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INTERVENING IN MARKETS ON THE BASIS OF IMPERFECT
INFORMATION: A LEGAL AND ECONOMIC ANALYSIS

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A common justification for recent interventions in consumer markets which ban or require particular contract terms or require firms to disclose information is that consumers are imperfectly informed respecting the transactions they make.^{1/} It is generally recognized, however, that information is never perfect, and that the decision-maker's task is therefore to characterize, in terms of the need for intervention, real world states intermediate between perfect information and perfect ignorance. These decisions are now made in what can politely be described as an impressionistic fashion because lawyers have no rigorous tools for responding to information problems. In recent years, economists have developed a variety of models that begin to explain the behavior of markets characterized by imperfect information. These models,

however, have been almost inaccessible to lawyers because of their mathematical complexity. It is our aim in this paper to communicate to lawyers the insights relevant to law reform provided by the new "economics of information".^{2/}

This task is sufficiently complex to justify a precis. In Part I, we show that the normative objections to enforcing the contracts of imperfectly informed consumers largely disappear if those contracts are made in competitive markets. Thus a decision to intervene, either to regulate contract terms or to require disclosure, cannot be sustained by a showing that an appreciable number of consumers are uninformed; rather, the normative issue should be whether the existence of imperfect information has produced non-competitive prices and terms. Because a decisionmaker cannot resolve this issue without an understanding of how markets characterized by imperfect information behave, Part II next describes the behavior of such markets.

In Part III, we illustrate how the economic theory assists a decisionmaker in deciding whether the existence of imperfect information has caused a market to behave noncompetitively. Such an inquiry under the current state of the science would be expensive to conduct and impossible to answer precisely. Nevertheless, the theory generates criteria that will enable a decisionmaker now to determine in acceptably rigorous fashion whether information problems are sufficiently serious to justify an intervention. Part III concludes by setting forth these criteria. Part IV then relaxes two important assumptions on which the preceding argument partially rests, that the goods sold in any particular market are homogeneous, and that firms sell to all consumers under the same terms. Our object in Part IV is not to discuss the congeries of legal and economic problems raised by product heterogeneity and by firm discrimination among consumers, but only to show that the analysis of Parts I-III and the policy suggestions which follow

generally hold under realistic assumptions.

Finally, Part V discusses several interesting normative issues which interventions on the basis of imperfect information raise, and concludes by sketching out the argument's policy and institutional implications. Respecting these, the economics of information teaches that some methods of intervention are more likely to move markets toward competitive equilibria than others. It also suggests that courts, legislatures and administrative agencies have different capacities for responding effectively to information problems. Part V thus makes several substantive and institutional suggestions for law reform once it has been decided that information problems justify some form of state response.

Before beginning the analysis, we should stress its preliminary nature. We have two goals here, to show that information problems in consumer markets actually raise

the familiar but difficult issues of how the state can best ascertain and remedy market imperfections, and to offer some assistance in resolving these issues. Much more work remains to be done before the competitive state of markets can be characterized precisely, and the most effective remedies and remedial structures known with assurance. But it is past time to be moving in the right direction. Our paper should be viewed as an early signpost along this path.

I. The Relevance of Imperfect Information To
Legal Intervention

A. The Conventional Understanding

The existence of imperfect information is thought to justify legal intervention, according to conventional understanding, because a consumer cannot contract in his own best interests without the data to rank the purchase choices which markets offer.^{3/} This understanding implies that the question a decisionmaker should ask is whether each (i.e. an idealized) consumer is sufficiently informed to make purchase choices which maximize his own utility. For example, assume three firms sell a homogeneous product for \$2, \$3 and \$4. Mr. Jones pays \$4 because he is unaware of the lower prices. The existence of imperfect information prevented Jones from making the utility maximizing contract choice -- a purchase at the lowest price.^{4/} And any legal intervention should be designed to enable each individual Jones to make such a choice, or otherwise to protect each Jones from the

consequences of making nonutility maximizing choices.

The common methods of protecting Jones are to have the state determine his purchase terms or to reduce his costs of acquiring information.^{5/} Courts determine purchase terms by refusing to enforce particular contract clauses, and legislatures determine purchase terms by prohibiting some clauses and requiring others. Two justifications for determining purchase terms follow from the conventional analysis. First, if everyone has an identical preference ranking and a court or legislature knows better than market participants which purchase choices are consistent with this ranking, state determination of the terms will maximize each person's utility. Assume, for example, that all consumers prefer insurance against product caused injuries but are unable to understand the language of warranty disclaimers imposing on them the risk of these injuries. A state prohibition of such disclaimers would then be optimal.

Second, a standard objection to intervening in markets, that individuals know their preferences better than outsiders do, becomes untenable when individuals are uninformed, and decisionmakers in consequence should be less constrained in substituting their view of what constitutes a fair exchange for the outcomes reached by private agreements. As an illustration, some consumers, unaware of the legal and personal consequences of giving security, may mistakenly grant broad security interests when they would in fact prefer to pay high interest rates rather than bear the risk of harsh repossessions. In these circumstances, a court or legislature which believes that it is fair to limit the scope of security interests that consumers can grant^{6/} or to prevent repossessions without judicial process^{7/} should simply direct such outcomes; for the argument that the contracts to which consumers have agreed demonstrate contrary consumers preferences is factually incorrect.

Under the conventional view, however, the method of reducing information acquisition costs, other things equal, dominates the method of determining terms because reducing information costs best enables individuals to maximize their own utility. Since consumers seldom have identical preference rankings, external determination of terms would rarely be optimal. Also, if public decisionmakers should act on their preferences for "fair" outcomes only if consumers are uninformed, the state should initially attempt to create the conditions under which informed contract choices can be made. Because more consumers will become informed if information acquisition costs are reduced, reducing these costs is the preferable response to the problem of imperfect information.^{8/} Determining terms is therefore a "second best" solution, to be used primarily

by courts, for courts cannot create and police disclosure schemes. Consistent with this analysis, much of the consumer protection legislation of recent years requires firms to disclose information rather than contract on state supplied terms.

B. Difficulties With The Conventional Understanding And The Appropriate Role Of Imperfect Information

This conventional understanding respecting the relevance to the law of imperfect information suffers from two related difficulties: it is often nondirective respecting the methods of and the appropriate occasions for legal intervention, and it wrongly focuses on individuals rather than on the markets in which they purchase. Respecting the former difficulty, consumer information acquisition costs ("search costs") can be reduced in a variety of ways, all of which themselves impose costs on firms and consumers. The conventional view, however, generates

no criteria by which to decide which methods of reducing search costs are "better" or "more effective" or "cost justified". Thus legislatures must choose without guidance from among a congeries of potentially useful (and useless) regulations.

Further, the conventional analysis inadequately identifies when an intervention on the basis of imperfect information is necessary and whether a needed intervention should require disclosure or determine contract terms. The most convenient way to answer the question which the conventional analysis makes relevant -- whether the "typical" consumer has enough information to make utility maximizing purchase choices -- is to draw inferences from levels of information held by actual consumers as a class. This is easy to do in the case of polar extremes. For example, if scarcely anyone is in fact informed, the "typical" consumer cannot be expected to be informed,

but if almost everyone is (or can be made) informed, the typical consumer is (or through disclosure legislation will become) informed.

Decisionmakers actually encounter great difficulty in deciding whether the typical consumer has "enough" information, however, because the polar extremes of complete or incomplete information seldom occur. A significant number of informed consumers commonly exists in actual markets prior to legal interventions, and disclosure legislation doesn't inform everyone.^{9/} This suggests that "the facts" often do not illuminate the question which conventional analysis makes relevant. To perceive this difficulty more fully, consider whether a decisionmaker should find that the typical consumer could inform himself at reasonable cost if 30%, 45%, 60% or 75% of actual consumers

are (or could be made) informed. No current criterion directs a preference for any of these possibilities, except in so far as such a preference would follow from the presuppositions of a decisionmaker as to how much effort consumers should commit to informing themselves. Thus if the decisionmaker believes that people "ought" to work hard at making wise transactions, that 30% of persons presently know the facts demonstrates that the level of information is satisfactory because consumers can take care of themselves. Thus the conventional analysis, which attempts to decide the need for and character of interventions on the basis of imperfect information by reference to the percentage of actually or potentially informed consumers, often in practice can give decisionmakers no guidance. The conventional view, that is, cannot tell how much information is "enough".^{10/}

The second difficulty with the conventional view is that it mistakenly focuses on individuals rather

than on the markets in which these individuals purchase. To perceive the nature of this mistake, it is useful first to observe that consumers differ in their shopping behavior. Some consumers consult a variety of information sources, such as newspapers, friends and consumer periodicals, visit several stores before purchasing and plan purchases carefully over long time periods. Other consumers, however, consult few or no information sources, visit only the store of purchase and do not seriously plan. But a third group, apparently larger than the first two, engages in moderate search. ^{11/}

The presence of at least some consumer search in a market creates the possibility for what is called a "pecuniary externality"; persons who search, that is, sometimes can protect the nonsearchers from overreaching firms. ^{12/}This result can obtain because in mass transactions it is usually too expensive for firms to distinguish among extensive, moderate and nonsearchers,

and it would often be too expensive to draft different contracts for each of these groups if they could conveniently be identified. Thus, if enough searchers exist, firms have incentives both to compete for their business and to offer the nonsearchers the same terms which the searchers receive. If the preferences of searchers are positively correlated with the preferences of nonsearchers, competition among firms for searchers could then protect all consumers. ^{13/} Therefore, the conventional analysis asks the wrong question -- whether an idealized individual is sufficiently informed to maximize his own utility. The appropriate normative inquiry instead is whether competition among firms for particular groups of searchers is, in any given market, sufficient to generate prices and terms which are utility maximizing for the nonsearchers.

When the issue is so put, it is also possible to give decisionmakers more guidance in deciding when and how to intervene on the basis of imperfect information,

This is because the issue reduces to the roughly answerable question of whether the market in which a set of challenged contracts were made is behaving competitively. The competitive price is the lowest price a market can sustain and all consumers would, other things equal, prefer to purchase at the lowest price. Therefore, if enough searchers exist to generate a competitive price, all consumers who buy will make utility maximizing choices respecting price. To refer to the illustration above, if the competitive price were \$2 and all firms charged it, Jones' purchase would maximize his utility even though he bought at the first store he visited and did not know the prices of any other firms. In addition, because there is now no reason to believe that consumers who search differ widely in their preferences respecting purchase terms from consumers who do not search, competition among firms for the business of those consumers who are "term conscious" would probably generate

contract clauses which are utility maximizing for non-searchers.^{14/} Recent economic models provide some assistance in ascertaining when markets are behaving competitively in respect of prices and terms, and in devising methods of moving markets toward competitive equilibria. Therefore, it is to these models that we next turn.

Before doing so, some preliminary observations should be made. Under current contract and commercial law, the existence of imperfect information is a necessary but not a sufficient condition for legal intervention.^{15/} What is also required is that market outcomes be substantively unfair. The argument to this point, however, shows that imperfect information should constitute a sufficient ground for intervention (cost of intervention problems aside). This is because an intervention on information grounds should not be made unless a market is found to be behaving noncompetitively; and in our society supra

competitive prices or terms are generally considered to be substantively unfair. On the other hand, no consensus exists that the outcomes of competitive markets are always fair, and we take no position in this article on whether the state should regulate contract terms on grounds of substantive fairness when information problems are absent.^{16/}

II. The Behavior of Markets Under Imperfect Information

A. The Nature of the Analysis

The study of economic problems uses both optimizing and equilibrium techniques. The former technique focuses on individual actors. These actors are presumed to maximize or minimize some relevant measure -- individuals maximize utility, firms minimize costs -- and the economists' task is to characterize the optimization strategies actors pursue, and to describe the results for these actors of pursuing such strategies. Equilibrium analysis focuses on the interaction of economic agents in markets. Economists use it to characterize the outcomes markets are likely to generate when individual actors pursue particular optimization strategies.^{17/} Equilibrium analysis is essential when discussing information problems because the normative questions which should concern decisionmakers largely reduce to whether markets

are or can be made competitive.

In using equilibrium analysis, it is often helpful to model markets as games. The "players" are firms and consumers. Each player chooses an optimization strategy, such as to maximize profits or minimize purchase costs. "Solution concepts" then characterize the outcomes (equilibria) particular games generate when players pursue specified strategies. The solution concept most frequently used today is the "Nash equilibrium". A system is at a Nash equilibrium if each player would optimize by continuing to pursue his present course of conduct given that all other players continue to pursue their present strategies. In such a case, no player has an incentive to alter his strategy; the system is at an equilibrium. ^{18/}

This abstract description can be illuminated by a relatively simple example. Consumers in a purely com-

petitive market are presumed to have perfect information, face zero search costs, and desire to purchase at the lowest price. The only Nash equilibrium in such a market is at the competitive price. To establish this conclusion, we shall initially observe that a situation in which firms charged different prices could not be an equilibrium. A firm which quoted a price higher than that of other firms would have no customers, because consumers who knew the price each firm charged and who could costlessly travel from firm to firm would never buy at a price above the market minimum. The high price sellers thus would alter their strategy (by reducing prices to the market minimum or exiting) if the low price sellers continued to pursue their pricing strategies. Price dispersion therefore could not constitute a Nash equilibrium.

Moreover, the only single price which would be an equilibrium would be the competitive price. Assume the market had reached this price. No firm would have an

incentive to lower its price because the competitive price is at the minimum point of each firm's average cost curve and price cuts below this point would consequently yield losses. Nor would a firm have an incentive to raise its price -- if all other firms continued to charge the competitive price -- because this firm would have no customers. Perfectly informed consumers would purchase from its competitors.^{19/}

Part II B next describes models which illustrate Nash equilibria in markets characterized by imperfect information. These models, like the example just given, relate the optimization strategies of consumers and firms to the outcomes markets generate. Because there unfortunately is little hard data respecting how consumers and firm optimize under conditions of uncertainty, Part II B thus spends some time describing and analyzing the assumptions currently made respecting such optimization strategies.

B. The Behavior of Markets Characterized by Imperfect Information
1. Common Features of "Search Equilibrium Models"

The search equilibrium models discussed below^{20/} share several assumptions respecting firms, products and consumers. Firms maximize profits, but pursue relatively passive strategies. Each firm, that is, sets a price, charges this price to each consumer, waits to see who buys, and alters its price when this would increase profits. Firms, however, do not advertise. These firms all sell a homogeneous good on terms which differ, when they differ, only on price. We shall consider the probable effects of relaxing all of these assumptions later, but for now they are necessary to the analysis.^{21/}

Consumers, these models assume, are interested primarily in prices (the goods being homogeneous) and act to maximize expected utility. Each consumer before entering the market decides, on the basis of his income, tastes and alternative opportunities, what is the maximum or "limit" price he will pay. Search equilibrium models typically assume, for expositional convenience, that all consumers in a market have a common "limit price". This common limit price may be thought of as the monopoly price because it is the price a monopolist would charge were he confronted with a set of consumers who would pay this price but no more.^{22/} Finally, consumers become informed only by visiting firms; they do not read advertisements (formally there are no advertisements) or consult other information sources. The effect of relaxing this assumption also is considered below.

Because firms are assumed to maximize profits, a Nash equilibrium would occur only if no firm could increase profits by changing its price. A further important equilibrium condition of search models is that no firms desire to enter or exit the market. This is captured mathematically by assuming that in equilibrium all firms earn zero profits.

2. Sequential Search Models in Which Consumers Know the Price Distribution

Many early search models^{23/} assumed that consumers shop according to a sequential strategy. A consumer who uses this strategy visits firms in sequence according to the rule that search should continue until the marginal cost of further search is greater than or equal to the marginal gain (the gain being measured by the likelihood that an additional store visit will produce a lower price). The price for each consumer at which the marginal cost of further search just equals

the marginal gain is referred to as the consumer's "reservation price". It is the maximum price at which the consumer will purchase (provided that it is less than or equal to his limit price). Because the expected gain which each consumer perceives search to yield is a function of that consumer's estimate of the probability of finding various lower prices, the consumer's optimal search strategy cannot be characterized precisely without describing how the consumer incorporates his subjective view of the actual price distribution into the calculation of his reservation price. The optimization problem which characterizing such a strategy entails, however, presently cannot be solved if the consumer is assumed not to know the distribution of prices he faces. Thus search equilibrium models commonly make the very strong (i.e. very unrealistic) assumption that when consumers decide how much search to engage in, they know the overall price distribution but not the specific prices each firm charges.

A brief description of the single price equilibria which can obtain is sufficient to indicate the policy implications of models which assume that consumers searching sequentially know the true price distribution but not the identity of the firms charging the prices. Let all consumers face positive search costs. In these circumstances, the only equilibrium is at the common limit or monopoly price (P_L).^{24/} If the market were at a single price P_0 less than P_L , a firm could raise its price by some (perhaps small) amount without losing customers. A consumer in this case would compare the gain of purchasing from a competitor who continued to charge the lower "old" price with the cost of switching, and if the price rise

was made smaller than the cost to any consumer of switching, no consumer would switch. The only price at which this seller strategy fails is P_L , for a firm which charged more than the limit price would make no sales. Thus only the monopoly price can be a Nash equilibrium. At any lower price, a firm has an incentive to alter its strategy -- raise its price -- if other firms continue to pursue their strategy -- to charge the same price.

If the market were at the monopoly price, no firm would have an incentive to lower its price. Consumers, the models assume, learn a store's price only by visiting it. A consumer thus would not switch to the single price cutting firm because the probability of finding the one firm charging less than P_L , when many firms exist, is too low to make switching an optimal consumer strategy. Thus if the market price were at P_L , it would stay there^{25/}

The monopoly price would not be an equilibrium, however, if an appreciable number of consumers could search costlessly. In such a case, firms may increase profits by cutting prices or reduce profits by raising them. For example, were a market to reach the monopoly price, it would pay a given firm to cut prices; since consumers know the price distribution, they would realize that a price cutter exists, and those who could costlessly search would find and switch to this firm. As a firm could increase profits by cutting prices, the monopoly price could not be an equilibrium. Further, if a substantial number of consumers faced zero search costs, only the competitive price would be an equilibrium. Let the market be at a price less than P_L . Any firm which raised its price would lose those of its customers who could search costlessly, for they would switch to firms

whose prices had not changed. Thus if a large number of consumers faced zero search costs, it would never pay a firm to raise prices if its rivals had not raised their prices. And we have already seen that it would pay a firm to cut prices if its rivals failed to follow suit. The price cutting strategy only fails when the market is at the competitive price; at this point, each firm is operating at the point where price equals minimum average cost, so no further price cuts would occur. When a substantial portion of consumers face zero search costs, then, the only single price equilibrium a market can sustain is the competitive equilibrium because if the market reached the competitive price, no firm would have an incentive to charge more or less.^{26/}

This conclusion unfortunately seems useless to policy makers. In the real world, all consumers face positive search costs, and no legislative action could reduce anyone's costs to zero.

If we depart from pure theory, however, the analysis is suggestive of appropriate policies. Search equilibrium models commonly assume that sellers do not advertise.^{27/} Advertising, however, increases the chance that switching from firm to firm would be an optimal strategy for consumers to follow, and that price cuts would thus be optimal for firms. To understand this function of advertising, assume that a market were at the monopoly price. A firm then cuts its price and runs newspaper advertisements. As consumers in consequence could find this firm relatively cheaply, some of them may patronize it. Advertising thus tends to drive prices downward and thereby prevents the existence of monopoly equilibria. Because interventions to cure information problems are often expensive, these search equilibrium models therefore suggest that when price advertising is common, decision-makers should be cautious when deciding whether to intervene on the basis of imperfect information. A more

detailed discussion of this and other policy implications

is found in Parts III and V.

The models this section discusses have two significant limitations as guides to policy makers. First, the assumption that consumers know the true price distribution but not the identity of the firms charging each price is very strong. When a set of models has not been verified empirically and some of its specifications seem implausible, the conclusions it supports should be taken as suggestions to consider, not directions to follow. Second, no models which presuppose that consumers know the price distribution have plausibly characterized the conditions which can sustain multiple price equilibria. Real world markets, however, frequently are characterized by price dispersion. Thus the search equilibrium models this section describes often will give decisionmakers little help in evaluating actual market outcomes.

We thus turn to our own model^{28/} which makes seemingly

more plausible assumptions respecting how consumers search and what they know about the prices they face. This model in, consequence, is somewhat more helpful in answering the question whether particular real world price distributions are close to the competitive ideal. What is also encouraging is that it supports policy prescriptions similar to the ones to which the models just discussed lead, thus suggesting that these disparate theoretical analyses capture some essential features of market "reality".

3. A Fixed Sample Size Model When Consumers Do Not Know The Price Distribution

This model assumes that consumers are ignorant of the price distribution before they begin to search.^{29/} Economists generally suppose in this case that consumers

also use a pure sequential strategy.^{30/} A simple illustration captures the argument. Let all prices in a market cluster around a point. A consumer who follows a fixed sample size strategy will decide before shopping how many stores to visit. If he has decided on a sample of five, he will visit all five stores although, in this illustration, his search would quickly reveal little price diversity. A sequential searcher by contrast would probably stop searching after visiting only a few firms because he correctly infers that further search will reveal similar prices. The sequential searcher would purchase at the same price as the fixed sample size searcher, but at a lower cost (because he visits fewer stores). The sequential strategy thus dominates the fixed sample size strategy because it enables consumers to make better use of the information search reveals.

Recent analyses suggest, however, that consumers could rationally include nonsequential elements in their search strategies. Initially, consumers who search sequentially against an unknown price distribution may make more costly errors than consumers who keep to preset samples.^{31/} Sequential searchers can mistake the significance of a price similarity which initial store visits may reveal and stop searching too soon, or can mistake the significance of an initial price diversity and search longer than the actual price distribution warrants. On the other hand, consumers who stay within preset sample sizes seldom radically over or underinvest in search. Further, experiments suggest that consumers come much closer to obtaining the optimal payoff their strategies permit when they used fixed samples rather than search sequentially.^{32/} Risk averse consumers ignorant of the price distribution may therefore rationally incorporate fixed sample size elements into their search strategy;

for this is likely to produce "reasonable" prices, as measured by available market choices, with little risk of incurring excess costs. Also, some consumers search because they enjoy shopping. As a sequential strategy is useful only for minimizing search costs -- the sequence could end at one store visit if that visit reveals a very low price -- consumers who shop partly for pleasure may visit a preset number of stores. Finally, when fixed costs to search exist, visiting several stores may be optimal. For example, if a consumer's major expense is getting to the shopping district, he may choose to visit a preset number of stores when he arrives there because the more store visits he makes the lower becomes his cost of visiting each store.

Intuition, however, suggests that consumers in fact used mixed strategies. Because of the advantages of a fixed sample size strategy, especially when the price

distribution is unknown, consumers probably do create and intend to exhaust a preset sample of stores before purchasing. These samples, however, are flexible; a consumer who sees at the outset of his search a price which his impressionistic expectation suggests is a "bargain" may buy at that price, even though this means that he has not exhausted his sample.

All essential features of such a mixed strategy are captured in a model which assumes that consumers set and keep within preset samples, but that for some consumers the sample size is one while for other consumers it is greater than one. This is because if consumers actually follow mixed strategies, some of them, in any given market, can be expected to visit only one store while others are likely to visit more than one store. The evidence, moreover, is consistent with the existence of mixed strategies. In every market studied, a considerable percentage of consumers but not all visit two or more

stores.^{33/} Thus we make the weak (i.e. realistic) assumption that consumers pursue mixed strategies, which we capture with the mathematically convenient metaphor that consumers use a fixed sample size strategy with some samples equalling one.

The model also rests on two relatively weak assumptions respecting the way sample sizes are chosen: sample size varies inversely with the cost of search^{34/} and directly with the gains from search. These gains include the pleasure which shopping may bring and the lower prices it may reveal. Respecting the latter, because greater price or quality variation may exist for higher priced than for lower priced goods, more search -- the visiting of more stores -- should occur for such goods; and more search in fact occurs.^{35/}

Given all of the foregoing assumptions, the model yields three potential equilibria: (1) A single price equilibrium at the competitive price (although all consumers

face positive search costs); (2) A cluster of prices at the competitive price, with other prices spreading up to the monopoly price; (3) A continuous price distribution bounded on the upper end by the monopoly price. Which equilibrium obtains in any given market is a function of the number of consumers in that market who visit more than one firm, and the size of the samples these consumers set.

The explanation of the first equilibrium is similar to the explanations developed above. Let the market be at a single price "Po" greater than the competitive price "Pa". A given firm in these circumstances could increase profits if it lowered its price by some (perhaps small) amount. This firm would continue to get its share of those consumers who visit only one store, but it would also get every customer whose sample included two or more stores and who visited the price cutter; for such "comparison shoppers" buy at the lowest price they see. Because when some consumers comparison shop at least one firm could increase profits by undercutting Po, this price

could not be an equilibrium; a situation in which only P_0 is charged would be unstable. The price cutting strategy only fails at the competitive price because average costs then are minimized and further price cuts would be unprofitable. Thus when some consumers comparison shop, the only single price which could be an equilibrium would be P_a , the competitive price. Further, if the market reached P_a and many consumers were comparison shoppers, no firm could increase profits by raising its price. Such a firm would get only those consumers who visit one store; for consumers who visit two or more firms would not buy from the high price firm. In consequence, this firm could charge as much as P_L , but if too few nonshoppers exist, it still would earn no more (and perhaps less) profit than if it had continued to charge P_a . Therefore, when a sufficient number of consumers always visit more than one store, the competitive price is the only equilibrium.

This result differs from the result described above -- where a competitive equilibrium could not exist unless some consumers could search costlessly -- because some consumers in this model continue to search regardless of the price information which store visits reveal. Consumers probably consider the possibility of price variation in setting their samples. But the reasons which lead consumers to include nonsequential elements in their search strategies cause some consumers to visit all stores in these samples notwithstanding that they may continually see similar prices. Because some consumers always comparison shop, firms which cut prices could always be rewarded and firms which raise prices could always be punished. The extent to which the prospect of reward or punishment influences firm behavior depends on the ratio of comparison shoppers to the total number of shoppers in the market. If that ratio is sufficiently great, we have seen, the market will generate a competitive equilibrium.

If not enough comparison shoppers to support a

competitive equilibrium exist, but a substantial number of them are present, the market will sustain an equilibrium with a "mass point" -- a cluster of prices -- at the competitive price and a price spread up to P_L , the monopoly price. A mass point above P_a , the competitive price, could not exist for reasons similar to those just discussed; when many firms charge a single price above P_a , a given firm could increase profits by cutting its price. But a mass point can exist at P_a because it is the competitive price; firms whose prices are forced down to P_a would not find it profitable to charge prices below it. Not all firms, however, would be at this price. In this second case, enough consumers who visit only one store exist to make it profitable for some firms to "specialize" in selling to these uninformed consumers at supra competitive prices. The last result this model generates is that if a small number of consumers comparison shop, equilibrium entails a continuous price distribution.

The upper bound of the distribution is P_L , the monopoly price. Its range varies inversely with the number of comparison shoppers and their shopping intensities, so that, when very few consumers shop, prices will bunch up toward P_L .

The three outcomes of this model can be precisely characterized mathematically. Let A_1 = the number of consumers who visit only one store; A_n = the number of consumers who visit more than one store; n = the number of stores each comparison shopper visits; F = each firm's fixed costs (including a return on investment); s = the "capacity constraint", or level of output which minimizes average cost; P_L = the common limit price; \hat{p} = each firm's marginal cost. A competitive equilibrium can exist if

and only if $\frac{A_n}{A_1 + A_n} \geq 1 - \frac{F}{s(P_L - \hat{p})}$; an equilibrium

with a mass point at the competitive price can exist if

and only if $\frac{nA_n}{A_1 + nA_n} > \frac{F}{s(P_L - \hat{p})} > \frac{A_n}{A_1 + A_n}$; and a continuous

price distribution can exist if and only if $\frac{nA_n}{A_1 + nA_n} \leq 1 - \frac{F}{s(P_L - \hat{p})}$.

Because consumers visit firms to compare prices, this model suggests that if a market is not behaving competitively the state should consider methods of reducing the costs of comparison shopping in that market; for as those costs decline, n , A_n and in consequence the likelihood of competitive behavior should increase. Further, this model also does not incorporate advertising. But it suggests, as do the models described above, that advertising is quite useful in producing competitive behavior. A consumer who examines three advertisements has sampled three stores, at least as regards price. Finally, this model may be useful in state intervention decisions. All of these policy implications are discussed in greater detail in Parts III-V below.

III. Deciding When To Intervene: An Illustration and Its Implications

This section illustrates how the economic analysis can assist a decisionmaker in answering the relevant normative question, whether imperfect information has caused a market to behave noncompetitively. It will be useful

to begin by showing how a decisionmaker could in principle use the fixed sample size model to answer this question precisely. Assume that our hypothetical decisionmaker observes all prices in a market for electric clothes dryers to cluster around some point. The fixed sample size model suggests that the market is at a competitive equilibrium. The concept of a "cluster", however, is vague. The model also predicts that when few comparison shoppers exist, the price distribution will bunch toward the monopoly price. When market prices seem close to each other, therefore, the decisionmaker could be observing either the competitive outcome or an outcome approaching the monopoly price.

Let the highest observed price be \$450. The decisionmaker could sample consumers to ascertain their limit prices. If the sample mean is well above the highest observed price -- say it is \$700 -- the market is competitive. Because at least one seller who could charge the

monopoly price (P_L) would do so, \$450, the highest observed price, could not be P_L . But as the model allows for no mass points -- price clusters -- above the competitive price, the observed cluster must be the competitive price. If the sample mean, however, is in the neighborhood of the highest observed price, the decisionmaker would have to use the formula that a competitive equilibrium can obtain if and only if $\frac{A_n}{A_1 + A_n} \geq \frac{1 - F}{S(P_L - \hat{p})}$.

To illustrate how this could be done, we shall initially let $X = \frac{A_n}{A_1 + A_n}$. Then X is the ratio of comparison shoppers -- people who visit two or more stores -- to the total consumers in the market. If a market is competitive, a firm's price can be represented by the equation

$$p^* = \hat{p} + \frac{F}{S}$$

. Now let the decisionmaker observe a standard markup on variable costs in this market

of one hundred percent. Then $p^* = 2\hat{p}$. As $p^* = \hat{p} + \frac{F}{S}$, $\hat{p} = \frac{F}{S}$.

Substituting, $\frac{1 - F}{S(P_L - \hat{p})}$ becomes $1 - \frac{\hat{p}}{P_L - \hat{p}}$. Unless marginal cost rises steeply, average variable cost can

be a proxy for marginal cost, and it is easier to ascertain. Assume that the average variable cost observed was \$200 per dryer. Finally, the sample mean of limit prices, let us say, is \$500. Thus P_L (\$500) = $2.5\hat{p}$ ($2.5 \times \$200$). Substituting in the equation for X, we get $X \geq 1 - \frac{\hat{p}}{P_L - \hat{p}} \geq 1 - \frac{\hat{p}}{2.5\hat{p} - \hat{p}} \geq 1 - \frac{\hat{p}}{1.5\hat{p}} = .33$.^{36/} Thus if one third or more of the persons who purchase electric clothes dryers visit more than one store, the observed price distribution would cluster around the competitive price. Empirical evidence indicates, moreover, that fifty percent or more of the purchasers of items such as clothes dryers visit two or more stores before buying.^{37/} Since consumers can also obtain comparative price information by observing advertisements, this evidence actually understates the amount of comparison shopping which occurs.^{38/} Thus if the illustrative data respecting limit prices, markups and average variable cost are even approximately accurate, a decisionmaker who saw a cluster of prices in an electric clothes dryer market could conclude that the

market was competitive.

If the decisionmaker were instead to observe a cluster of prices with some prices well above it, his task would be easier. The fixed sample size model allows no mass points to occur except at the competitive price. Therefore, the decisionmaker would know that the cluster represented the competitive price. By comparing the number of prices in the cluster with the total number of prices obtaining, and their respective distances from the cluster, he could evaluate the competitive state of the market.

This exercise teaches several valuable lessons. Initially, despite the apparent precision of the analysis, the exercise shows that a real world decisionmaker would encounter great difficulty in precisely characterizing a market's competitive state. It would be quite difficult to ascertain limit prices accurately by sampling. The highest prices consumers report they would pay may differ

substantially from the highest prices they in fact would pay because consumers may weigh the costs and potential gains of purchases differently in hypothetical and real situations. Further, methodologically sound samples would have to be large, and for this and other reasons would be expensive to obtain.^{39/} Also, if a market contains firms which vary widely in size, the "representative" markup and average variable cost may not approximate reality closely. In addition, as Part IV shows, the existence of product heterogeneity and possible firm discrimination among consumers can greatly complicate the analysis. Finally, a decisionmaker would have to decide which firms whose prices he is observing are actually in the market that he is evaluating. The antitrust laws make the question of market definition germane, but experience there teaches that the question is also hard. To summarize, inexpensively obtained and precise answers to the question whether the existence of imperfect information has caused given markets to behave noncompetitively will seldom be

available in real cases.

The illustration of how a hypothetical decision-maker could apply the fixed sample size model nevertheless demonstrates that markets are likely to be much better behaved in the face of imperfect information than is commonly supposed. Under relatively plausible assumptions respecting costs and consumer preferences, that illustration showed that a market may behave competitively if as many as two thirds of the consumers in it only know the prices they themselves pay. And if fewer consumers than these are informed, the same assumptions would support a conclusion that many firms are still charging the competitive price. Thus the fixed sample size model, as well as the sequential search models discussed earlier, suggest that decisionmakers should be cautious in imposing expensive disclosure requirements and that close cases should be resolved against intervention.

The analysis in Part II and the illustration just set forth are also useful to actual decisionmakers because they suggest that certain facts are more consistent with the presence of competitive behavior than with its absence. These facts are:

(a) , If prices cluster, a market is likely to be at a competitive or a monopolistic equilibrium. A price cluster accompanied by the presence of a substantial number of comparison shoppers (for example, one third or more of total consumers in that market) is more consistent with the former outcome.

(b) A price cluster with a few prices above it is also more consistent with a competitive outcome than a monopoly outcome.

(c) If price advertising is common, a market is unlikely to be at a monopoly equilibrium; the "best case" for intervention cannot then be made. This conclusion is suggested by the sequential search models discussed above. To illustrate the point,

assume that prices had clustered around the monopoly price, advertising is common and consumers often observe two or more ads. In these circumstances, a firm could increase profits by cutting its price and advertising the cut. Because the firm was already advertising, the marginal cost of communicating information about the price cut would be small, and because some consumers would observe the contrast between this price and others, the firm's business would increase. The monopoly price thus would not be an equilibrium. The fixed sample size model also implies that the presence of price advertising correlates positively with the absence of a monopoly equilibrium, since such advertising reduces the costs of comparison shopping.

(d) If comparison shopping is convenient, the likelihood of a competitive equilibrium obtaining is enhanced. The costs of such shopping vary inversely with the costs of making comparisons.

And these latter costs will be lower if the methods of quoting prices or commonly used terms are standardized, because it is easier to compare like things

and because consumers can use the knowledge obtained about prices and terms in one transaction conveniently to understand others. Thus if prices and terms in a market are quoted in standard and relatively clear fashion, the market, other things equal, is more likely than not to be competitive.

(e) As is implicit in the foregoing analysis, and as Part IV next makes clear, competition is more likely when sellers cannot conveniently discriminate among consumers on the basis of relative knowledge or sophistication.

Therefore, a decisionmaker observing a market in which price advertising is common, prices cluster, comparison shopping seems relatively inexpensive and firm discrimination among consumers is quite difficult to practice should conclude that no information problems exist.

An illustrative application of these criteria may be drawn from one of the few markets for which data

exists, the market for financing consumer purchases of new cars. A state by state survey of finance charges revealed that the median range between the lowest and highest annual percentage rates ("APR") quoted for financing cars varied from 2% in the lowest variance state to 7% in the highest variance state, with 5% being the most common state figure.^{40/} A more recent but less extensive survey suggested that the 2% range is becoming common.^{41/} Thus prices cluster in this market. Also, an appreciable number of consumers apparently do search. Another study reported that of the consumers who purchased cars and household durables on credit because they lacked the resources to make cash purchases, 30% and 20%, respectively, consulted alternative credit sources. Because this measure did not consider search within source types -- how many banks visited -- the authors suggest that it "may have significantly underestimated the amount of search."^{42/} Further, prices are quoted in a fashion which facilitates comparisons -- the

APR. Respecting the two other criteria, price advertising in local markets does not seem uncommon, and while there are sometimes allegations of discrimination,^{43/} finance rates seem generally to segment along risk lines. All of this suggests, in the absence of hard contrary data, that the auto loan market is presently competitive as regards price, and that such regulations as usury laws are unnecessary. This method of analysis, it must be admitted, is plainly rough, but it is focused on the right issue -- how markets behave; it is grounded in rigorous theory; it is easily as precise as inquiries currently conducted in similar fields, such as antitrust,^{44/} and as our understanding of how markets behave under conditions of imperfect information deepens, it can be made more precise still.^{45/}

IV. Deciding When To Intervene Under Relaxed Assumptions: Further Implications and Limitations

Search equilibrium models make two relatively strong

assumptions: (1) Goods are homogeneous; (2) Firms do not discriminate among consumers on the basis of knowledge or sophistication. In Part IV, we discuss the implications of relaxing these assumptions for the decision to intervene.

A. Quality and Term Heterogeneity

There is a common taxonomy of product heterogeneity: products are either "search" or "experience" goods.^{46/} A search good is one whose salient characteristics the consumer can learn before purchase (by direct observation); an experience good is one whose salient characteristics can only be learned after purchase (by actual use). Price and terms, in this lexicon, are search characteristics because the consumer can learn of them before buying while some aspects of performance -- automobile seat comfort during a long drive -- are experience characteristics because they can only be learned through use. It will be helpful to discuss search and experience goods separately.

1. Search Goods Generally

The fixed sample size model in principle applies to markets of heterogeneous search goods because such markets are usually decomposable into roughly homogeneous subsets. Consider, for example, a radio sold in two and three knob versions. Whether each version is priced competitively is again largely a function of the ratio of comparison shoppers to total shoppers for that version. However, goods can differ along several quality dimensions. The two knob version thus may be more durable but less precise than the three knob version. If products nevertheless segment into classes recognizable both to consumers and firms and if consumers primarily shop within quality classes, the effect of imperfect information on the state of competition in each class can be examined in the rough manner we have described. Products, moreover, often do segment in this way: beers are premium or ordinary, wines estate bottled or commune, cars compact or full size. And

consumers do seem primarily to search within quality classes.^{47/} In markets of heterogeneous search goods, therefore, investigations of the state of competition would be more costly and less exact than in markets where homogeneity prevails, but the criteria developed above would nevertheless be helpful.

2. Contract Terms

The discussion to this point has implicitly assumed that a market (or market subset) which is competitive on price is also competitive in respect of purchase terms. This assumption may be too strong. To perceive this, let all firms insert in their sales contracts a particular term -- say an acceleration clause^{48/} -- which can impose substantial costs on consumers. Firms, however, "conceal" this term by using fine print and complex legal language. In these circumstances, the "true" price to consumers exceeds the nominal, purchase price, but consumers may respond only to this latter price. If enough consumers

comparison shop, the market would reach equilibrium at the nominal, competitive price. Consumers, however, would suffer a welfare loss; they would be paying a higher "true" price than they would have paid if the clause at issue were "disclosed", for the nominal, competitive price does not reflect the costs the term shifts to consumers. We have so far neglected this problem because we assume that when a sufficient number of consumers comparison shop to generate a competitive price equilibrium, enough consumers would be "term conscious" to prevent the market from reaching a monopoly equilibrium for important terms. Put another way, if enough consumers comparison shop to make it profitable for firms to compete on price and quality, firms also are likely to compete on terms. This justification for equating terms with prices is of course unavailing if a particular market is not a competitive equilibrium on price. But then intervening to produce enough comparison shopping so that a competitive price equilibrium obtains

should resolve the term problem.

The equation of term competition with price competition nevertheless is not completely satisfactory because the overlap between consumers conscious of price and quality and those conscious of terms may be imperfect. This lack of correspondence may result from differences in taste -- some persons simply dislike learning about their contracts -- and from differences in cost. Evaluating terms is more costly than evaluating prices or search characteristics such as color, size or fit; some comparison shoppers in consequence may devote little time to examining terms. Further, in the absence of formal analysis (which we plan later to make) it cannot be said that term competition occurs in precisely the same way as price competition.

These difficulties suggest that additional criteria are required to guide the decision to intervene when terms are at issue. A monopoly equilibrium provides the best case for an intervention; and it occurs when firms do not

compete to give consumers better terms, but instead are aware of consumer ignorance and actively exploit it so that firms get the most favorable terms possible given consumers' tastes, resources and alternative opportunities.^{49/} A market can be considered monopolistic^{50/} for any term which all or almost all firms use if the following criteria are satisfied: (1) The market is not price competitive. Because it is more costly for consumers to search for terms than for prices or some aspects of quality, if too few price searchers exist to generate a competitive (or almost competitive) price structure, too few term searchers may exist to generate a non-monopolistic term structure; (2) Following the fourth criterion developed above, the term at issue always appears in arcane legal language and fine or otherwise inconspicuous print. If the market is price competitive but the second criterion is met, a monopolistic outcome

for any term should be presumed to occur if a substantial portion (more than one third) of the comparison shoppers are not "term conscious." Basing a finding of monopoly on a much lower percentage of uninformed consumers than this may lead to serious errors because in our view it seems unlikely that markets which are competitive on price would be monopolistic on terms.

3. Experience Goods

Search equilibrium models assume that consumers can evaluate all relevant aspects of a product before purchase; the equilibria these models characterize relate to known characteristics, particularly the price. As consumers cannot evaluate experience characteristics before purchase, the models thus appear to say little about markets for experience goods. This, however, understates the utility of the analysis. Markets for some experience goods behave as if they were markets for search goods and the markets for many other experience

goods are unlikely to work in fundamentally different ways.

Respecting the former, experience goods can be distinguished by frequency of purchase. A consumer wanting to buy milk, for example, can become familiar with the experience aspects -- taste and texture -- of different brands in less than a week. Therefore, frequently purchased experience goods in fact are search goods in that consumers know (or can quickly learn) all aspects of quality before purchase. Decisionmakers can ascertain the competitive state of such markets in the fashion previously described.

Current search equilibrium models, however, are at best suggestive of the conditions associated with competitive equilibria in markets for infrequently purchased experience goods. Such equilibria are likely to be largely functions of the ratio of knowledgeable consumers to total consumers in a market, and an appropriate way for the state

to facilitate their occurrence probably is to reduce the costs of comparison shopping. But until the understanding of experience goods advances, search equilibrium models will shed relatively little light on the question when interventions in experience goods markets on the basis of imperfect information are justified.

B. Discrimination Among Consumers

Our model assumed that each firm charged the same price and provided the same quality to all of its customers. Thus when firms competed for the business of comparison shoppers, nonsearchers necessarily were benefited. But if firms discriminate among customers on the bases of knowledge or sophistication, this pecuniary externality would vanish; firms would "exploit" nonsearchers by charging them higher prices or providing them with lower quality than would be offered to comparison shoppers. It will be useful, in discussing this possibility, to distinguish between "mass" and "individ-

ualized" transactions. In the former, firms cannot conveniently learn the characteristics of individual consumers. The efficiencies of mass transactions lie in the existence of a very high ratio of customers to sales persons and in such transactions being conducted rapidly. Retail sales of relatively low priced items afford the best illustration. "Individualized" transactions are characterized by considerable personal contact between firm representatives and customers and commonly involve bargaining over price and product "features". The paradigm is the sale of a new car.

1. Mass Transactions

In mass transactions, discrimination by individual firms among their customers seldom occurs because firms cannot conveniently obtain the information to practice it. To explain how this "information gap" precludes discrimination, we shall initially show that while markets may segment by quality level, individual firms

will sell products at prices which accurately reflect their quality differences. Let consumers be divided into two classes, sophisticated (Class "A") and unsophisticated (Class "B"). A sophisticated consumer can discern a difference in quality between two seemingly identical products. Two versions of the product are sold in the market, high quality ("X") and low quality ("Y"), but both versions would appear identical to the ignorant eye. Firms purchase these versions at prices which reflect their quality attributes. If firms could distinguish Class A consumers (sophisticated) from Class B consumers (unsophisticated), they would sell X goods (high quality) to the former and Y goods (low quality) to the latter, for the same price. This would maximize profits because Y goods cost firms less than X goods.

Sophisticated and unsophisticated consumers, however, look very much alike, and in mass transactions the costs to firms of examining consumers to ascertain

into which class they fall would exceed the gains. In these circumstances, an apparently profitable strategy would be for firms to let consumers sort themselves out by their purchases. Each firm could put a mix of X and Y goods on the shelf so that Class A consumers would buy the former and Class B consumers the latter.

Such a strategy would fail if an appreciable number of sophisticated consumers existed because unsophisticated consumers sometimes would luckily purchase X goods. The A consumers would only buy these goods, but B consumers would buy both X and Y goods because they cannot distinguish between them. Thus each firm would have to set out more X goods than it has A customers; otherwise its B customers would purchase some of the goods intended for the A customers, thereby causing these persons to switch to other firms. Setting out somewhat more X goods than there are A customers, however, would create an unstable situation because

the higher the ratio of X goods to Y goods the more often would B customers purchase X goods. Thus each firm would face a constant pressure to increase the ratio of X goods to Y goods.

A numerical example illustrates how this pressure would work. Let a firm have 100 customers half of which are A's (sophisticated) and half B's (unsophisticated). The firm initially stocks 100 widgets, 50 of which are X and 50 Y. The demand for good widgets (D_x) = 50 (by A's) + 25 (by B's). All A's of course demand X widgets. But B's demand 25 X widgets because if a B consumer cannot distinguish X's from Y's and 50% X's and 50% Y's are present, the B consumer will choose an X widget 50% of the time. Thus in this example the firm sets out 50 X widgets but has a demand for 75 X widgets. Let the firm next set out 75 X widgets and 25 Y widgets. $D_x = 50$ (by A's) + 36.5 (by B's). Once again, if there are 75% good widgets, unsophisticated

consumers will choose a good widget 75% of the time. Thus although there now are 25 more X widgets than A customers, the demand for X widgets has risen from 75 to 86.5. Again, the firm is understocked. The outcome of this is that firms would specialize by quality level, some firms, as in this illustration, selling only X goods, others only Y goods, at different prices. The class into which a particular firm would fall would be determined by the percentage of knowledgeable customers it has, the market price and the cost difference to the firm of purchasing good and bad versions of the product.

Decisionmakers in consequence could examine the effect of imperfect information on the prices of X and Y goods in the fashion we have previously described. Thus the possibility of discrimination in quality levels does not add very much additional complexity to the (already complicated) analysis of mass transaction markets characterized by imperfect information.

This model also shows that individual firms generally would not discriminate among customers by price or terms. Let Class A consumers be comparison shoppers and Class B consumers only visit one firm. Because firms cannot distinguish in this respect among consumers they will offer each consumer the same contract package. In transactions commonly recognized as "mass", moreover, each firm commonly does sell goods or services at the same price and under the same terms to all its customers.^{51/} Whether this is a competitive package or one above it depends, we have seen, on the ratio of comparison shoppers to total shoppers in the market.

2. Individualized Transactions

In individualized transactions, where firm representatives spend a relatively large amount of time with customers and in consequence can get to know them, firms apparently can discriminate in price and quality without

incurring excessive costs. Ascertaining the existence of such discrimination, however, would be very difficult, largely because of the prohibitive cost of establishing actual transaction prices or quality differences among goods sold at similar prices. Thus the question for decisionmakers apparently is whether particular circumstances make discrimination likely. Once more, the probability of discrimination appears largely to be a function of the ratio of knowledgeable consumers to total consumers in a given market. The more consumers who are knowledgeable about the price and quality differences among new cars, for example, the lower the inducement to a dealer to invest resources in ascertaining and acting upon differences in consumer awareness levels, even though here the circumstances more easily permit such activities.

In markets in which discrimination is possible -- cars, expensive stereo equipment -- some consumers, perhaps because they are aware of the difficulty of ascer-

taining quality, are willing to purchase information which classifies products by performance and price. In consequence, periodicals devoted exclusively or partially to rating cars and stereos are quite common. The large amount of available information in these markets, in comparison to many other markets suggests that the ratio of knowledgeable consumers to total consumers of cars and stereos may be high enough so that discrimination is not a serious problem. The very sparse and inconclusive empirical evidence is also consistent with this perception. ^{52/}

Nevertheless, discrimination is a potentially serious concern. Search equilibrium models shed relatively little light on the question when discrimination is being practiced and what remedies are appropriate. Further, the remedy question raises issues which are beyond our scope. As an illustration, a way to prevent price discrimination in particular markets

is to require firms to charge all consumers the same price. Whether the welfare gains such a policy would confer on unsophisticated consumers would exceed the welfare losses to sophisticated consumers and firms as well as the costs of enforcing the policy is an issue we make no attempt here to resolve. Thus the analysis of this paper should be taken not to apply to individualized transactions, except insofar as it suggests that discrimination in such transactions does not now seem to be a serious problem.

V. Normative Issues and Policy Implications

A. Normative Issues

Once it has been found that a market is behaving noncompetitively because too few consumers are informed, the initial choice a decisionmaker faces is whether to regulate the substantive transaction or to attempt to move the market toward a competitive equilibrium. We shall assume that regulation would involve ordering firms to reduce monopoly prices^{53/} or excise from their contracts monopoly terms. Moving a market toward (or to) a competitive equilibrium is preferable to such regulation, other things equal, for three reasons. First, regulation is unlikely to be effective because firms can exploit in numerous ways the bargaining power which the lack of comparison shoppers confers on them. As an example, if a court banned the use of a particular term, firms could preserve their monopoly power by switching to other terms which also shift costs to consumers. This strategy

would probably be effective because if too few consumers comparison shopped to generate a nonmonopolistic equilibrium respecting the term which firms initially used, it is unlikely that enough consumers would comparison shop to ensure a nonmonopolistic equilibrium for the terms which firms substituted for the prohibited one.

A second ground for eschewing regulation is that it would not be optimal if consumers could conveniently be informed. Consumers who knowingly prefer higher prices to "harsh" terms would pay these prices whether harsh terms were permitted or not, while a ban of terms would require consumers who prefer lower prices to pay higher ones and a limit on prices would require consumers who knowingly prefer to pay higher prices to take instead harsh terms.^{54/}

Finally, seeming monopoly equilibria sometimes are unstable. For example, the standard automobile

warranty in use in the late 1950's always appeared in arcane legal language and fine print, and apparently neither firms nor other institutions otherwise informed consumers of the nature of the risks they were bearing. Yet the industry began to compete extensively on warranty coverage in the 1960's, and continues to compete in this area today.^{55/} Were the state to have required automobile warranties to contain certain terms but not others, it might have prevented the emergence of this competitive behavior.^{56/}

For these reasons, the preferable state response when imperfect information has caused a market to behave noncompetitively is to move the market toward a competitive equilibrium. Promising methods of achieving this goal, we shall next see, would reduce the costs to consumers of comparison shopping. Before discussing these

methods, however, it will be useful to reevaluate a crucial premise of the argument so far, that an intervention which would reduce the costs to consumers of becoming informed -- termed here "required disclosure" -- is not justified if the market at issue is competitive. Such an intervention, we assume, is unnecessary because a property of competitive markets is to generate prices and terms that are utility maximizing for all consumers. An efficiency argument and two fairness arguments nevertheless might be made to justify required disclosure in competitive markets.

The efficiency argument begins with the plausible assumption that although a market is competitive, the state nevertheless could reduce the costs of comparison shopping (for example, by requiring firms to quote prices in standard fashion). Such an intervention would raise each firm's average cost curve and in consequence would require all consumers to pay higher prices. But

if the net gains the intervention could generate for the comparison shoppers (reduced search costs minus higher prices) would exceed the losses to nonshoppers (who would have no gains because they do not shop but who nevertheless would pay the higher prices) and the costs of administering the law, the intervention would be optimal.

It would be almost impossible, however, for an actual decisionmaker to make this "utility calculus", largely because the relevant facts would be too expensive to collect. Further, no theoretical reason exists to believe that required disclosure in competitive markets would usually produce greater welfare gains than losses. And if one were to speculate about the facts, such an outcome seems unlikely given the expense of administering disclosure legislation. Therefore, it seems wiser to limit efficiency motivated interventions to the case of noncompetitive markets.

A fairness argument that required disclosure should be imposed in competitive markets stems from the premise that persons "should be" relieved from the chore of shopping; thus an intervention which reduces search costs is desirable in virtue of this effect alone. However, while such an intervention would increase the leisure time of shoppers, it would also impose costs on nonshoppers and the state. Thus this justification for required disclosure is unpersuasive unless a further argument exists to justify making shoppers wealthier at the expense of other consumers. The only argument which seems germane is that the comparison shoppers generated the competitive equilibrium, which benefitted all consumers, and thus deserve compensation. But this case for compensation dissolves under analysis. One justification for making a set of persons -- here shoppers -- wealthier is to encourage them to take socially desirable actions.^{57/} The comparison shoppers, however, are already doing what they are "supposed to" be doing -- helping

maintain a competitive market--so it is unnecessary to pay them. A second possible ground for increasing the wealth of comparison shoppers is that they are worthier than nonshoppers. But it is difficult to perceive the basis for this claim. Such persons shop because the private gains to them from shopping exceed the costs. No prevalent ethical scheme justifies making them better off at the expense of other persons because they act from this motive. And no other indicia of greater worthiness appear germane. Thus this fairness argument, that shopping is a burden which the state should always attempt to lighten, must be rejected.

A perhaps more persuasive argument is that disclosure legislation increases the opportunity for consumers to participate in market transactions, and in consequence makes those transactions seem fair. Some consumers, this argument runs, may realize that they are agreeing to contracts under conditions of imperfect information because they find

the costs of becoming informed to be prohibitive. If these consumers later become dissatisfied with their deals, they may find unpersuasive the response that a competitive market protected them against overreaching by firms; the choices of those of their fellow citizens who comparison shopped, they will say, are not as good a guarantor of fair terms as their own informed choices would have been, yet the circumstances under which such choices could have been made--i.e. the existence of low search costs--were absent. This claim of unfairness would be much less tenable, however, if the state had taken obvious steps to insure that the relevant information was readily available. In those circumstances, every consumer would (or should) realize that society had seriously attempted to increase the opportunity of consumers to affect their own transactions. Because it is important that persons have faith in the fairness of social institutions, the state should therefore make obvious efforts to increase market participation by reducing search costs in all

markets, not just noncompetitive ones. ^{58/}

Although this fairness argument has some merit, it seems a weak support for required disclosure in competitive markets. Initially, the claim is not obviously more compelling than a corrolary fairness claim of the comparison shoppers. If a market is competitive, a substantial number of consumers must have found it convenient to inform themselves. Such consumers might find it unfair to be compelled to pay higher prices because other consumers could (or would) later repent of their choices to consume leisure or engage in work rather than search. No reason appears to subordinate this fairness claim of comparison shoppers to the fairness claim of the nonsearchers. And if the fairness issue is indeterminate, the administrative costs of required disclosure count strongly against intervention. Also, the nonsearchers' fairness claim may often be dissipated by debate; the consumers who make it, that

is, may be persuaded to change their views when they become aware of the ratio of costs to gains which interventions in competitive markets commonly generate. Finally, this fairness argument only justifies interventions when consumer dissatisfaction is widespread and apparent; for given the costs of intervening, it seems erroneous merely to presume that many consumers believe the market game to be unfair. For all of these reasons, our premise that required disclosure should only be imposed in noncompetitive markets, as best as these can be determined, seems generally valid.

B. Policy Recommendations

1. Removing Legal Restraints

Before discussing affirmative steps to improve the competitive behavior of markets, we should describe a set of solutions which responds both to the difficulty of establishing noncompetitive behavior and the possibility

of its occurrence -- the removal of legal barriers which may prevent the attainment of competitive equilibria. Three methods of pursuing a strategy of letting markets work seem promising. First, restrictions on nonfraudulent advertising should be removed.^{59/} The models which Part II described show that advertising is useful in preventing the existence of monopolistic equilibria and in moving markets toward competitive equilibria. This result is consistent with, and helps explain, evidence that prices are higher when advertising is prohibited than when it is allowed.^{60/} Thus prohibitions or restrictions on the advertising of the prices and contract terms of particular goods or services, or restrictions on advertising in particular media, can reduce consumer welfare, in the sense of causing consumers to pay higher prices.

Courts also should not regard the use by a seller of a standard form contract as a factor which militates

against enforcement of this contract if its method of quoting the terms at issue is similar to the methods commonly used for quoting terms of this kind. The fixed sample size model showed that a market is more likely to behave competitively if many consumers comparison shopped and if comparison shoppers visited a relatively large number of stores. We have also seen that if firms standardize the way in which prices and terms are quoted, the cost of comparison shopping is lessened. If a firm's chances of enforcing its contracts are reduced because those contracts are standardized, however, the costs of private, voluntary standardization will rise. And less of it could take place. Therefore, that a particular contract is cast in standard form should no longer militate against enforcing it.^{61/}

Finally, the government should consider relaxing the antitrust laws to permit more voluntary standardization of the fashion in which contract prices and terms

are quoted. It is commonly said that the threat of anti-trust prosecution inhibits such private standardization.^{62/} Because standardization increases the likelihood of markets behaving competitively, the threat apparently should be eliminated. This is not to say that the government should view benignly agreements by firms always to use the same terms, but only to suggest the social desirability of agreements that if a particular term is used, it is always to be set out in standard fashion. Even so, relaxing the antitrust laws is a proposal which deserves much more consideration than we give it here. The objection to it is that firms may fix prices under the guise of standardizing contracts, or find it easier to police violators of cartel rules. But as standardization itself conduces to competitive outcomes, reducing the costs of standardization in this fashion should be seriously explored.

2. Affirmative Responses When Markets Are Found to Behave Noncompetitively

In this section, we discuss promising methods of moving markets which have been found to be behaving noncompetitively toward competitive

equilibria. The analysis is suggestive rather than directive, however, because the wisdom of a particular legal initiative turns on a comparison of its costs and gains, and these cannot be assessed without an exploration of the specific contexts in which the initiative will operate. As an example, a decisionmaker should attempt to compare the welfare gains an intervention may produce by moving a market closer to the competitive outcome with the costs to the state of administering and to the parties of complying with the new legal requirement. Also, interventions may produce undesirable "second order effects", such as channelling competition in a particular market along those quality or term dimensions firms may be required to disclose.^{63/} Comparing possible welfare gains and administrative costs and analyzing the likelihood of second order effects are beyond our scope. We therefore are interested here primarily in raising issues for serious exploration.

The most promising method of making markets behave competitively is to provide consumers with comparative price and term information. If consumers, for example, could cheaply obtain a list of all prices in a market (or just the lower ones) together with the identity of

the firms charging the prices, the likelihood of competitive equilibria obtaining would be much enhanced. The experimental evidence also suggests that making comparative price data conveniently available reduces consumer purchase costs.^{64/} Private firms, however, seldom sell such information, apparently because they could not fully appropriate the value of the information produced. Once a firm created a price list, it would have great difficulty preventing other firms and consumers from using the information it revealed without paying for it. A consumer who bought such a list, for example, might freely distribute it to his friends. Thus private firms underinvest in the production of such information.^{65/} Government agencies, however, could themselves produce and distribute comparative price data or subsidize firms to do so, and recent suggestions have been made that they should engage in these activities.^{66/}

Three objections to a comparative price information program are likely to be made. First, it could actually raise prices; second, consumers would not absorb the information; and third, the information would be too expensive to provide. Respecting the first objection, if

firms were prevented from charging prices above the prices they supplied to the listing agency, they might quote higher prices than they would otherwise charge. This may be because firms anticipate cost increases or because they merely want to preserve flexibility. Both of these motivations could be partly assuaged by publishing price lists frequently -- i.e. once a week -- but the more frequent the list, the more costly is the program to administer. This objection, however, illustrates anew the wisdom of attempting to confine interventions to the case of noncompetitive markets. In such cases, prices are already too high; and price lists are likely to generate lower (although perhaps not competitive) prices than would obtain if nothing were done.

The objection that consumers would not absorb the data such lists would contain stems from the concept, in apparent vogue, of "information overload." This concept asserts that when consumers are provided with too much information they make dysfunctional decisions; the circuits become overloaded, as it were.^{67/} Evidence from laboratory experiments, however, fails to support the existence of this phenomenon. That evidence

shows that more information enables consumers to make better purchase decisions than they would make were they uninformed, with a "better" purchase decision defined as one which yields an outcome that more closely approximates a consumer's actual preferences.^{68/} This is not to say that the information overload phenomenon could never occur, but instead that it has not been verified under experimental conditions in which a good deal of information has been provided. Further, no one can now predict when consumers will "overload" in real world situations. Thus that information overload may occur if "too much" information is provided is an observation of little relevance to decisionmakers. Consumers could decide that the potential gains from absorbing new information would exceed the costs. But given the potential savings that the provision of comparative price and term information could yield, assertions that such information would not be used seem premature.

The administrative costs of a comparative price information program, however, could exceed the welfare gains. It would be expensive to create and maintain price gathering

and promulgating agencies, to identify the firms and products which should be included on each list -- Los Angeles consumers may care little about Anaheim prices -- and to police firms to ensure that transaction prices are not significantly higher than the prices firms provide to the listing agency. Nevertheless, because providing consumers with inexpensive comparative price data would be so useful in moving markets toward competitive equilibria, it is a reform which should be seriously explored.^{69/}

For the reasons given above, the state should also consider requiring firms to standardize methods of quoting prices and widely used terms. In fact, standardization is one of the solutions which modern disclosure law sometimes adopts.^{70/} If prices and terms are required to be disclosed in standard form, however, the total amount of information firms put out could be reduced. The required standard form is likely to be concise, yet regulators may frown on the provision of additional information on the ground that it reduces the effect of or confuses the required disclosure.

Further, a standardization requirement is likely to engender much litigation, particularly in the period shortly after it is imposed. It seems always to take some time -- in the case of Truth in Lending a long time -- until courts and the enforcement agency are in even rough agreement as to the standardization requirements.^{71/}

These difficulties are set out not to discredit the standardization method but to emphasize again the justification for attempting to intervene only in noncompetitive markets.

3. Institutional Implications

Our analysis suggests that courts should play a more limited role in responding to information problems than they now do, and it confirms the wisdom of the recent trend to place greater reliance on administrative enforcement. The unconscionability doctrine authorizes a court not to enforce a price or contract term if the price or term is both substantively and nonsubstantively unconscionable.^{72/} The latter requirement can currently be

satisfied by evidence that a consumer lacked the information to make utility maximizing purchase choices.^{73/} We have shown, however, that the appropriate issue is not whether a particular person was informed but whether the market in which he acted was behaving competitively, and that prices and terms should be considered substantively unfair in virtue solely of the existence of noncompetitive behavior. Thus courts seemingly should inquire into the competitive state of markets when they are requested not to enforce contracts on information grounds. An unconscionability doctrine which made the information issue germane in this way, however, would be unsatisfactory for two reasons: it is very expensive to establish the existence of noncompetitive behavior, and courts cannot issue the remedies requisite to moving markets toward competitive equilibria.

Respecting expense, the criteria developed in Parts III and IV require for their application a great deal of evidence, of which the most important would go to the degree

of price or term dispersion, the extent of comparison shopping and the identification of relevant markets. Contracts cases, especially those to which consumers are parties, seldom involve stakes which would exceed the costs of compiling such evidence. It may be responded that parties to antitrust suits litigate issues of similar difficulty. But antitrust damages are generally much higher than contract damages; antitrust damages are trebled; and the winning party to an antitrust suit may get attorney's fees.^{74/} Even so, the majority of private antitrust actions are brought after government initiated cases had established the existence of noncompetitive behavior.^{75/} Thus trebling damages or awarding attorney's fees are unlikely to provide consumers with the incentive to establish the effect of imperfect information on a market's competitive state. And if this is so, a court would simply lack the evidence to answer the relevant normative question.^{76/}

Courts, moreover, would remain poor institutions to resolve information problems if they could get the evidence the unconscionability doctrine should require because courts can provide only "second best" remedies. The judicial power is limited to striking an offending term or price. Yet we have already shown that the preferred state response to the problem of imperfect information is not regulation of this kind but the moving of markets toward competitive equilibria. The most promising means for doing this include providing consumers with comparative price and term data and requiring prices and terms to be quoted in standard fashion. Courts cannot use these methods.

For all of these reasons, if the state were to assign responsibility for dealing with information problems to an administrative agency, as we next suggest, courts should no longer respond to them. In practical effect, this would mean that a claim that the existence of imperfect

information in some sense vitiated a party's consent would not constitute a defense to a suit to enforce a contract. But legal reforms sufficiently effective to make plausible the ousting of courts may not be adopted for some time, and this possibility requires us to inquire into what role is now appropriate for courts to play in responding to information problems.

The answer may be derived from the criteria developed above to guide the decision to intervene. Of those criteria, the one most susceptible to intelligent judicial use, in the absence of much evidence respecting market conditions, is the fourth, which holds that the likelihood of competitive behavior occurring varies inversely with the ease of making comparisons among the prices and terms of different firms. A court could decide intelligently whether a challenged firm's price or term was so obscurely quoted as to render quite difficult comparisons between it and other prices or terms. Also, an inexpensive market

sample sometimes could support at least a rough judgment as to whether such obscurity were common. Judicial application of this fourth criterion -- i.e. judicial refusal to enforce a price or term solely on the ground that its obscurity raised the costs of comparison shopping -- would also have two advantages; it may generate clearer clauses,^{77/} and it would not be especially intrusive because firms could redraft offending clauses without altering the substance of their transactions (except in so far as greater consumer awareness forced such alterations). Therefore, a court would apparently be justified in refusing to enforce those clauses which are obscurely drafted when the evidence also indicates that such obscure drafting is widespread.

Even this limited judicial role should be exercised cautiously. The comparison shopping criterion is only one of several, and a conclusion that a market is behaving noncompetitively thus cannot rest with much assurance solely on the premise that comparison shopping seems

difficult. That markets may be well behaved in the face of substantial imperfect information adds to the force of this caution. Further, it sometimes may be wrong to rest a conclusion that comparison shopping is relevantly difficult only on the ground that contracts are hard to read. This is because some evidence suggests that consumers can be knowledgeable about market conditions even though they have difficulty reading contracts. As an example, consumers apparently knew that finance companies charged higher rates than banks despite the difficulty, before the Truth In Lending Law, of calculating the APR.^{78/} Thus courts should only strike contract clauses on the ground of imperfect information when those clauses are egregiously obscure and when such obscure drafting commonly prevails.

This analysis also suggests the apparent superiority of an administrative agency in responding to information problems. Such an agency would have three advantages

over courts. First, it could be given the resources adequately to investigate market conditions; second, it could be given the power to issue the remedies which are likely to be effective in making markets behave more competitively; third, it would be more effective in policing disclosure schemes. Consistent with this view, primary enforcement responsibility for the two major disclosure initiatives of recent years, the Truth In Lending Law and The Magnuson-Moss Act, has been delegated to administrative agencies.^{79/}

Our suggestion respecting agencies is made in awareness of the dismal record which administrative agencies have so far made in economic regulation. Indeed, given this record and the great complexity of information issues, an honest and thorough attempt to devise an adequate administrative scheme could well end with the conclusion that such a scheme is impossible. But at this stage in the understanding of information problems (and

of agencies), the administrative solution seems sufficiently promising to be tried.

Conclusion

The existence of imperfect information is commonly thought to justify legal intervention because an imperfectly informed buyer cannot make utility maximizing purchase choices. This focus on the conditions under which individuals can make optimal decisions is unwise. Not only does it fail to give guidance to decisionmakers respecting when and how they should intervene in markets, but it is also misplaced; for when markets are competitive, individuals are protected from the adverse consequences of making decisions in the face of imperfect information. Therefore, decisionmakers should attempt to ascertain whether non-competitive behavior is occurring before intervening. Such a determination would be complex, expensive and inexact, but criteria exist which should enable it to be made with an acceptable (although not fully satisfactory) degree of rigor.

Further, once it has been decided that a market is behaving noncompetitively, the preferable state response is not to regulate prices or contract terms but to increase competition in that market. Because courts can do little to increase competition, state responses to the existence of imperfect information should be primarily legislative and administrative.

FOOTNOTES

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1. Recent statutes which attempt to eliminate the causes or respond to the effects of imperfect information include the Magnuson-Moss Warranty-Federal Trade Commission Act, 15 U.S.C.A. §§ 2301-12 (1975); the Consumer Credit Protection Act ("Truth in Lending"); 15 U.S.C.A. §§ 1601-77

(Supp. 1971); The Consumer Product Safety Act, 15 U.S.C.A. §§ 2051-80 (1972); The Consumer Leasing Act, 15 U.S.C.A. § 1667 (1976); The Real Estate Settlement Procedures Act, 12 U.S.C.A. §§ 2601-17 (Supp. 1978); and the Uniform Consumer Credit Code. The doctrine of strict liability in tort also is justified partly on the ground that consumers lack the information to evaluate the risks of product caused injuries. See, e.g., G. CALABRESI, THE COSTS OF ACCIDENTS 163-64 (1970); Calabresi and Hirschhoff, Toward a Test for Strict Liability in Tort, 81 YALE L. J. 1055 (1972).

2. A recent review article by two prominent commentators observed: "Among economic theorists, the decade of the 1970s has been the era of the economics of information." P. Joskow and R. Noll, Regulation In Theory and Practice: An Overview, in PUBLIC REGULATION (G. Fromm ed., forthcoming 1979). Professor Kornhauser recently made interesting reference to some of the earlier work but did not attempt

to set out a general framework for responding to information problems. See Kornhauser, Unconscionability in Standard Forms, 64 CALIF. L. REV. 1151 (1976).

3. Many articles recite that the purpose of disclosure legislation is to enable consumers to make rational purchase decisions or not to waste money. A typical quote is

The rationale behind FPLA [Fair Product Labeling Act] and other statutes which are designed to inform the consumer is clear. "If the consumer is unable to choose on an informed basis, then his dollar is wasted."

MacIntyre, Fair Packaging And The Informed Consumer, 41 N.Y. STATE BAR 687 (1969); See also, e.g., Landers & Chandler, Truth In Lending Act and Variable Rate Mortgages And Balloon Notes, 1 AMERICAN BAR FOUND. RES. J. 35, 64 (1976); Thain, Credit Advertising And The Law: Truth In Lending And Related Matters, 1976 WASH. U.L.Q. 257, 258

(1976); Note, 1973 WISC.L. REV. 290. It is also sometimes said that the purpose of providing information is to enable consumers better to compare purchase options. E.g. Bissette v. Colonial Mortgage Corporation, 340 F.Supp. 1191 (D.Col. 1972); Ratner v. Chemical Bank New York Trust Company, 329 F.Supp. 270 (S.D.N.Y. 1971). The Declaration of Purpose in the Truth In Lending Law also explains that disclosure is required partly "so that the consumer will be able to compare more readily the various credit terms available to him and avoid the uninformed use of credit." 15 U.S.C. §1601 (1971 Supp.) All of these rationales apparently reduce to the claim that uninformed consumers cannot contract in their own best interests. It is also occasionally said that providing consumers with more information will increase competition, but the nexus between informing consumers and the existence and normative desirability of competitive markets is largely unexplained in the legal literature. See, e.g., REPORT OF THE NATIONAL

COMMISSION ON CONSUMER FINANCE, CONSUMER CREDIT IN THE UNITED STATES (herein "CONSUMER CREDIT") 171-72 (1972).

4. A modified version of this illustration was often used to explain the need for a Truth in Lending Law. Firms were said to quote the price of money in such complex and confusing ways that consumers, in effect, could not know whether the price was \$4 or \$2 and in consequence would sometimes "pay" the \$4 price. See, e.g., Jordan and Warren, Disclosure of Finance Charges: A Rationale, 64 MICH.L.REV. 1285, 1293-94, (1966).

5. The lack of two kinds of information, it should be noted, may prevent a consumer from making utility maximizing choices. The textual illustration at note 4, supra, of a consumer unaware of the degree of price dispersion, is meant to illuminate cases where consumers know of available options but lack the information fully to evaluate them. Thus consumers know that all goods have prices, but may be unaware of where to find low

prices or be unable, as in the loan area, to compute actual interest rates. A second category of "information gaps" concerns cases where a consumer is ignorant of some elements of the set of options from which he must choose. As an illustration, a consumer may not know that certain drugs produce dangerous side effects, and thus may make the wrong choice, as measured by his own self-interest, from a set of options which includes taking drug X (dangerous but quite efficacious), drug Y (harmless but less powerful) or no drug (dangerous in another way). The method of reducing the costs of becoming informed apparently would only protect consumers from information gaps of the former kind; for a consumer is unlikely to alter his behavior -- make different choices -- when the state makes it cheaper for him to evaluate options of whose existence he is ignorant. If, however, the method of reducing the costs of acquiring information is conceived broadly to include not only making it cheaper for the consumer to evaluate known

options but also cheaper to learn of the full set of options he actually faces, the distinction between the two kinds of information gaps loses functional significance. Warning consumers of the dangers which particular drugs pose, in this latter view, is in fact an aspect of the method of protecting the consumer by reducing his costs of becoming informed. This paper nevertheless focuses mainly on cases where the consumer knows in at least a vague sense of the market options he faces -- that prices vary, warranties and security interests are "broad" or "narrow" and so forth. The textual illustrations should be taken to refer to market options which are known in this sense. This focus is adopted because American law is primarily concerned with information gaps which allegedly are a result of the high costs of fully evaluating known options, and also because the question what should be done when consumers are unaware of some of the options they face

raises theoretical problems which current economic analysis has not yet resolved.

6. An illustration of such a limitation is found in the Uniform Consumer Credit Code, which authorizes consumers only to grant purchase money security interests. Uniform Consumer Credit Code § 3.301 (1974 Text).

7. See, e.g., *Fuentes v. Shevin*, 407 U.S. 67 (1972); *Sniadach v. Family Finance Corp.*, 395 U.S. 337 (1969).

8. This argument also holds when consumers are unaware of the options they face. Warning of the dangers drugs pose thus will enable a consumer to make the utility maximizing choice from the (now fully perceived) set of options he faces.

9. As an example, some consumers had reasonably accurate information respecting the interest rates they paid before passage of the Truth In Lending Law, and some consumers

had quite inaccurate information after passage. See, e.g., Mandell, Consumer Perception of Incurred Interest Rates: An Empirical Test of the Efficacy of the Truth-In-Lending Law, 26 J.FIN. 1143 (1971).

10. The debate over the need for a Truth In Lending Law illustrates this shortcoming in conventional analysis. In Professor Kripke's view, the law would accomplish little "because the middle class buyer has already learned where credit is cheapest". Kripke, Gesture And Reality In Consumer Credit Reform, 44 N.Y.U.L. REV. 1, 51 (1969); See also Kripke, Consumer Credit Regulation: A Creditor-Oriented Viewpoint, 68 COLUM. L. REV. 445, 460-66 (1968). But Professor Landers claimed that prior to the Truth In Lending Law "consumers' knowledge of the cost of credit is woefully inadequate", and the law itself "seems to have had a minimal impact" Landers and Chandler, supra note 3, at 65. A debate in these terms must necessarily be inconclusive. As another illustration,

the Magnuson-Moss Act requires increased disclosure of warranty provisions partly "to improve the adequacy of information available to consumers" 15 U.S.C.A. §2302(a). Professor Whitford surveyed new car buyers before this Act to ascertain whether they understood the manner in which their warranty coverage was limited. The percentage of correct answers he obtained varied from 34% (where the car must be serviced) to 64% (warranty length). Whitford, Law And The Consumer Transaction: A Case Study Of The Automobile Warranty, 1968 WISC. L. REV. 1006, 1054-55. If these percentages are typical for other consumer warranty provisions, were the disclosure provisions of the Magnuson-Moss Act necessary? The conventional analysis of information problems cannot provide an answer.

Further, because the relationship between informed consumers and market outcomes has never been fully explored in the legal literature, these quantification problems

plague the few commentators who support disclosure legislation partly because it helps produce competitive markets. Thus Senator Douglas, the leading legislative proponent of Truth In Lending, argued that "only . . . 10 percent cost conscious" consumers can "police" the market. Quoted in CONSUMER CREDIT 176. The National Commission On Consumer Finance, however, claimed that "effective price competition" would result if "somewhere between one-third and one-half of the prospects are aware [of interest rates] and if some portion shop for credit" Id. Neither proponent of the Law justified the percentages of informed consumers they claimed would be necessary to achieve the Law's goal.

11. The classic study of how consumers search for purchase information is Katona and Mueller, A Study of Purchase Decisions in 1 CONSUMER BEHAVIOR: THE DYNAMICS OF CONSUMER REACTION 30 (1954). Recent studies which describe consumer search behavior include Newman, Consumer External Search: Amount and Determinants in CONSUMER AND INDUSTRIAL BUYING

BEHAVIOR 79 (A. Woodside, T. Sheth and P. Bennett eds. 1977); Claxton, Fry and Portis, A Taxonomy of Prepurchase Information Gathering Patterns, 1 J. CONS. RES. 35 (1974); Newman and Staelin, Prepurchase Information Seeking For New Cars and Major Household Appliances, 9 J. MKT. RES. 249 (1972).

12. That consumers who search benefit consumers who do not search has previously been noted. See Rothschild, Models of Market Organization with Imperfect Information: A Survey, 81 J. POL. ECON. 1283 (1973).

13. This argument presupposes that firms do not discriminate among consumers on the basis of relative knowledge or sophistication. In Part IV B, infra, we consider the implications of relaxing this assumption.

14. A "harsh" contract clause, such as a broad disclaimer, shifts many risks to consumers while a "gentle" clause, such as a broad warranty, shifts risks to firms. Consumers

who choose harsh clauses (in return for lower prices) thus are less risk averse than those who choose gentle ones. If the consumers who shop for contract terms always choose harsh (or gentle) clauses, it may be possible to infer that searchers are less (or more) risk averse than non-searchers, and thus that competition among firms for the business of searchers would yield contract clauses which were not utility maximizing for the nonsearchers. But as no evidence that searchers always choose particular kinds of terms exists, it seems safe to assume that the degree of risk aversion does not correlate strongly with the extent of search. This aside, poor consumers may be somewhat more willing than middle class consumers to trade lower prices for bearing more purchase risks. See Schwartz, A Reexamination Of Nonsubstantive Unconscionability, 63 VA. L. REV. 1053, 1058-59 (1977). Poor consumers, however, often seem to purchase in distinct markets. See Kunreuther,

Why The Poor Pay More For Food: Theoretical and Empirical Evidence, 46 J. BUS. 368 (1973); FEDERAL TRADE COMMISSION ECONOMIC REPORT ON INSTALLMENT CREDIT AND RETAIL SALES PRACTICES OF DISTRICT OF COLUMBIA RETAILERS (1968).

15. E.g. J. WHITE & R. SUMMERS, HANDBOOK OF THE LAW UNDER THE UNIFORM COMMERCIAL CODE 118-19, 128 (1972).

16. The argument to this point assumes that an intervention on information grounds cannot be justified if a market is already competitive because competitive markets generate prices and terms which are utility maximizing for all consumers. In Part V A, infra, we discuss possible efficiency and fairness objections to this premise.

17. A good introduction to equilibrium analysis is A. CHIANG, FUNDAMENTAL METHODS OF MATHEMATICAL ECONOMICS 39-49 (1974).

18. For fuller explanation of the Nash equilibrium concept, see R. LUCE and H. RAIFFA, GAMES AND DECISIONS (1957).

19. The previous two paragraphs describe a "static equilibrium model". Such models do not explain how markets out of equilibrium reach equilibrium; they do not, that is, describe dynamic processes. Static equilibrium models instead characterize the kinds of equilibria a market can sustain. The formal models discussed below are all static equilibrium models. While dynamic models would be quite useful for understanding market phenomena, dynamic modeling is not sufficiently advanced to generate useable policy instruments.

20. Many of these models are reviewed in Rothschild, Models of Market Organization with Imperfect Information 81 J. POL. ECON. 1283 (1973). For a more recent survey, see L. Wilde, Market Search Models: A Selective Survey, California Institute of Technology, Social Science Working Paper #133 (1976).

21. An additional assumption is that a large number of firms exist. The object is to characterize equilibria in markets where, imperfect information aside, the usual competitive assumptions obtain.

22. Consumers of course would have individual limit prices. One could derive for each firm a demand function (telling the firm the highest price it could profitably charge) from the distribution of individual limit prices, but this is not done because the models' results are qualitatively unchanged under the simplifying assumption. Respecting the realism of the assumption that consumers have limit prices, a recent review article observed that one can say "with reasonable certainty" that "the consumer enters the market not with a single price in mind, but with a range of acceptable prices". Gardner, The Role of Price In Consumer Choice in SELECTED ASPECTS OF CONSUMER BEHAVIOR, 415, 427 (NSF/RA 77-0013, 1977). Researchers also have surveyed consumers and report finding maximum

acceptable prices. See authorities cited note 39, infra.

23. E.g. K. Arrow and M. Rothschild, Preliminary Notes on Equilibrium Price Distributions with Limited Information, The Economics Series, Institute of Mathematical Studies in The Social Sciences, Working Paper #34, Stanford University (1973); Diamond, A Model of Price Adjustment, 3 J. ECON. THEORY 156 (1971); McCall, The Economics of Information and Optimal Stopping Rules, 38 J. BUS. 300 (1965).

24. That the monopoly price is the only equilibrium when all consumers face positive search costs, know the price distribution and shop sequentially has been observed by several authors. See Butters, Market Allocation Through Search: Equilibrium Adjustment and Price Dispersion: Comment, 15 J. ECON. THEORY 225 (1977); Arrow and Rothschild, supra note 23; Diamond, supra note 23.

25. In a market of very few firms, price cutting could be an optimal strategy for a firm to follow if all firms charged the monopoly price because the odds of consumers

finding a price cutting firm vary inversely with the number of firms; in consequence, consumers would be more likely to search for price cutters when very few firms exist. In such a case, however, the costs to firms of colluding to raise prices are reduced, for collusion costs also vary inversely with the number of firms. No models describe the outcomes reached by oligopoly markets affected by imperfect information, apparently because of the difficulty of characterizing the strategies firms pursue when they have incentives both to cut and collusively raise prices.

26. Salop and Stiglitz recently created a search equilibrium model in which consumers face two search options, to pay a set price and obtain a list of every firm charging the lowest price in the market or to visit one firm at random and pay whatever price that firm charges. Salop and Stiglitz, Bargains and Ripoffs: A Model of Monopolistically Competitive Price Dispersion,

44 REV. OF ECON. STUD. 493 (1977). In their model, a competitive equilibrium could occur only if a substantial number of consumers face zero search costs. Should all consumers face positive search costs, a firm could increase profits if it raised its price above the competitive price by an amount less than the cost to consumers of paying the set price to become perfectly informed. Thus the competitive price could not be an equilibrium.

27. An exception is Butters, Equilibrium Distribution of Sales and Advertising Prices, 44 REV. OF ECON. STUD. 465 (1977). Professor Butters assumed that firms advertise only by sending to all potential buyers slips of paper on which are written the product type -- "a pen" -- and the price. Buyers can costlessly process all such advertisements they receive but they obtain no other product information. From these conditions he generated an equilibrium price distribution in which one firm charged the competitive price, another the limit or monopoly

price and all other firms were in between, no two firms charging the same price. The restrictiveness of his assumptions together with the improbability of this outcome actually obtaining suggest that his interesting theoretical models would not provide useful guidance to policymakers.

28. This model is presented formally in Wilde and Schwartz, Equilibrium Comparison Shopping, 45 REV. OF ECON. STUD. -- (Forthcoming 1979). Readers interested in the mathematics underlying the heuristic explanation the text next provides should refer to this paper.

29. A consumer is considered not to know the price distribution if he has little specific knowledge of the prices the market offers. A consumer would be ignorant of the price distribution in this sense although he knew that a nineteen inch color television set would be unlikely to cost him less than \$200 or more than \$650.

30. See, e.g., Rothschild, Searching for the Lowest Price When the Distribution of Prices is Unknown, 82 J. POL. ECON. 689 (1974).

31. See Gastwirth, On Probabilistic Models of Consumer Search For Information, 90 QUARTERLY J. ECON. 38 (1976).

32. See Fried and Peterson, Information Seeking: Optimal Versus Fixed Stopping, 80 J. EXPER. PSYCH. 525 (1969); Pitz, Information Seeking When Available Information Is Limited, 76 J. EXPER. PSYCH. 25 (1968).

33. See Day and Brandt, A Study of Consumer Credit Decisions: Implications For Present and Prospective Legislation, in THE NATIONAL COMMISSION ON COMMISSION FINANCE, 1 TECHNICAL STUDIES 95 (1972); Bucklin, Testing Propensities to Shop, 30 J. MKT. 22 (1966); Udell, Prepurchase Behavior of Buyers of Small Electrical Appliances, 30 J. MKT. 50 (1966); authorities cited note 11, supra.

34. See Newman, supra note 11; Swan, Search Behavior Related to Expectations Concerning Brand Performance, 56 J. APP. PSYCH. 332 (1972); Bucklin, supra note 33.

35. Claxton, Fry and Portis, supra note 11; Newman and Staelin, supra note 11; Katona & Mueller, supra note 11. Psychologists have created the concept of "perceived risk", which they define as the risk the consumer associates with the financial, social and physical consequences which may flow from purchase of the product. The higher the degree of perceived risk, they assert, the greater the amount of search because search generates information, which can reduce the consumer's (subjectively) perceived risk. Thus the psychological model also predicts greater search at higher prices. See J. ENGEL, T. KOLLAT and R. BLACKWELL, CONSUMER BEHAVIOR 378-79, 586-87 (2d. ed. 1973).

36. Readers might observe that if P_L , the limit price, were only 1.5 times greater than \hat{p} , a firm's marginal

cost, this equation yields absurd results (where $P_L = 1.5\hat{p}$, $x \geq 1 - \frac{\hat{p}}{P_L - \hat{p}}$). Such results would not occur in practice. The model shows that a competitive equilibrium occurs when the ratio of comparison shoppers to all shoppers (x) $\geq 1 - \frac{F}{s(P_L - \hat{p})}$. The part of the equation to the right of the \geq sign will be less than one (thereby ensuring a positive percentage of comparison shoppers) if $s(P_L - \hat{p}) > F$. The model in fact assumes that $s(P_L - \hat{p}) \geq F$ because in equilibrium P_L must equal the highest price in the market. Thus to say that $s(P_L - \hat{p}) \geq F$ is to assume that a firm which operates at "capacity" (s is the profit maximizing capacity) can recover its fixed cost, F (including a return on investment), when it charges the highest price the market will permit (P_L). Were this condition unsatisfied, no firms would be in the market. As firms will of course exist in any case in which the law is interested, the condition $s(P_L - \hat{p}) \geq F$ will be satisfied;

and the equation for X , when applied to real markets, will yield a zero (no amount of comparison shoppers can generate a competitive equilibrium in this particular market) or a positive fraction (1/3 as in the textual example).

To show that in equilibrium P_L would be the market's highest price, let the highest price in a market be P_b where $P_b < P_L$. The firm charging P_b would only make sales to those consumers who sample one firm; consumers who sample more than one firm will not purchase from the firm charging P_b because it would be the highest price they see. Thus the firm charging P_b would have an incentive to raise its price above P_b because it would lose no customers. But the firm could not charge more than P_L , for above P_L no sales are made. Thus the market's highest price (P_b) must equal P_L in equilibrium.

37. See authorities cited supra notes 11 and 33.

38. Methodological problems also cause the studies cited above to understate the amount of consumer search actually occurring. These studies rest on surveys of consumers taken from days to more than a year after the consumers purchased the items in question. Consumers are unlikely to recall in detail the nature and number of information sources consulted. Further, many indices of search measure the number of categories of information sources consumers use -- store visits, friends, ads, articles -- but do not count frequency of use within categories. Some active searchers may therefore go undetected. Finally, studies of consumer search behavior usually neglect information seeking within retail units. See Newman and Lockman, Measuring Prepurchase Information Seeking, 2 J. CONS. RES. 216 (1975). These authors surveyed consumers after they shopped (for women's shoes) and also observed their search behavior. They found that consumers in fact received more information than they reported receiving. Id. C.f. Day,

Assessing the Effects of Information Disclosure Requirements,

40 J. MKT. (#2) 42 (1976) (criticizing methodology of studies of the effectiveness of disclosure legislation in part because these studies relied heavily on self-reporting of behavior).

39. Despite these difficulties, marketing scholars for several years have been surveying consumers to ascertain the maximum and minimum prices consumers would pay before they begin shopping, and apparently believe surveys of this kind would be useful to firms. See, e.g., Adam, Consumer Reactions To Price in PRICING STRATEGY 75 (B. Taylor and G. Wills, eds. 1969); Foulhe, The Subjective Evaluation of Price: Methodological Aspects, Id. at 89; Gabor & Granger, The Attitude of the Consumer to Prices, id., at 132; Monroe, Buyers' Subjective Perceptions of Price, 10 J. MKT. RES. 70 (1973); Monroe, Measuring Price Thresholds by Psychophysics and Latitudes of Acceptance, 8 J. MKT. RES. 460 (1971);

Stoetzel, Psychological/Sociological Aspects of Price in PRICING STRATEGY, supra, at p. 70.

40. See Schoeber and Shay, State and Regional Estimates Of The Price And Volume Of The Major Types Of Consumer Credit In Mid-1971 in THE NATIONAL COMMISSION ON CONSUMER FINANCE, 3 TECHNICAL STUDIES 1, 100-09, 118, 120 (1972).

41. See 43 CONS. REPORTS 202 (1978).

42. Day and Brandt, A Study of Consumer Credit Decisions: Implications For Present and Prospective Legislation, in THE NATIONAL COMMISSION ON CONSUMER FINANCE, 1 TECHNICAL STUDIES 1, 41, 67 (1972).

43. The allegations prompted the Equal Credit Opportunity Act, 15 U.S.C.A. § 1691 (West. Supp. 1978), which outlaws such discrimination .

44. In adjudicating the legality of a merger between two firms in the same line of business when the acquiring

firm was not in the acquired firm's market, the Supreme Court stated:

[T]he Court has recognized that a market extension merger may be unlawful if the target market is substantially concentrated, if the acquiring firm has the characteristics, capabilities, and economic incentive to render it a perceived potential de novo entrant, and if the acquiring firm's premerger presence on the fringe of the target market in fact tempered oligopolistic behavior on the part of existing participants in that market. In other words, the Court has interpreted §7 [of the Clayton Act] as encompassing what is commonly known as the "wings effect" -- the probability that the acquiring firm prompted premerger procompetitive effects within the target market by being perceived by the existing firms in that market as likely to enter de novo.

United States v. Marine Bancorporation, Inc., 418 U.S. 602, 624-25 (1974). See also United States v. General Dynamics Corp., 415 U.S. 486 (1974); United States v. Falstaff Brewing Corp., 410 U.S. 526 (1973). These inquiries are at least as complex and expensive to conduct as those we propose, and they seem less susceptible of precise answers; for our criteria focus on observable facts such as market prices and the extent of comparison shopping rather than on such intangible factors as whether a firm would have entered a market or whether the possibility of entry "tempered" noncompetitive behavior by existing firms.

45. Because legislatures cannot conveniently ascertain the competitive state of particular markets before passing statutes, an institutional implication of the argument that an intervention should not be made unless a market's competitive state is explored is that state responses to the problem of noncompetitive behavior resulting from imperfect information should primarily be administrative

or judicial. The antitrust laws, which seek to ascertain and remedy noncompetitive behavior resulting from structural market imperfections or collusive behavior, afford a convenient analogy. For reasons developed in Part V (B), infra, we argue that the administrative process is best suited to respond to information problems.

46. This taxonomy was initially used in Nelson, Information and Consumer Behavior, 78 J. POL. ECON. 311 (1970). A third category, usually applied to services, is "credence". A credence quality cannot be evaluated by direct observation or use. As an illustration, a consumer may never know whether the automobile repair he purchased was actually necessary. See Darby and Karni, Free Competition and the Optimal Amount of Fraud, 16 J. LAW & ECON. 67 (1973). No search equilibrium models consider credence qualities.

47. Udell reports that 73% of the purchases of small appliances were planned prior to shopping in a store, which suggests that consumers comparison shop within quality

levels. Udell, Prepurchase Behavior of Buyers of Small Electrical Appliances, 30 J. MKT. 50, 52 (1966). If a majority of consumers comparison shop across quality levels, market price distributions for some goods may be too ambiguous to evaluate.

48. The courts have split on the question whether the Truth In Lending Law requires disclosure of acceleration clauses. For a discussion of the cases see Comment, Acceleration Clause Disclosure Under The Truth In Lending Law, 77 COLUM. L.REV. 649 (1977) (Concludes that disclosure is not required under current law, but that the statute should be amended to require it because "a right of acceleration is of significance to the borrower" Id. at 668). See also Note, Acceleration Clause Disclosure: A Truth in Lending Policy Analysis, 53 IND. L.J. 97 (1977).

49. By contrast, a competitive equilibrium is one in which, given existing technology, costs, and consumer tastes, the market generates a mix of terms that maximizes social welfare rather than the welfare of firms. In such a case, it should be noted, firms will not necessarily provide the same terms to all consumers. This largely is because consumers differ in their degree of risk aversion and time preference (i.e. some consumers may prefer to consume Fiats, which are disposable, and thus they will not seek long term warranties).

50. We have phrased the issue as whether a market is monopolistic respecting terms because administrative difficulties should (and probably would) prevent decisionmakers from evaluating term equilibria intermediate between competition and monopoly. It would be extraordinarily difficult (perhaps impossible) to compute the welfare loss of such equilibria, as contrasted with a competitive equilibrium respecting the purchase terms at issue. Also, present economic models are unable to characterize intermediate

equilibria as regards terms. Thus when terms are at issue, a decisionmaker should intervene (cost of intervention problems aside) only when a monopoly outcome occurs. For an attempt to characterize the welfare effects of imperfect information when price is the only variable and the setting is otherwise somewhat artificial (the government controls all the prices) see Diamond, Welfare Analysis of Imperfect Information Equilibria, 9 BELL J. ECON. 82 (1978).

51. Some corroboration of the model lies in studies which indicate that individual retailers do not discriminate among consumers on the basis of income or ethnic characteristics, both of which are commonly used as proxies for being uninformed or unsophisticated. See J. ENGEL, D. KOLLAT and R. BLACKWELL, supra, n. 35, at p. 187.

52. An empirical study which sent researchers disguised as potential buyers to new car dealers found no statistically significant differences between the prices quoted to black

and white buyers but did find such differences between the prices quoted to "poorly dressed" and other buyers. These differences seemed small. A poorly dressed black received price quotes on new cars the mean of which was \$3,836.18 while a well-dressed black received quotes the mean of which was \$3,754.14, a difference of \$82.04.

Wise, Differential Pricing and Treatment by New-Car Salesmen: The Effect of the Prospect's Race, Sex and Dress, 47 J. BUS. 218 (1974). See also Wise, Cox and Floto, Sex and Race Discrimination in the New-Car Showroom: A Fact or Myth?, 11 J. CONS. AFFAIRS 107 (#2) (1977).

Dealers, it should be noted, do not discriminate among consumers on the basis of contract terms, nor can they seriously discriminate on the basis of quality. C.f. Leff, Contract As Thing, 19 AM.U.L. REV. 131 (1970). (Observing that the sometimes extensive bargaining between consumers and automobile dealers did not concern the contract of sale).

53. C.f. Jones v. Star Credit Corp., 59 Misc. 2d 189, 298 N.Y.S. 2d 264 (N.Y.S.Ct. 1969) (refusing to enforce the full contract price on the ground that it was unconscionably high); American Home Improvement, Inc. v. MacIver, 109 N.H. 435, 201 A.2d 886 (1968) (same); Uniform Consumer Credit Code § 5.108 (4) (c) (1974 Text) (provides that a "factor" supporting a finding of unconscionability is "gross disparity between the price . . . and the value of the property . . . measured by the price at which similar property . . . [is] readily obtainable . . . by like consumers").

54. See Schwartz, supra note 14, at 1057-59.

55. See Schwartz, Seller Unequal Bargaining Power And The Judicial Process, 49 IND. L. J. 367, 385 n. 41 (1974).

56. These three reasons would also militate against regulation which takes the form of requiring firms to substitute

gentle for harsh clauses. The Magnuson-Moss Act, however, does engage in regulation, as it provides that firms cannot disclaim implied warranties if they make written express warranties. 15 U.S.C.A. §2308 (1975).

57. See, Daniels, Merit and Meritocracy, 17 PHIL. & PUB. AFFAIRS 206 (1978).

58. This fairness claim seems analagous to the claim that a person has a right to a hearing to contest disadvantaging action even though the person lacks an entitlement to a particular outcome which the hearing could protect. In such a case, the right to a hearing arises because the persons who have taken the disadvantaging action and the affected party are members of the same community; and as between members of a community one is entitled to have from others an explanation of their actions which affect him and a chance to participate in those actions. See Michelman, Formal and Associational Aims In Procedural Due Process, in 18 NOMOS DUE PROCESS

126 (J. Pennock and J. Chapman, eds. 1977). Similarly, it may be claimed that a person has a right to have search costs reduced in competitive markets, not because one has a right to a particular market outcome, but because all members of a community are entitled to participate in actions which affect them -- here the workings of the market -- and reducing search costs conduces to this end. In addition to the difficulties with this position which the text next discusses, we add that it is a difficult position to confine. All persons have a formal right to participate in the market -- the nonsearchers could search -- and many actions could make that right more real, such as redistributing wealth to give some groups a greater say in market outcomes. The position that "extra formal" rights to participate should be created does not shed very much light on which such rights the state should enact into law. In any event, we have no reason to assume that Professor Michelman would extend his analysis to the market context.

59. The Supreme Court has held that advertising of prices in some circumstances has First Amendment protection. *Virginia State Board of Pharmacy v. Virginia Citizens Consumers Council*, 425 U.S. 748 (1976); *Bigelow v. Virginia*, 421 U.S. 809 (1975).

60. See Benham, The Effect of Advertising on the Price of Eyeglasses, 15 J. LAW & ECON. 337 (1972).

61. One author of this article has recently argued that if consumers are assumed to have sufficient information, the existence of a standard form contract should be neutral with respect to the question whether a court should enforce any of the clauses in it. See Schwartz, supra note 14, at 1064-71. The argument made above shows that the existence of a standard form contract should be neutral with respect to the enforcement decision even though consumers are assumed to be imperfectly informed.

62. See L. FULLER and M. EISENBERG, BASIC CONTRACT LAW 532 (1972). See also P. KEETON and M. SHAPO, PRODUCTS AND THE CONSUMER: DECEPTIVE PRACTICES 355 (1972).

63. See Day, supra note 38.

64. Researchers studied the "effectiveness" of legally required unit pricing by posting next to the supermarket shelf on which particular brands appeared a list which identified each brand and gave its unit price. Consumers could compare unit prices more conveniently with such a list than if they were required to make comparisons and computations directly from the labels of products on the shelf. These price lists were compiled for three relatively homogeneous products (canned dogfood, facial tissue and dishwashing liquid) and posted for three weeks. Consumers paid from 1.4% lower prices for dogfood to 2.9% lower prices for dishwashing liquid because some of them switched to less expensive brands. Russo, Krieser and Miyashita, An Effective Display of Unit Price Information,

39 J. MKT. (#2) 11 (1975). This research and our analysis suggest that recent bills which would require pharmacists to post the prices of commonly used prescription drugs would be effective in reducing drug prices. See H.R. 10681, 95th CONG. 2d. SESS. (1978); H.R. 4591, 95th CONG. 1st SESS. (1977). Price lists which saved consumers the trouble of going from firm to firm rather than from one end of a shelf to the other thus might produce significant reductions in purchase costs. Providing consumers with lists of commonly used terms -- firm X warrants, firm Y disclaims -- might also improve the efficiency of market outcomes.

65. When firms can exclude "freeloaders" or capture a high portion of the returns which providing comparative price or term information yields, the market will produce such information. As an example, a subscription cable television company in Los Angeles televises comparative grocery prices because it can charge most of the recipients

of this information. In addition, firms which charge relatively low prices have an incentive to publish advertisements comparing their prices to those of their competitors, and such advertisements are sometimes seen. A disincentive to advertise in this fashion is that it can provide free and useful publicity to firms whose prices are close to those of the advertising firm, for consumers could decide that there is insufficient price dispersion to warrant searching out the firm which charges the very lowest price. Firms which engage in comparative price advertising also have incentives to misrepresent the comparisons, as for example by suppressing quality differences. For a discussion of the legal regulation of comparative advertisements, see Rollins, Comparative Price Advertising, 33 BUS. LAWYER 1771 (1978).

66. A proposed bill to simplify the Truth in Lending Law would authorize the Federal Reserve Board to collect, publish and disseminate to the public, on a demonstration basis in a number of standard

metropolitan statistical areas to be determined by the Board, the annual percentage rates charged for representative types of nonsale credit by creditors in such areas.

The Board was also authorized "to require creditors in such areas to furnish information necessary for the Board. . . ." S.2802, 95th CONG.2d. SESS. §136 (a) (1978). Although publishing such information is in general an excellent idea, some evidence suggests that many consumer credit markets may now be sufficiently competitive as not to justify the expense this statute would entail. See text at notes 40-42, supra. Thus we would recommend that the Board should not use §136 (a) (assuming the bill passes) without first ascertaining the state of competition in the markets at issue.

67. As an illustration of the popularity of this concept, a Governor of the Federal Reserve Board recently explained

to the Senate a Board proposal to simplify the Truth in Lending Law partly as follows:

Looking at these [commonly used credit] forms, it is hard to avoid the impression of information overload. There is more information than most consumers can digest. By reducing the number of items of information disclosed as under the Board's proposal, the important ones will receive a greater emphasis and there will be a greater likelihood of affecting consumer behavior.

Statement by Philip C. Jackson, Jr., Board of Governors of the Federal Reserve System before the Consumer Affairs Subcommittee of the Committee on Banking, Finance and Urban Affairs, United States Senate 4-5 (July 11, 1977). See also Davis, Protecting Consumers From Overdisclosure and Gobbledygook: An Empirical Look at the Simplification of Consumer-Credit Contracts, 63 VA.L.REV. 841 (1977).

68. The only serious studies of information overload were by Professor Jacoby. See Jacoby, Speller and Kohn, Brand Choice Behavior As A Function of Information Overload, 11 J.MKT. 63 (1974); Brand Choice Behavior As A Function of Information Load: Replication and Extension, 1 J. CONS. RES. 33 (1974). Jacoby first interviewed consumers to ascertain their "ideal" brand. He then required consumers to choose from among a set of unknown brands on the basis of "bits" of information describing each brand. In these experiments, both the number of unknown brands and the bits of information per unknown brand were varied. Jacoby defined a "better" decision as one which selected a brand close to the consumer's ideal brand, and he reported that increasing the amount of information consumers were provided caused worse -- in his words "dysfunctional" -- decisions. His methodology and conclusions were quite critically reviewed. The most serious criticism was that Jacoby failed to compare his

results to those which would occur by chance. Assume that a consumer has to choose a brand out of four available brands, and one of the brands is closer to his ideal than the others. If the consumer knows nothing at all about the brands, he should make the "best" choice 25% of the time. If the consumer must choose one from eight brands, he will be right 12.5% of the time. But assume that the consumer is provided with information in the eight brand case and makes the right choice 20% rather than 12.5% of the time. It then cannot be said that more information is worse because in the four brand case the ignorant consumer was right 25% of the time and in the eight brand case the informed consumer was right only 20% of the time. What you must say is that the information helped in the eight brand case because the consumer did 7.5% better than he would have done if he had no information at all. Jacoby, however, said in effect that more information is worse because in the eight brand case the consumer was

right only 20% of the time. In fact, it turns out that when Jacoby's data are corrected to take into account the effects of chance, more information improved the quality of decisions in about every case. For a representative sample of the critics see Staelin and Payne, Studies of the Information-Seeking Behavior of Consumers in COGNITION AND SOCIAL BEHAVIOR 185 (J. S. Carroll and J. W. Payne, eds. 1976); Russo, More Information Is Better: A Reevaluation of Jacoby, Speller and Kohn, 1 J. CONS. RES. 68 (1974); Summers, Less Information Is Better?, 11 J. MKT. RES. 467 (1974); Wilkie, Analysis of Effects of Information Load, id. at 462 (1974).

69. If the government decided to make price information available, it should allow firms freely to cut the prices they quote to the agency collecting and publishing price data. Experimental studies show that equilibrium prices are higher, other things equal, when firms are required to maintain posted prices for specified periods. See

J. Hong and C. Plott, Implications of Rate Filing For Domestic Dry Bulk Transportation on Inland Waters: An Experimental Approach, California Institute of Technology, Social Science Working Paper #164 (1976).

70. The methods and difficulties of modern disclosure law are thoughtfully explored in P. KEETON and M. SHAPO, supra note 62, and Landers and Rohner, A Functional Analysis of Truth in Lending (forthcoming, 1979). The most important Federal statutes which require standardization as a means of facilitating comparison shopping are the Truth In Lending Law, which requires the price of money to be quoted in standard fashion, and the Fair Packaging and Labeling Act, 15 U.S.C.A. § 1451, 1453, which requires disclosure of the net contents of each "packaged consumer commodity." The comparison shopping goal of the former statute, however, has apparently become subordinated to the goal of requiring firms to disclose information which

a hypothetical consumer might consider important or useful. See Landers, Some Reflections on Truth in Lending, 1977 U.Ill. L. F. 669. For reasons which should by now be plain, this is an inappropriate goal for disclosure legislation. In addition, the Truth In Lending Law does not require standardization of the language in which its required term disclosures must appear. See Landers and Rohner, supra.

71. See Landers, Determining the Finance Charge Under the Truth in Lending Act, 1 AM. BAR FOUND. RES. J. 45 (1977).

72. See Schwartz, supra note 14.

73. The doctrine of strict liability in tort also arose partly as a response to a consumer's supposed inability to appreciate the risks of purchasing consumer goods. See authorities cited note 1, supra.

74. 15 U.S.C.A. § 15 (1970).

75. See Posner, A Statistical Study of Antitrust Enforcement, 13 J. LAW AND ECON. 365, 381 (1970).

Judgments obtained by the Government in antitrust actions create prima facie civil cases against defendants on the issue of liability. 15 U.S.C. § 16(c) (1970). Bills have been introduced in Congress to authorize consumers to bring private suits against firms found by the F.T.C. to have committed unfair trade practices or to have violated F.T.C. cease and desist orders. See CONSUMER CLASS ACTIONS, AMERICAN ENTERPRISE INSTITUTE Legislative Analysis No. 8 (1977). Although evaluation of these bills is beyond our scope, we note that passage of them could obviate some of the difficulties discussed here.

76. Institutional litigators, such as the F.T.C. or the Uniform Consumer Credit Code's Administrator (who is

authorized to seek injunctions against "unconscionable terms or provisions of consumer credit transactions" UCCC §§ 6.103, 6.104, 6.111), would have the resources to try the information issue fully. Thus, courts could have complete records in those cases to which institutional litigators are parties. Nevertheless, for the reasons the text next gives, a judicial response would be unsatisfactory even in such cases.

77. Section 237 of the RESTATEMENT (SECOND) OF CONTRACTS may be explicable as pursuing the goal of greater contract clarity by the method of judicial excision of contract clauses. Subsection (3) provides that a term is unenforceable if the party relying on it had "reason to know" that the other party "believes or assumes that the writing does not contain" the term.

78. A Day and Brandt survey, conducted in 1967, reported that 79.7% of consumers sampled in states other than

California and 80.1% of consumers sampled in California knew that banks and credit unions charged lower rates than loan or finance companies. Day and Brandt, supra note 42, at 23. Similarly, Professor Whitford surveyed new car buyers about the various liabilities manufacturers incurred under the standard automobile warranty and then asked these buyers to read the warranties. Although a majority of his sample could not understand the written warranty, the group had a great deal of correct knowledge of the legal results the warranty directed. Whitford, Strict Products Liability And The Automobile Industry: Much Ado About Nothing, 1968 WISC. L.REV. 83, 146-51. These results may obtain because consumers receive information from sources additional to their contracts. It therefore can be something of a non sequitur to infer consumer ignorance from the complexity of contractual language alone.

79. Professor Posner correctly points out that an administrative response would be inadequate unless it provided incentives to consumers to raise complaints and disincentives to firms to pressure the Agency to proceed against effective competitors, but he says that these objectives to some extent are achievable. See R. POSNER, ECONOMIC ANALYSIS OF LAW 272-73 (2d. ed. 1977).