marketer would be cognizant of the behavior of the other marketers. In most oligopoly settings, firms are able to sustain prices above marginal cost without engaging in overt collusive activities; for example, an individual firm would be deterred from initiating a price war if there is a serious threat of retaliation from rival firms. This form of tacit collusion increases the ability of a single firm to maintain prices above non-cooperative levels even in the absence of explicit communications among firms. (Incidentally, outcomes under implied or tacit agreements among firms to not compete aggressively coincide with a Cournot equilibrium, which is discussed below.) The economics literature has shown that market power varies widely across different oligopoly industries, depending upon the assumptions made about market characteristics and the strategic actions of individual firms.

Any analysis of oligopoly markets lacks an unifying theory in producing precise, useful results relating market structure to conduct and performance. For example, oligopoly theory does not offer any definite price predictions analogous to the predictions of perfectly competitive and monopoly markets. Most theories that are applied predict that prices in oligopoly markets are greater than marginal cost but less than the price of a pure monopolist. Various oligopoly models predict different outcomes because of their varying assumptions about how firms behave, the number of firms in a relevant market,

the characteristics of a market and the products sold, and the degree of interaction between firms. On theoretical grounds, identifying the best model for a particular market is not an easy task. In selecting a model, one must examine whether the assumptions are reasonable and the predicted outcomes are compatible with actual market outcomes. For example, predictions of the price-cost margin differ widely across oligopoly models, with some predicting little market power while others predicting a high degree of market power, especially under collusive behavior.

The interdependency of marketers in the Georgia market revolves around the premise that each marketer believes that its actions (1) affect the price it receives, and (2) must account for the reactions of other marketers. (Recall that in a perfectly competitive market, each firm acts as if its individual actions do not affect the market price – the firm is a price-taker; at the other extreme, a monopolist has no close rivals whose reactions must be considered in making decisions.) In an oligopoly environment, strategic actions prevail because of the interdependence among firms. Unlike what is called a “dominant firm-competitive fringe” market structure, an oligopoly typically has no single dominant firm. (We previously argued that Georgia Natural, the largest gas marketer serving the Georgia deregulated market area, is probably not a dominant firm, but there is not complete certainty in this argument.) Some industries may be inherently structured as “natural oligopolies” in that entry by new firms depends on capturing a minimum share of the market. For example, because of the small markup in most commodity markets, an entrant to the Georgia market may have to attract at least a threshold number of customers to cover its overhead and other fixed costs.

An analyst can choose among various oligopoly models in describing price and non-price behavior for the market under study. These models contain different assumptions or rules of strategic behavior with regard to: (1) the firms' strategic decision variable (prices, outputs, advertising, product differentiation, or quality), (2) sequence of actions (simultaneous decisions by firms or sequential behavior), (3) the relevant time horizon (single-decision period, multiple or infinite time periods), (4) the number of firms in the market, and (5) the amount of information each firm has. These assumptions help identify the correct model for predicting the behavior of firms and their consequent performance.

Identifying the pertinent oligopoly model to the Georgia market should provide insights into understanding the performance of that market. Several characteristics of the Georgia market come to the forefront. First, marketers seem unconstrained by the characteristics of the marketplace in acquiring and delivering gas to meet current and growing demand: needed gas supplies are readily available at the spot markets from which marketers purchase gas, unless, of course, upstream transportation bottlenecks exist. In addition, if a marketer, through aggressive pricing or other means, wins market shares from other marketers, under normal conditions it should be able to acquire the needed pipeline capacity from AGL. This market feature would tend to support what economists call the Bertrand model.

The Bertrand model describes an oligopoly market where a small number of firms set their prices simultaneously and compete vigorously. At equilibrium, each firm prices and produces a product at its profit-maximizing level, accounting for the prices of the other firms. Under the Bertrand model, prices move toward marginal cost or perfectly competitive levels; this occurs whether

the industry has ten or two firms; this counterintuitive result is sometimes referred to as the Bertrand Paradox where the market price and profits do not depend upon the number of firms in the market (i.e., profits and market concentration are unrelated). The driving force behind this perfectly-competitive outcome lies with the fear of each firm losing all of its market share unless it prices at marginal cost. As shown below, the Bertrand model represents a static framework making some serious untenable assumptions about the actual behavior of marketers serving the Georgia deregulated gas market.

The Bertrand model applies best when a small number of firms compete on price, interact infrequently, have perfect information on their rivals' costs, have similar marginal costs, set their prices simultaneously, and produce homogeneous products (the products of the different firms are perfect substitutes, which implies that the firm with the lowest price gets the entire market). Demand for each firm's product depends on the price it sets, as well as the prices selected by rival firms. In the context of the Georgia market, this means that when a marketer, for example, decides what price to set, it has to make some conjecture regarding the pricing strategies of rival marketers. Based on this conjecture, a marketer must determine its optimal price, taking into account how demand for its product depends on both the price it sets and the prices of its rivals. In applying the Bertrand model, it is assumed that marketers do not have binding capacity constraints, which seems reasonable based on the earlier discussion (although it should be pointed out that pipeline transmission bottlenecks can occur, especially during peak periods, which would have the effect of driving up gas prices in the Georgia market and increase the market power of marketers). If a marketer's capacity and output can be adjusted to meet the demand of

the entire market, then it can be argued that the Bertrand model provides a better description of oligopoly competition than the rival Cournot model (more on this later in the report).

The static version of the Bertrand model, where firms are assumed to interact in a single period, does not account for all real-world characteristics (which, as shown later, include those of the Georgia deregulated gas market). One example is the repeated interaction among firms, which may upset the Bertrand-Nash equilibrium: with repeated interaction, a firm must take into account not only the possible increase in current profits but also the possibility of a price war and long-term profit losses when deciding whether to undercut a rival's price. In a static single-period model, collusion never occurs because cheating on one's rival will always dominate behaving cooperatively.

As argued above, from a static perspective the Bertrand model probably better represents the Georgia market than the Cournot model, which is the most commonly applied oligopoly model. Under the Cournot model, individual firms choose output (rather than price) as the decision variable. One outcome is that individual firms have market power (i.e., they are price-makers) and set a price above marginal cost. This is the result of each firm realizing its output affects the market price, namely, the less it produces, the higher is the market price. Consequently, by producing less than what it would if its strategy has no effect on the market price, each firm would set a price exceeding the competitive price or marginal cost. The deviation is dependent upon the price elasticity of demand facing each firm. The Cournot model has been applied to measure market power in deregulated wholesale electricity markets where generators typically submit bids with prices set by the clearing of the market.

The Cournot model assumes unreasonable, because of capacity constraints, for a single power generator to supply the entire market by pricing below other generators. Both the Bertrand and Cournot models ignore the possibility of collusion, which may be a prevalent feature of some oligopoly markets, including the Georgia market. In the Cournot model, the exercise of market power by individual firms is carried out unilaterally.

In a symmetric Cournot model (where all firms are behaving in similar, oligopolistic fashion), the Lerner index can be calculated as HHI/e , where HHI is the Herfindahl-Hirschman Index and "e" is the price elasticity of market demand (in absolute terms). One thing to note here, and which is also true for other market models, is that market concentration (i.e., HHI) represents only one factor in determining the magnitude of market power. In the above formula, the price elasticity of demand is another factor. Even in unconcentrated markets, prices can deviate substantially from marginal costs when the price elasticity of demand is small. (This seems to be true for some deregulated wholesale electricity markets.)

Calculating the Lerner index for the Georgia market, assuming an HHI of 0.27 (which is equivalent to the HHI value of 2,700 calculated by Commission staff for the Georgia market) and a price elasticity of demand of 0.3 (which, in absolute terms, is consistent with studies estimating the short-run elasticity of natural gas demand), the Lerner index is calculated as 0.9; this means that given the assumption of a symmetric Cournot market structure, prices would be predicted to be ten times marginal cost. This means that a symmetric-Cournot marketer would charge a retail price that is ten times its marginal cost for wholesale gas plus any retail-related costs. Such a high price-cost margin

strongly suggests the exercise of market power to a high degree. The Lerner index for a symmetric Cournot model is presented here only for illustrative purposes. As argued earlier, the Cournot model is highly suspect as the right model for describing behavior of the Georgia market and assessing market power in that market. On the other hand, relative to the Bertrand model, it seems more appealing because of its prediction that prices would fall somewhere between the competitive and monopoly levels.

A conspicuous attribute of the Georgia market is that, while all marketers are required to publicize their prices on a monthly basis, the practice has been for one marketer, namely, Georgia Natural, to post its prices earlier. Specifically, it has been the practice for Georgia Natural to file its prices with the Commission at the end of the month, with the other marketers filing on the fifth day of the following month. This sequential-pricing strategy, especially in an environment where marketers repeatedly interact, may suggest a price-leadership role for Georgia Natural. Specifically, this sequential posting of prices may induce tacit collusive behavior, where one marketer sets the price for others to follow. In this instance, price leadership may be an effective substitute for an overt collusive arrangement to fix prices. Price leadership, if in fact it is occurring in the Atlanta market, may, however, be benign. If the price leader is the low-cost provider, the resulting convergence of price movements among marketers does not necessarily reflect collusive behavior. Instead, such a pattern of prices may illustrate an independent struggle for market shares among uncoordinated marketers. Another form of benign price leadership recognizes that one marketer may be superior to others in gauging market conditions. The price leader may not necessarily have market power or superior products. In this

instance, the one marketer would be a price leader, with other marketers acquiring valuable information for making their own pricing decisions. (In other open retail gas markets, the local utility in effect acts as the price leader by assuming the role of provider of last resort.)

Conditions in the Georgia market make it susceptible to tacit collusion, thereby greatly diminishing the predictability of any static oligopoly model, including the Bertrand and Cournot models: (1) the market contains relatively few firms, with four large players, (2) entry barriers exist in the form of promotional, marketing and advertising costs, and their associated economies-of-scale characteristic, (3) consumers probably perceive little differences among the products sold by the different marketers (i.e., the products of the different marketers represent good substitutes, or, to say differently, they are essentially homogeneous), (4) the price elasticity of demand for gas, especially in the short run, is inelastic (econometric studies have suggested a price elasticity of approximately -0.3), (5) marketers interact on a repeated basis, and (6) marketers have similar costs – they purchase commodity gas in the same markets, and they acquire pipeline capacity from AGL at the same price, although how they manage their storage assets and their “back room” operations can affect their costs. Overall, taking into account these conditions as a whole, tacit collusion becomes more than a remote possibility in the Georgia market.

Tacit collusion reflects strategic behavior where firms coordinate their actions by acting together to increase their collective profits. Normally, these actions reduce competitive intensity among firms by maintaining high prices or discouraging a price war. Any collusive arrangement is prone to cheating by

individual firms. A firm may be motivated to cheat when its current profits would increase from undercutting the collusive price.

An important attribute of the Georgia market is that marketers interact with each other repeatedly. Economic theory, supported by empirical studies, suggests that under this condition collusion becomes more likely. Repeated interaction among marketers makes it more probable for marketers to cooperate by profitably selecting prices above marginal cost: cheating becomes less viable, as firms would be less willing to price aggressively or initiate a price war that drives prices toward a competitive level. This form of collusion is typically not overt but, rather, reflects mutual behavior by long-term rivals (that is, tacit collusion). Any collusive arrangement would have to specify the exact strategy to be carried out, as well as how penalties will be imposed for cheating by individual firms. One form of punishment would be for all firms to engage in a price war that drives down the long-run profits of a cheating firm.

PRELIMINARY ASSESSMENT OF THE GEORGIA GAS MARKET

A recent report conducted by PA Consulting concluded that :

In Georgia's natural gas market the competitive process has been successful, providing consumers with more choices of suppliers and rate plans, fair prices, acceptable customer service and some innovative product offerings that were not available from Atlanta Gas Light ... in the regulated environment.

Although some of these conclusions may be correct, the study did not explicitly address whether the marketers in the Georgia market have exercised "excessive" market power. It is hard to imagine how the report could conclude that prices have been "fair", and the "competitive process has been successful," by begging the question of the competitiveness of the Georgia market. As discussed above, the Georgia market has characteristics that at least suggest the presence of market power. The pertinent question, and admittedly a difficult one to answer, is whether the market power that likely exists is excessive enough to cause significant harm to retail gas consumers. Usually when the courts in antitrust proceedings find a firm guilty of exercising market power, it means that the firm has a substantial amount of market power for some significant period of time. This report attempts to identify those aspects of the market that are likely to be the major contributors of the market power that arguably exists in the Georgia gas market.

Market Concentration

The relationship between market concentration and market power is difficult to assess. Under the old theory of economics, firms in markets with high concentrations were assumed to have market power. Of course, this perception fails to consider the crucial question of whether this market power is excessive and requires some corrective action. The new theory, which most economists now subscribe to, says that high market concentrations, *per se*, do not necessarily indicate the presence of market power that is excessive and highly damaging to consumers. It places little predictability on the relationship between market concentration and industry performance. This theory suggests that market concentration would likely have little effect on the exercise of market power if entry is easy. For most economists, high market concentration certainly raises the specter of successful collusion, but economics provides no single measure for determining the effects of concentration on non-competitive behavior. It is unrealistic that such a measure can be derived because the relationship between the likelihood of non-competitive behavior and market structure is too complex to be incorporated into a single measure. Several factors exist affecting the propensity of firms to collude (mentioned earlier) – this is supported by empirical evidence showing that high market concentration is not a sufficient condition for effective collusion.

By any account, the fact that market concentration in the Georgia gas market is high is cause for concern. The conclusion reached here is that, although no collusion can be validated or even credibly alleged, specific conditions in that market are ripe for fostering tacit collusion. It is safe to say

that marketers in the Georgia market hold some degree of market power in that they have the ability to charge prices above their marginal cost. Whether they have exercised it in a harmful way to consumers cannot be answered at this time.

Entry Conditions

One common problem in both the natural gas and electricity sectors throughout the United States has been the lack of interest by marketers to enter retail markets. Recent experiences cast a shadow over the performance of retail competition in both electric and natural gas markets. Currently, there is a great deal of uncertainty over the future viability of these retail markets, especially electric markets. Some marketers have consciously stayed out of retail markets, while others have not benefitted from the economies of scale that were anticipated with the widespread growth of retail markets. A common pattern in electric and gas retail markets has been the departure of many of the early entrants, most of whom were small marketers, and the reluctance of some major marketers to enter because of the fear of low profit margins and low sales volumes. In open retail electric and gas markets, where the provision of only basic commodity services has been the general rule, profit margins tend to be small. Marketers and other energy service providers may enter these markets only if they believe they can attract a sufficient number of customers. Otherwise, they foresee uncertainty over the recovery of their overhead and entry costs, as well as earning what they consider an "reasonable" profit. As pointed out earlier, the Georgia market is unique in that all customers are served by

unregulated marketers. In other open markets, the utility assumes the role of provider of last resort. Some industry observers of both the electric and natural gas sectors have argued that this arrangement has acted as a major barrier to the development of retail competition. To the extent this observation is correct, the environment of the Georgia market (assuming other things the same), relative to other open retail gas markets, should be more conducive to entry by third-party providers.

Economies of scale may prevail, obstructing free entry into the Georgia market. One trend in the Georgia market has been the exiting of smaller marketers over time. The sorting out process, which is commonplace in many oligopoly markets, has led to larger marketers displacing smaller marketers. It is hard to believe that retail competition for either gas or electricity will accelerate much beyond its current stage of development without an heightened demand for value-added services (for example, energy management, information services, special metering, unrelated services). These services will provide greater benefits to consumers and opportunities for marketers and other energy service providers to earn higher profits than what they have to date. Throughout the country, energy service providers have exhibited a greater inclination to enter gas markets if they can offer packaged services that include electricity, telephone, cable, and internet access.

While retail gas marketing would seem to have low entry costs, this perception may be misleading. When entering a new market, a marketer would have to expend money in marketing, sales and advertising. In the Georgia market, for example, marketers have advertised by direct mail, on television, by telephone, on radio and in the newspapers. Customer acquisition

costs can be quite high for new entrants. Studies have shown that the cost by a marketer to pursue and sign residential customers are high relative to the expected margins earned. In other words, the payback period may be too long for some marketers. The NRRI conducted a study a few years ago citing a survey that calculated a marketer's cost of pursuing and signing one residential gas customer as around \$200, while the margin for that customer would average \$25 per year. This translates into an eight-year payback period, which would probably discourage many if not most marketers from entering the residential market. Even at \$100 or less per customer, the payback period to recoup customer acquisition costs may be so long as to create entry barriers, especially for small marketers.

Evidence has also shown that acquisition costs for the residential segment of the market exhibit economies-of-scale characteristics, where the more customers that are signed up, the lower the average acquisition costs. Low-usage customers, in particular, are more costly to acquire and serve relative to the revenues generated. Thus, it is not as profitable a segment for marketers to pursue aggressively.

As discussed earlier, some industry analysts argue that vibrant retail gas and electric markets, where many more energy service providers would be lured, require the offering of a wide array of highly-valued "rebundled" services for mass-market customers. Until this time, it should be expected that marketers will continue to earn slim margins in retail markets and, consequently, show little interest in participating. Of course, this situation assumes competitive markets, or markets where the local utility provides a price cap in the form of standard offer service on the price that marketers could charge for their services. In the

Georgia market, where no such price constraint exists, marketers may have greater opportunities to increase their margins above slim “competitive” levels by the exercise of market power.

The main point made here is that entry barriers represent the major underlying source of market power in most situations. For most markets, entry barriers are difficult to identify and measure. The pertinent policy question centers around identifying those barriers that stifle competition from those that do not. Anything that mitigates legitimate barriers should promote competition in the Georgia market and reduce the likelihood of market power. Tight regulations and rules can be a major source of entry barriers. For example, certification requirements can impose high costs to marketers who may decide not to enter a market because of them. Marketers considering entry into the Georgia market must have significant financial and technical resources. This may have the effect of reducing the number of marketers willing to enter the Georgia market. For example, the Commission’s certification rules are more detailed and probably more costly to marketers than in most other states. Although these rules have the enviable objective of protecting consumers, and may be justified by the fact that the Georgia market is unique among choice programs in the country in requiring all retail customers to be served by marketers, they tend to discourage marketers from entering the Georgia market.

Since the opening of the Georgia gas market, more restrictions and rules have been imposed on marketers. (These include rules pertaining to the filing of price information with the Commission, disclosure of pricing information when an offer is made to customers, additional standards for certifications, and additional

grounds for revocation, suspension or modification of a marketer's certificate.)

New rules may have kept out some marketers, especially small one who are most hurt by them. (No opinion is intended here to judge the merits of these rules; they were implemented largely to protect consumers from abuses by marketers.)

Although pricing has been deregulated, with regard to their other activities marketers in the Georgia gas market are increasingly being regulated in the same way as utilities. Although not independently investigated here, marketers have contended that AGL's operational rules have made it more difficult for them as well as new entrants to earn a profit from their business. For example, marketers have argued that AGL's method for forecasting the Daily Supply Requirement (DSR) has forced them to acquire unnecessary and costly peaking service from AGL.

Consumer-Side Characteristics

Another potentially major problem in the Georgia market lies with the apathy exhibited by residential consumers in searching out the “best deals.” It may be rational for consumers to incur little or no cost in searching out different marketers. This seems especially true for small customers, who are less likely than large customers to change marketers in response to a given price difference. Across recently deregulated industries, one clearly observes more vigorous competition in the large-customer segment of the market. Having higher usage, large customers are more likely to change suppliers in view of price differences. One outcome of inert behavior by small customers is that marketers may be less aggressive in their pricing strategies. Take the case of a marketer who knows that its current customers are unlikely to leave for another marketer. With “captive” customers, the marketer would have a greater ability to charge higher prices and not have to worry about losing customers. It may have an incentive, however, to offer lower prices to attract new customers. These prices would tend to be temporary and strategies other than pricing could be used to lure new customers (e.g., merchandise coupons). In fact, the strategy of marketers in the Georgia market has been to offer up-front gifts and other inducements to lure residential customers, rather than compete on the basis of price to either attract new customers or to retain existing ones. This strategy seems to recognize the importance of attracting customers who are reluctant to change marketers later.

The “poaching” of customers by rival firms represents a vital component of the competitive process. As such, poaching should be interpreted here as a socially desirable activity enhancing competitive pressures and, consequently, consumer interests. Especially in a highly concentrated market, the ability of firms to steal customers from rivals makes pricing cutting or cheating on a collusive agreement more likely. Poaching may take the form of a firm offering a special discount or other inducements to induce customers to switch. Poaching activities are discouraged by different factors, one of which is switching costs. Consumers are expected to switch suppliers only when they expect the gains to exceed the costs. (This assumes risk neutrality.) In the situation where marketers are selling homogeneous products, switching specifically requires the gains from a lower price to exceed the switching cost incurred by customers. Switching costs may include search costs, time spent in processing the switch, and fees. Switching costs have negative consequences in terms of raising price and reducing competition from less entry. For example, by placing incumbent firms at an advantage, switching costs would discourage entry; incumbent firms, in fact, could charge a higher price and still retain existing customers. The economics literature has also shown that switching costs, in addition to other consumer transaction costs, tend to reduce the incentive of firms to differentiate their products and services.

A second factor discouraging poaching lies with the possibility that some customers are more costly to serve than others. For example, a marketer may be reluctant to attract customers with a bad credit record or who have been delinquent in paying their past gas bills. If the marketer has no information on the credit records of customers of other marketers, it may risk facing the “lemon

problem” and, therefore, be less willing to poach. Finally, since customers differ in their willingness to switch marketers, the poacher may have to worry about attracting customers who may quickly bolt to another marketer. (Marketers can avoid this problem, say, by offering customers long-term contracts or a budget billing plan.)

Overall, higher consumer search costs or switching costs have similar effects on increasing market power. Higher search costs may result in marketers initially offering a low price or other inducements to attract customers, knowing that these customers may be unwilling to switch later even when rivals offer better prices. Publicizing marketer prices can significantly reduce search costs for consumers, but, as discussed above, it may have a negative effect by increasing the likelihood of collusion by marketers. On the other hand, it can be argued that to the extent lower search costs induce more searching by consumers, less collusion would occur. The reason is that price cutting by marketers whose potential customers regularly collect price information would have greater success than price cutting when such price information is not collected. Switching costs consist of both direct monetary costs (in the Georgia market, if a customer switches marketers more than once a year, she has to pay a fee) and, perhaps much more important, time costs. Anything that would decrease the time required by consumers to switch marketers would benefit consumers directly as well as indirectly by reducing the possibility of market power.

Prospects for Collusion

As discussed earlier, the oligopoly structure of the Georgia market along with prevailing market characteristics may be conducive to (tacit) collusive behavior. (To recall, collusive behavior reflects cooperation among competitors whose sole purpose is to eliminate or soften competition and raise prices above competitive levels.) Collusion emerges as a dynamic strategy in markets where firms have repeated interaction and have the ability to monitor and, if necessary, punish each other's pricing behavior. Four marketers collectively dominate the Georgia gas market, with no clear evidence that any one can be labeled or considered the leader. The 40 percent market share allegedly held by the largest marketer, Georgia Natural, raises the question of whether it holds a dominating position over the next largest three marketers.

The model that may best describe the Georgia market, a dynamic version of the Bertrand model, allows for price competition but a softened version in view of the market's characteristics. When a market has transparent prices along with a small number of firms that have substantial information about each other, repeated interaction could lead to collusion. In a dynamic or multi-period market of repeated interaction, over time firms learn to compete less aggressively with one another. Repeated interaction also allows firms to more credibly threaten to punish a rival who behaves non-cooperatively. Faced with the prospect of a more credible threat of retaliation, a firm is less likely to compete aggressively. This reduced rivalry between firms would inevitably lead to higher prices for consumers. This scenario becomes a real possibility in the Georgia market in light of its structure and other specific characteristics.

Several market conditions facilitate tacit collusion, some of which exist in the Georgia market. In addition to product homogeneity, entry barriers, a low market demand price elasticity, and a small number of rivals, they include: (1) transparent prices, which make cheating easier to detect (but, as stated above, they also can help consumers to become better informed), (2) pre-announcing planned price changes, and (3) pre-commitment strategies that foreclose various price options to firms and, thereby, making collusion more optimal for individual firms.

Collusion, when it occurs, is most times unstable and short-lived, especially in a dynamic market such as natural gas with volatile supply and demand conditions. An individual firm usually finds it more profitable to set a price below the collusive level and increase its market share than to abide by the collusive agreement. Of course, if the firm is detected and the other firms are able to punish it, for example, by waging a price war, the firm may decide cheating would not be in its best interest.

Game theory tells us uncoordinated actions by self-interest individuals do not always result in outcomes with the highest possible benefits to the individuals playing the game. One notable example in the economics literature is the prisoners' dilemma game in which each player has a disincentive to cooperate even though cooperation would be in each player's best interest. In this game, each player has an incentive to behave in a way that is harmful to all players. Each player is therefore motivated to take an action that is incompatible with the joint interest of all players. For example, each player has an incentive to turn on the other, even though the optimal choice would be for each to cooperate with others. Analysts have shown that if a single-period prisoners' dilemma is

repeated many times over, collusion becomes more likely as each player can influence her rival's behavior by signaling and threatening to punish.

Price-Cost Margin

Turning to another topic, a high price-cost margin is a direct measure of a firm's market power. Recall that in a perfectly competitive market the market price equals marginal cost, or the Lerner index is equal to zero. (It should be noted, however, that even in free-entry markets, revenues must recover fixed costs, including a normal profit – that is, prices lie above marginal cost, reflecting the recovery of allocated fixed costs and a reasonable profit to attract and retain capital in the market.) Preliminary analysis suggests that marketers serving the Georgia market have enjoyed a much higher price-cost margin since early 2001. At the same time, market concentration has also increased. The study performed by Commission staff used the marketers' commodity-price component of variable-price service and the wholesale price of gas as the price parameter and the cost parameter, respectively. Since marketers incurred other costs, including storage costs, "backroom" costs, sales costs and so forth, it would be wrong to apply the calculated price-cost margin to directly measure market power. The calculations are of particular interest, however, because they show a wider gap between the marketer's price and the wellhead price correlating with a higher HHI.

During the study period, wellhead gas prices fluctuated dramatically, initially increasing and then decreasing. In a competitive environment, marketers would be expected to respond by varying their prices proportionately.

But, for whatever reason, the marketers' commodity prices for variable-price service deviated farther from the wholesale gas price, especially during the period of wellhead-price declines (which began around mid-January 2001).

At least two explanations can account for this wider gap. First, the marketers' ancillary and retail-related costs, for whatever reason, may have been allocated to the commodity-price component. At issue is the effect of the sharp increase in bad debt on commodity prices; of course, there is the question of whether incurred bad debt should affect commodity prices at all, since it can be considered a fixed cost that would have no effect on usage or marginal prices in a competitive environment. (It should be noted, however, that to the extent a marketer expects to incur bad debt in the future, she may consider its effect on the future cost of doing business.) One can also ask why more marketers have not entered the Georgia market, since they would have the advantage of lower costs from not having to recover past or current bad debt through their prices. Overall, in a competitive environment, incumbents would have limited ability to recover the costs associated with bad debt in their usage (e.g., per therm) charges.

A second explanation is that the wider gap may reveal increased market power held by marketers. Market concentration increased at the same time that the price-cost gap increased, suggesting that market power may have been a factor. The Commission staff performed a regression analysis showing a strong positive relationship between concentration and the price-cost gap. One must be cautious, however, in interpreting this result to infer that an increase in concentration would necessarily lead to more market power. Besides, it is hard to imagine that an increase in the HHI from over 2,400 to less

than 2,700, both numbers indicating a highly concentrated market, would have caused the margin to grow so dramatically. The Commission staff analysis could be interpreted to suggest that the increase in the HHI from January 2000 to September 2001 has resulted in an increase in the retail markup of over \$0.40 per therm. This is a significant and seemingly implausible increase, given the relatively small rise in market concentration. One could argue that the exercise of market power would have intensified, however, if other conditions changed in the Georgia market. For example, if the products of the various marketers became more differentiated, consumer search cost rose, consumer inertia increased, or collusion initiated during the period, the price-cost margin would have been expected to increase. Evidence shows that margins for the three major marketers all increased dramatically, and moved in parallel, during the past twelve months.

It is not so unusual for margins to fluctuate widely in commodity markets. Although in competitive markets normal profits are earned in the long run, they can rise above normal levels during periods of heightened demand or tight supply. One interpretation of this parallel movement in the margins across the three major marketers serving the Georgia market is that these marketers face the same cost conditions; thus, their costs and margins (as calculated) would be expected to move together. On the other hand, another possible explanation arises from the coordination of prices among marketers, for example, by way of tacit collusion over this period.

As a side point, price-cost margins are typically higher in those markets where firms offer differentiated products and services. If, in fact, it was the case that marketers were offering customers value-added services in addition to basic

gas service (commodity gas plus pipeline transportation), then a higher retail margin would be more understandable. But, if high retail margins are being earned by marketers for providing essentially basic gas service, then it is legitimate to ask whether Georgia gas consumers are receiving any benefits from deregulation. Consumers may have been better off if AGL remained a gas merchant in procuring basic commodity gas and pipeline transportation, for which it would have earned no or minimal markup over its costs.

Product Differentiation

Although the services offered by the different marketers seem to be highly homogeneous, some product differentiation exists; that is, gas delivered to the city gates in the Georgia market is highly fungible, but for retail services such as customer service, billing and contract provisions, consumers may perceive differences between marketers. Commonly, firms in differentiated product markets enjoy some economies of scale and face a downward sloping demand curve (i.e., firms are not pure price-takers). In equilibrium, prices lie above marginal cost, with firms holding some market power.

One possible example of product differentiation is the preference of many consumers for Georgia Natural because of its affiliation with AGL. Even though Georgia Natural may not actually offer any better service than the other marketers, consumers may perceive it differently and be willing to pay a higher price for its services. A "brand" marketer would be expected to enjoy an advantage over other marketers by having the ability to charge a high price

because of its differentiated service for which consumers are willing to pay more.

Marketers in the Georgia market have made varying efforts to market and advertise their services. NewPower, for example, has engaged in aggressive marketing and advertising to attract new customers. Energy America represents another marketer that has promoted itself through advertising.

Looking at the relationship between market shares and prices, it seems apparent that marketers' strategy for competing goes beyond pricing. Some marketers have been successful in increasing their market shares without offering the lowest prices. Even though all marketers are basically selling homogeneous city gate gas, they try to differentiate among themselves through other aspects of their service. Marketers may offer different commitments to customer service, rates, and choices of different services (e.g., price-risk management). Marketers also may offer various purchasing arrangements, including contracts promising a certain price for gas service if the customer commits to other services. Finally, marketers may offer different contract and payment terms, customer service hours, reputation and local presence, late-payment or contract penalties, and other services such as budget payment plans. All of these components of service can differentiate marketers in the eyes of consumers. In effect, through product and service differentiation, individual marketers can charge higher prices through the creation of "localized" market power.

SUMMARY

The Georgia deregulated retail gas market represents an unprecedented experiment in retail gas markets with all consumers having to select an unregulated marketer for city gate service – the local utility has no obligation to assume the role of supplier of last resort. Consumers have endured transitional pains as this market has undergone radical change. Whether consumers have had to pay higher prices because of market power underlies the focus of this report. In most markets, firms possess some degree of market power. In the vast majority of these markets, however, market power is not feared as a serious enough threat to warrant remedial action. Competitive pressures in these markets are presumably sufficiently robust to constrain prices and anti-competitive behavior.

Overall, the Georgia gas market does not pass the “safe harbor” criteria often used to screen markets where market power looms as a potential problem.

We cannot outrightly accept the premise that the market is highly or workably competitive and poses no market-power problem for consumers. To the contrary, the evidence compiled for this report supports depicting the Georgia gas market as a highly concentrated market with the potential for marketers to exercise market power. Over time, concentration has increased along with the fact that the market lacks a dynamism encouraging the entry of new marketers.

Aggravating these market conditions is the apparent lack of enthusiasm by consumers to actively search out the best deals from marketers. In a market where such characteristics prevail, some of which are conducive to collusive

behavior, firms may be able to exercise market power by charging prices higher than what would be expected under more competitive conditions. Whether prices reflect excessive market power or market power of a tolerable degree underlies the debate in most antitrust investigations. It is the essence of the major topic of study for this report as well.

The evidence presented here, not so surprisingly, makes no definitive conclusion on whether marketers have excessively exploited the market power that they most likely possess. Specifically, no conclusive evidence exists that marketers have engaged in anti-competitive behavior, either overtly or tacitly. Conditions may be ripe for collusion, but no conclusive evidence has been uncovered. But, this should not be interpreted to definitely conclude that no collusion exists. Instead, the most that can be said is that the characteristics of the Georgia market may be conducive to collusion, even though none has been detected in this study. With additional effort, and the collection of more data and other sources of information, a better assessment of the likelihood of collusion and other anti-competitive practices by marketers in the Georgia gas market could be made. Even then, it may not be certain that these practices would be detected if, in fact, they are occurring.