

HOW TO HAGGLE AND TO STAY FIRM: BARTER AS HIDDEN PRICE DISCRIMINATION

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Barter transactions, conducted openly by established corporations, play an increasingly significant role in the U.S. economy; The model developed here helps explain why firms use barter and yields predictions concerning the circumstances under which barter is likely to occur. It is shown that when two firms barter goods used as inputs, price discrimination occurs. This price discrimination is hidden from the firms' other customers because the real values of the transacted goods to the barterers are different from the accounting prices used in the transaction. Since price discrimination that is observed by potential customers might have an adverse effect on the selling firm's future bargaining power, barter will have value as a means of hiding price discrimination.

I. INTRODUCTION

It is standard in economics to assume that when economic agents are given a choice between trading for goods and trading for cash, they will choose the latter. If a good is received in payment, it must be traded again unless, coincidentally, it is identical to one that would have been purchased for cash. The second trade involves not only transactions costs but uncertainty arising from fluctuations in the value of the traded item. Given the rarity of "coincidence of wants," cash transactions will usually be preferred.

There is evidence, however, that growing numbers of businesses are choosing to barter. The structure of such transactions varies from direct barter between two firms to indirect bartering through exchanges. The significance of barter activity is difficult to estimate because no systematic data collection has been conducted. A study by the U.S. Congress [1982] estimates that barter has been growing at a rate of almost 20 percent a year from the mid-1970s, and will probably sustain a 15 percent growth in the immediate future. According to the International Reciprocal Trade Association [1985], the gross volume of the barter exchange industry has been estimated to be \$450 million in 1985, up from \$400 million in 1984. Barter Exchange, Inc. [1984] even claims that barter will account for 15 percent of U.S. GNP by 1990.

Two standard features of this rapidly growing form of exchange argue that traditional explanations of barter might not apply. First, the tax laws treat barter as equivalent to cash transactions (see Keller [1982]). Firms engaging in barter, therefore, have the same tax liabilities as would have been the case had they simply undertaken the equivalent cash exchange. Thus, tax consid-

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erations do not influence the desirability of barter.¹ Second, barterers usually choose to exchange at the terms of trade implied by market prices. Examination of membership contracts of commercial barter exchanges supports this assertion. Keller [1982] notes that the contract of Barter Systems International specifies that goods are sold for trade units with each trade unit representing one dollar of the "prevailing price." Barter Exchange, Inc. [1984] states the same policy using the "normal" cash price of a good. Given valuation at market prices, the absence of tax advantages, and costs associated with in-kind payments, one must ask why barter is increasingly common.

This paper demonstrates that barter, at terms of trade equal to market prices, can be in the mutual interest of two parties. The approach focuses on the fact that firms may want to price discriminate, but will want to hide that discrimination in order to maintain a strong bargaining position vis-a-vis other customers. We show that barter enables both parties to a transaction to practice price discrimination, the effective terms of which are hidden from all other economic agents, including the trading partner.

Section II includes a discussion of why the open use of two or more prices might be costly for firms. The conclusion is that firms have an incentive to conceal price discrimination. Section III examines barter as a vehicle for price discrimination using a simple example focusing on a situation in which two firms obtain production inputs in the exchange. Since the exchange of inputs is the prototypical transaction within barter clubs, this example captures the characteristics of an important segment of modern barter. Using the example, barter, at terms of trade equal to market prices, can have three characteristics: price discrimination is present, is mutual, and is hidden. Section IV formalizes the analysis and shows that, if a firm has an opportunity to price discriminate and hide that discrimination, it will do so. The conditions are derived that show when barter, as price discrimination, can be mutually beneficial to two firms. These conditions allow prediction of which firm characteristics are likely to be correlated with barter activity.

II. THE CHOICE OF A PRICING STRATEGY

The usual analyses of price discrimination ignore the costs of deviating from a policy of charging all customers the same price. These costs include damage to the firm's reputation as a tough bargainer and revelation of cost information that can be used to the firm's detriment in future negotiations.

Suppose a firm employs a strategy of haggling in order to force customers to pay their reservation prices. A high price is offered and then lowered until the reservation price is reached. The customer knows a profit-maximizing firm

1. We recognize that tax evasion may be the motivation behind some barter deals, especially those between private individuals for consumption goods. But the analysis focuses on a type of barter for which tax evasion is not likely to be an explanation. We examine barter between established firms—transactions often conducted through barter exchanges. In such transactions, where the cost of the acquired item is tax deductible, the reporting of the transaction may have little consequence for tax liability. Indeed, in the simple examples presented, a firm's tax bill would be independent of the reporting of barter.

will not offer a price lower than marginal cost. By openly haggling, the seller reveals information about its marginal costs. Riley and Zeckhauser [1983] show that when seller commitment to a pricing strategy is possible the gains to haggling (i.e., price discrimination) can be more than offset by the losses generated by encouraging future buyers to refuse purchases at higher prices.² To avoid these losses the firm must develop a reputation for charging uniform prices. Such a reputation will deter a firm's customers from trying to obtain better prices. One way this reputation can be built is for the firm to follow a long-term policy that eschews recognizable price discrimination.³

Okun [1982, 151] defines reputation as a flow of information from one consumer to the next. Note, then, that if evidence of price discrimination can be suppressed, a firm can maintain its reputation for price uniformity even when it varies the terms of trade among customers. It will be shown that barter allows firms to hide price discrimination from its regular customers. As a result, the benefits of price discrimination can be enjoyed without suffering the costs of losing the reputation for charging uniform prices.

III. THE ELEMENTS OF BARTER

Barter as Implicit Price Discrimination

For reasons made clear below, transactions are examined in which the good acquired through barter is used as an input, substituting for one that would be selected in the absence of barter. Associated with this change in production methods is a change in costs. In this sense, one can think of goods sold for cash and bartered goods as different products: one variety is produced in the normal manner and the other is produced with the bartered input. Thus there exists differentiation both in the mode of production and the terms of sale.

In this section, it is shown that price discrimination can be an important element in barter; this requires a definition of price discrimination appropriate to the present context. When goods produced under identical conditions are sold in different markets, evidence of discrimination is found solely in different prices. When costs differ between markets, however, the definition of price discrimination cannot rest only on price comparisons. One must take into account cost differences, as has been shown in analyses of price behavior in differentiated product markets. Thus, Philips's [1983, 6] approach is followed in determining whether price discrimination occurs:

2. Stigler [1961, 223-24] presents another reason why uniform prices are desirable:

From the manufacturer's viewpoint uncertainty concerning his price is clearly disadvantageous. The cost of search is a cost of purchase, and consumption will therefore be smaller, the greater the dispersion of prices and the greater the optimum amount of search. This is presumably one reason . . . why uniform prices are set by sellers of nationally advertised brands: if they have eliminated price variation, they have reduced the cost of the commodity (including search) to the buyer. . . .

3. While there may be immediate gains to discriminating, the firm must consider the long-run implications. According to Okun [1981, 143] ". . . price discrimination among . . . customers would be destructive to long-term relations."

... price discrimination should be defined as implying that two varieties of a commodity are sold (by the same seller) to two buyers at different *net* prices, the net price being the price (paid by the buyer) corrected for the cost associated with product differentiation.

However, as Philips [1983, 7] recognizes, this definition is incomplete. Differences in net prices might result solely from cost differences, rather than from price discrimination. Therefore, Philips adds a further element:

When some form of product differentiation . . . is introduced in the analysis, price discrimination typically serves to open *new* markets and thus to increase sales [1983, 19].

That is, the variation in net prices must reflect the price discriminator's efforts to maximize profits by pursuing different strategies in different market segments [Philips 1983, 7]. To establish that price discrimination exists in barter, therefore, two conditions must hold: that different net prices are charged in different markets and that new markets are opened up in order to increase overall profits.

In order to demonstrate that barter can be a vehicle for price discrimination, consider a simple example. Firm A (firms and the products they produce are denoted by the same letter) faces a downward sloping demand curve:

$$P_A = 32 - Q_A$$

where P_A is the market price of A and Q_A is the quantity sold for cash at the market price. Firm A faces the following production function:

$$Y_A = L_A^{1/2} K_A^{1/2}$$

where Y_A is quantity produced, L_A is the quantity of labor used, the K_A is the quantity of some second factor of production. It is assumed that K is produced in many varieties, but A can use the cheapest type available. The price of labor is 1 and the cheapest variety of K costs 16. Then, the firm has a constant marginal cost of 8 and, if it does not price discriminate, it will produce 12 units and sell A at a price of 20 to make a profit of 144.

Now consider firm B. It produces a commodity that can be used for A's K input, but the price of B is currently 20. Suppose A offers a 1:1 barter deal, which B accepts.⁴ (Discussion of why B accepts is postponed.) It is assumed that B is not a regular customer of A, and that B will not resell the unit of A acquired in barter. Y_A will now rise by 1 unit, L_A by 4 units, and the K input by $1/4$. However, as A has acquired 1 unit of K in the barter, market purchases of K will fall by $3/4$. Thus, cash revenues remain unchanged and costs fall by 12 ($3/4$ less K must be bought) minus 4 (4 units more of labor). Profits rise by 8.

It is now easy to see that the two conditions comprising Philips's definition are satisfied by this barter deal. Since A's sales to customers other than B have remained constant, the change in profits must be due to the barter transaction. From A's perspective, the net price to B (price minus cost, which equals the

4. It is assumed that A practices second degree price discrimination but the range of prices is restricted to the market price and the price charged in barter. In reality, a firm would charge a range of implicit barter prices.

change in profits) is 8, which is different from the prevailing net market price for A of 12 (the market price of 20 minus the marginal cost of 8). The barter has raised A's profits; an extra customer has been attracted by offering conditions better than those previously prevailing.

The example has shown that barter can be profitable to A. One can easily imagine conditions in which the transaction is also profitable to B. For example, suppose B faces market and cost conditions similar to those of A. Suppose the good A could be used as B's nonlabor input. Then, B would have profited from barter in exactly the same way as A. Therefore, two firms with market power can both profit from bartering at the rate implied by market prices. The extra profit arises from price discrimination.

Simple intuition shows why the barter can be profitable for both A and B. When price is above marginal cost, inputs are being used in inefficient quantities. If the two firms produce inputs for each other, they can, without changing their use of other inputs, exchange products and consequently raise their combined net physical output. Something for nothing has been created as a consequence of the inefficiency of the original position. Thus, the example does not rest on any peculiarity of the production functions faced by the two firms. Rather, the possibility of mutually beneficial barter arises from the potential gains from trade that must be present in any monopoly equilibrium.

The use of a model in which barterers supply each other with inputs is explained below. Now, however, the plausibility of this construction is addressed. Consider an example of barter between a magazine and a computer company, cited by *CFO* [March 1985]. The computer manufacturer advertises in the magazine, while the magazine uses computers. Each provides an input usable in the other's production process. There are similar products, however, that can play the same role in production. At market prices, each producer purchases inputs from other suppliers. Given the discounts implicit in price discrimination, however, this particular transaction becomes attractive to both partners.

This situation is most likely to occur within industries producing and using differentiated products. The use of a differentiated product as an input provides the flexibility required to make barter feasible and attractive to both the "buyer" and "seller" of the traded good. Returning to the example cited above, the computer company and the magazine prefer not to purchase each other's variety for cash at prevailing market prices. (For example, they may not need some special feature for which other customers are willing to pay.) But, if given those special terms that are implicit in barter, each company will choose to use the other's product.⁵

How Barter Hides Price Discrimination

Riley and Zeckhauser [1983] conclude that a firm having the ability to price discriminate might choose not to do so because of the adverse effect of haggling

5. There are numerous other examples of the type of barter deals described here. See *CFO*, March 1985.

on future bargaining power. However, that conclusion rests on the assumption that a firm's actions are fully observed by prospective customers. If a non-uniform price structure can be hidden, the firm might discriminate. Barter will be shown to hide price discrimination.

Price discrimination occurs when a firm generates greater profits by offering a variety of prices. Discrimination is hidden when the range of prices cannot be detected by customers. In barter, exchange is undertaken at "official" prices: accounting information reveals nothing to other customers. Evidence of price discrimination can be found only in the fact that the true cost of the transaction, the effective price, is lower than the market price. Finding effective prices, however, requires knowledge of the firms' production functions. In our example, one would have to know A's production function to determine the net price charged to B. Not only will these customers be ignorant of the effective prices implicit in the barter, but even B does not know to what extent the net selling price to A is less than market price. Each participant's effective terms of trade are hidden from the other participant.

There are two senses in which price discrimination can be hidden. One is qualitative—the simple fact of its existence. The second is quantitative—the extent to which prices vary between market segments. If discrimination is hidden in the first sense, it must be hidden in the second. But the converse is not true. Thus, we ask whether barter can be advantageous even if price discrimination is not hidden in the first sense.

Open price discrimination reveals information about a firm's costs. Customers charged the higher price know that marginal costs are no greater than their price *minus* the price difference between the two markets. Thus, they obtain quantitative information on marginal costs, which can be used in future bargains. In contrast, when the price difference is hidden, customers paying the higher price learn only that marginal cost is below their price. This fact could already be deduced from the knowledge that the seller has market power.

In barter, the quantitative degree of price discrimination is hidden even from the partner in the exchange. Thus, even if everybody understands that barter implicitly involves price discrimination, it might still be used. By obscuring the effective terms of trade and, thereby, quantitative information on the differences between prices and marginal costs, barter has advantages over standard price discrimination.

The above observations reveal why firms do not openly resell the goods obtained through barter. In reselling, firms will need to offer a lower-than-market price.⁶ In offering the bartered good at a lower price, firms reveal information about their marginal costs. This revelation is at odds with the original motivation for undertaking barter.

6. If price discrimination is implicit in A bartering, A will exchange with B only if any resale must occur at below-market price. Such would be the case, for example, if nontransferable warranties were important in the sale of A, or if A could make resale difficult. The example conforms to these cases. The computer company can choose to honor a warranty only with the original owner. The magazine can effectively control the use of its advertising space.

Given both the rarity of “coincidence of wants” and the advantages of hidden price discrimination, this argument predicts the development of institutions which enable firms to undertake multilateral exchanges that disguise price concessions. These institutions will broker exchanges between a variety of firms, none of which knows the effective terms-of-trade received by trading partners. Hence, the barterers will require the brokers to “resell” at prevailing prices. If buyers were forced to pay the market price in cash, however, they would prefer to buy directly from the manufacturer. But if buyers can pay in kind and thereby price discriminate, they might find the “price” offered by the broker attractive.

Our theory, therefore, helps explain why barter exchanges exist. They are a means of combining one advantage of cash exchange with one advantage of barter. First, as in cash exchange, trades are not constrained by the search for a bilateral coincidence of wants.⁷ Since many firms can participate in the exchanges, a variety of goods is available. Second, as in bilateral barter, a sale can be accounted at market prices, without those prices implying anything about the true worth of the transaction to the seller. Because of limitations on its use, a “dollar” that can be spent only at a particular barter exchange must be worth less than a dollar of cash. This feature of barter exchanges allows price discrimination to be hidden. No brokerage based on cash exchange at prevailing prices would have this property.

Why the Price Discrimination Must Be Mutual

It has been assumed so far that both firms are able to price discriminate. Given that assumption, both firms profit from trading an additional unit of output through barter. Within the context of the model, barter will occur only if the price discrimination is mutual.

Returning to the previous example, for brevity’s sake, B is assumed to have the same demand and production functions as A, even though these firms produce quite different goods. The assumptions that B was not one of A’s regular customers and that B could not resell the unit of A obtained allow A to engage in price discrimination. To establish the necessity of mutual price discrimination, let us examine the consequences if these assumptions about A are correct, but the analogous assumptions about B do not hold. (That is, A is able to sell the unit of B at close to market price.)

If A could obtain the market price for the unit of B gained in barter, that price would fall to 19. B’s revenues from its regular customers would fall by 12 and its costs by 8. B’s total profits would fall from 144 to 140, as a result of the barter. Thus, if B cannot maintain market separation or, indeed, cannot price discriminate for any other reason, the barter transaction would not be consummated at rates of exchange implied by market prices.

Unless barter offers B price discrimination advantages, B will require an exchange on terms better than those implied by market prices. But such terms

7. Firms will want to know which other firms participate in the exchange. They must ensure that none of their high-price customers are participating.

reveal information to other customers about A's marginal costs. A cannot accept such terms. Thus, barter will not proceed if B cannot price discriminate. Mutual price discrimination is necessary for barter.

IV. A MODEL OF PRICE DISCRIMINATION THROUGH BARTER

It has been shown both that price discrimination is intrinsic in barter, and that barter hides price discrimination. The formal model developed next allows identification of the conditions under which firms choose to price discriminate by barter. These conditions, which are framed in terms of simple properties of cost functions and prices, are also used to derive conclusions concerning the types of industries and firms that are most likely to barter.

The derivation of the results is in two steps. The decision to price discriminate is examined first. This step is necessary because, in our view, the decision to barter is effectively a decision to price discriminate. To allow latitude in that decision, it is assumed that discrimination can be costly—that the dual-price structure might become generally known and that, as a result, the firm must give regular customers a lower price. In the second step, the special characteristics of barter are introduced into the model.

The model builds upon the example presented in section III. The firm undertakes a simple form of price discrimination.⁸ The firm first finds the single-price monopoly output and then seeks customers who, while unwilling to pay the monopoly price, are willing to pay more than marginal cost.⁹ Market 1 is the primary market and the hidden price discrimination occurs in market 2. The firm faces $D_1(q_1)$, the inverse demand curve for the market as a whole; (p_1, q_1) is the price-quantity combination in that market. Once the firm has fixed (p_1, q_1) , there will be a set of possible price discriminating transactions. For these transactions, the inverse demand curve is $H(q_1, q_2)$ and (p_2, q_2) is the price-quantity combination. The first argument of $H(\cdot)$ is included because the range of opportunities open to the firm in the secondary market depends upon the equilibrium in the primary market.

Initially the producer considers whether to price discriminate. If this price discrimination is not discovered by customers paying the higher price, the producer will earn profits in excess of the single-price monopoly profits. If it is discovered, customers currently paying the higher price will know that the producer's marginal cost is less than the lower price. The firm will lose the ability to stay firm at the higher price [Riley and Zeckhauser 1983]. If the price discrimination is discovered, the firm will be forced to charge the same lower price to all customers.¹⁰ Hence, an abortive attempt to maintain the

8. We show that the firm will undertake even this highly restrictive form of price discrimination. Then, *a fortiori*, a firm will undertake price discrimination when faced with a more flexible situation.

9. More specifically, the firm finds the monopoly price, taking into account the effect of that price on opportunities for price discrimination.

10. It is assumed that the firm will not be forced to charge the price of the second market; rather, it has to sell at a price lying between the two prices. This assumption is made because it is necessary in the barter model, where the price in the second market does not exist.

secrecy of price discrimination will result in profits lower than the single-price monopoly profits.

The firm's decision depends on a balancing of the gains from successfully hiding price discrimination versus the losses if it is discovered. To formalize the firm's decision, the function $M(q_2)$ is introduced—the probability that customers paying the higher price learn about the lower price. It is assumed, trivially, that $M(0) = 0$ and that $M'(q_2) > 0$. A stronger assumption to be invoked is that $M(q_2)$ is continuously differentiable. In conjunction with the other assumptions, continuity means that there are opportunities for price discrimination that have a small probability of detection. If $C(q_1 + q_2)$ is the cost function, a risk-neutral firm will maximize

$$M(q_2) [D(q_1 + q_2) \cdot (q_1 + q_2) - C(q_1 + q_2)] \\ + [1 - M(q_2)] [D(q_1) \cdot q_1 + H(q_1, q_2) \cdot q_2 - C(q_1 + q_2)] \quad (1)$$

The only constraint on the firm's actions is that $q_2 \geq 0$, which when binding indicates that the firm has decided not to discriminate. One can then prove the following.

THEOREM 1. *Maximization of (1) will lead to $q_2 > 0$. The firm will always choose to price discriminate.*¹¹

Theorem 1 shows that the modelling of the decision to price discriminate is not restrictive. Thus, when barter is embodied in the analysis, any necessary conditions for the profitability of price discrimination that arise must derive directly from the nature of barter itself, rather than from any peculiarities of the model.

Adapting the model to the specific circumstances surrounding barter, we return to the example of firms A and B: B is a customer in market 2 and q_2 is the amount of A bartered to B. As barterers trade at market prices, one unit of A exchanges for $D(q_1)/P_B$ of B. As before, B is an input into the production of A, although not necessarily one chosen by A under other circumstances. Since B is used to produce A, A's cost function must be modified. Let $C[q_1 + q_2, q_2, D(q_1)/P_B]$ be the total cost¹² of producing $q_1 + q_2$, given that q_2 units of A are to be exchanged for $q_2 D(q_1)/P_B$ units of B. Firm A maximizes

$$M(q_2) \{D(q_1 + q_2) \cdot (q_1 + q_2) - C[q_1 + q_2, q_2, D(q_1)/P_B]\} \\ + [1 - M(q_2)] \{D(q_1) \cdot q_1 + D(q_1) \cdot q_2 - C[q_1 + q_2, q_2, D(q_1)/P_B]\} \quad (2)$$

Given the above assumptions, the next theorem can be proved.

THEOREM 2. *If at the non-price-discriminating monopoly equilibrium, market price is greater than the marginal cost of production using the bartered good, a firm will find it profitable to barter.*

Applying theorem 2 to both firms, one obtains conditions for the barter deal to be consummated. Of course, the theorem would be empty if the conditions could not be simultaneously satisfied for both firms. However, the earlier example shows that the conditions are not restrictive. In that example, two

11. Proofs are available, on request, from the authors.

12. The total cost is calculated with good B valued at the market price, P_B .

firms with “normal” production functions and facing “normal” demand curves found a barter deal mutually profitable; theorem 2 holds in the example.

With additional assumptions concerning the comparability of the bartered input and the firm’s regular inputs, theorem 2 can be strengthened in an enlightening way. Let us analyze the decisions of firm A. Suppose A usually uses a good K as an input. Goods K and B are indistinguishable for A’s purposes. The price of K, P_K , is less than P_B and, before barter, A chooses to use K. Let MC_A be the marginal cost of producing A when K is used—the marginal cost in the pre-barter equilibrium. Then it is easy to prove the next theorem.

THEOREM 3. *Firm A will find it profitable to barter with firm B if*

$$P_A/MC_A > P_B/P_K.$$

Theorem 3 identifies the conditions under which barter is likely to occur. To best understand these conditions, examine each side of the above inequality separately. The fact that barter is more likely the greater is A’s market power can be seen from the left-hand side. The right-hand side shows that barter is more probable when a firm can choose between inputs that perform the same function in its production process and that have comparable prices. Of course, for barter to be consummated the equivalent of theorem 3 for B must also be satisfied. One must ask, therefore, whether firm B can have some degree of market power *and*, simultaneously, that goods B and K can be close substitutes from firm A’s viewpoint. This simultaneous requirement is entirely plausible if B is part of an industry with highly differentiated products.

Firm B, and the producers of rival products, could have two very different sets of potential customers. The regular buyers of B value highly its special characteristics. B has some degree of market power over these customers. There are also potential customers, such as A, who do not value the particular features of B, but use as an input a product that has the same basic characteristics. If B must avoid haggling, and the customers who value the products’ special characteristics are numerically dominant in the market, B might set a high price, using market power over those customers who value B’s special characteristics. The price of B will then be well above marginal cost; theorem 3 will be satisfied in the version relevant to B’s decisions. At the same time, the price of B may be close to the prices of rival products; theorem 3 will be satisfied in the version relevant to A’s decisions.

Given the prevalence of differentiated product industries in modern economies, the conditions of theorem 3 seem unrestrictive. Indeed, the example of the exchange of an advertisement in a magazine for a personal computer conforms exactly to the situation discussed in the previous two paragraphs.

V. CONCLUSIONS

One argument has been developed showing why firms might choose to barter rather than trade for cash. Barter allows firms to avoid a cost of price discrimination: the revelation of information that can be used to the firm’s detriment in future bargains. Although the theory does not rely upon the

existence of any institutional barriers to trade, the desire to circumvent legal restraints, e.g., the Robinson-Patman Act, might provide a further motive to price discriminate through barter. In such a case all the analysis of the paper applies except that in section II.

The theory also gives one reason why barter exchanges exist. The primary disadvantage of bilateral barter is the cost of finding a partner for the transaction due to the improbability of a coincidence of wants. Participation in an exchange provides the price discrimination advantages of barter while loosening the constraints of finding a coincidence of wants. The model, however, predicts a limit on the growth in the size of these exchanges. To preserve the effectiveness of their price discrimination, firms will want to avoid the possibility of bartering with their regular customers. Thus, barter exchanges must remain small enough for any firm to know that there is only a slight probability that one of its regular customers is a member.

This paper presents a positive analysis of one reason for the existence of barter. It is fitting, however, to end with a comment on welfare implications. The welfare consequences of barter are similar to those of standard price discrimination, but with an added element. In the present case, a firm hides price discrimination by searching for a "buyer" who can supply an input of production. In all likelihood, a cost-minimizing producer would not use this input. Thus, an element of inefficiency in production might be introduced. Weighed against this inefficiency is the fact that barter allows a firm to maintain a uniform price structure, which may reduce consumers' search costs.

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