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BARTER'S BACK! INTERNET BARTER: THE RECENT RESURGENCE OF AN ANCIENT PRACTICE

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Abstract

A barter transaction allows for two parties to exchange goods or services without using money. Direct barter is often referred to as the “double coincidence of wants” and requires that each of the two parties involved in the transaction each have a good satisfying a specific need of the other party. This results in high transaction costs, primarily associated with the search to find the “double coincidence” necessary for a direct barter transaction. There is an additional cost due to the uncertainty of the value of the goods traded. This cost is primarily associated with the need for the receiving party to use the traded good or to trade it in another transaction. Indirect barter uses an intermediary good in the exchange, such as a trade token. The prevalence of barter is expected to be limited due to high transaction costs because the time and effort involved in the transactions would be costly. However, the use of barter appears to be increasingly on the rise. A major contributing factor to this growth is the use of existing and emerging electronic commerce technologies, such as search engines and transaction processing systems, that may be used over a global network of hundreds of millions of users. This paper gives an overview to barter, gives some examples of Internet-based barter networks, and introduces likely characteristics of electronic based barter market mechanisms. Future research in this area will include economic modeling of electronic commerce based barter systems and the explicit design of online barter market mechanisms.

Keywords: Barter, electronic commerce

Introduction

Background

Barter, the oldest form of commercial transaction, may be defined simply as the trading of goods or services without the use of currency. Barter is familiar to most of us from the early days of our childhood with the trading of baseball cards or the trading of brown bag lunch snacks in our grade-school cafeteria. While money transactions have largely replaced barter transactions in modern exchanges, barter still remains a very important and widely used means of exchanging goods and services. Barter transactions are reported to account for over 30% of the world's total business (U.S. Department of Commerce).

However, barter has received very little attention in economic and business literature (Healey 1996). Fisher explained this in 1985 by stating knowledge about barter is, in itself, a competitive advantage. Therefore, the successful executors of barter are reluctant or unwilling to explain how they successfully conduct barter transactions (Fisher and Harte 1985). Perhaps a better explanation for the sparse literature on the subject of barter is due to scholars' acknowledgement of the numerous shortcomings of barter economies, such as inherent inefficiency, trader risk, and legal complications. Despite these shortcomings, barter is still a widely used form of transaction in the U.S. and abroad. While the broadest use of barter can be seen in the Far East, especially in mainland China, we have also seen a great increase of barter in various other countries, like Russia, where the instability in currency serves as the motivation for firms and individuals to use barter. Most interestingly, we have even seen an increasing trend of the use of barter, in countries like the U.S., where the strength in currency, as well as legal barriers, have previously served as a disincentive for barter.

Barter versus Money Transactions

A barter transaction allows for two parties to exchange goods or services without involving money. In monetary theory, money is viewed as having three basic functions: (1) as a measure of value, (2) as a means of payment, and (3) as a store of value. Direct barter is often referred to as the “double coincidence of wants” because it requires that each of the two parties involved in the transaction each have a good satisfying a specific need of the other party. Therefore, the extent of barter is expected to be limited due to high transaction costs. The amount of time and effort required for barter transactions is typically large and therefore barter transactions tend to be costly (Rousseas 1972). The creation of money has served to reduce the transaction costs.

There are two primary types of barter, direct and indirect. Direct barter is the direct exchange of goods between two parties. Indirect barter involves the use of some sort of intermediary good, for instance gold, where a good is exchanged for the intermediary good, and then that good is exchanged for the good from the other party (Rousseas 1972). Through a historical lens, we view the evolution from direct barter to indirect barter, and then to cash, as a way to reduce the high cost of exchange transactions (Hicks 1967). In addition to the transaction costs of barter, there are additional costs due to the uncertainty inherent to barter. That is, if a good is received in payment it must be traded again unless it is identical to the good that would have been purchased for cash. The second trade of the good received in payment involves not only the normally high barter transaction costs, but also a potential cost due to the uncertainty that arises from fluctuations in the value of the item traded (Magenheim and Murrell 1988). Money, as a store of value, also serves to reduce the cost of this uncertainty.

Barter economies are inefficient when compared to fiat money economies (Banerjee & Maskin 1996). Given the rarity of the “coincidence of wants”, most firms will prefer cash transactions (Magenheim and Murrell 1988). In spite of the noted inefficiency due to high transaction costs and inherent uncertainty costs of barter, barter transactions are still often preferred over cash transactions. Current trends clearly indicate that the use of barter is on the rise worldwide. Specifically, there is an increase in Internet-based barter transactions and the trend shows a steady increase over the past couple of decades. This recent phenomena is striking and invites the curious to ask the question “why?”

Barter in a Digital Economy

In 1982, the U.S. Congress estimated that barter has been growing at a rate of almost 20 percent a year from the mid-1970s. In 1985 the International Reciprocal Trade Association estimated that the gross volume of the barter exchange industry at \$450 million, in 2000 that same estimate was \$7 billion (Magenheim and Murrell 1988 and the International Reciprocal Trade Association). The Economist estimated that in 1998 roughly \$10 billion in goods and services were bartered, either offline or on the Internet (2000). Interestingly, barter today accounts for 30-40% of World’s total business (U.S. Department of Commerce) and other sources claim that 25% of the worlds exports are now bartered (American Countertrade Association) and that over 250,000 U.S. companies and 80% of the Fortune 500 companies engage in barter.

There are two traditional explanations for the existence of barter (existence given the high transaction costs and uncertainties). These explanations are (1) that barter allows for a reduction in tax liability; and (2) that barter exchange is valued at the terms of trade implied by market prices (Keller 1982). Both of these explanations make sense. However, these explanations are rather restrictive as firms normally will have the same tax liability for barter transactions as cash transactions (except in the case of very small transactions as mentioned later in the paper). And furthermore, that while it may be beneficial to both parties to barter “at terms of trade equal to market prices”, historically this benefit has rarely been enough to offset the transaction and uncertainty costs inherent to barter. Fortunately, there is another likely explanation for the increased use of barter in the U.S. and worldwide. That is, the use of existing and emerging electronic commerce technologies in electronic barter networks has caused a large reduction of the costs normally seen in barter transactions due to inefficiencies and uncertainty. We may be tempted to view the resurgence and current proliferation of barter networks as similar to the resurgence in auction trade in recent years. In other words, barter is back! The development and increase in the use new technologies, especially electronic commerce technologies, search engines, networking and Internet technologies, and the use of intelligent agent technologies will extend the prevalence and reach barter networks. The Internet will play a leading role in this resurgence and will serve as the primary conduit for the rebirth of barter economies worldwide.

Internet Barter Research

The two primary areas of this ongoing research will be (1) to investigate through economic modeling and comparative static’s the changes in the barter systems due to the use of existing and emerging information technology technologies and (2) to design incentive based barter mechanisms with the ultimate goal of automating electronic commerce based barter transactions. This

paper presents ideas about significance of electronic barter in the digital economy and provides some motivation for research in this area.

First, this paper provides an overview of existing barter networks in the electronic marketplace and briefly discusses the need for the development of new economic market mechanisms that will facilitate Internet-based barter networks. The research is motivated here with anecdotal evidence that is presented to make the case that the Internet has served, and will serve in the future, to increase the prevalence of barter as a means of exchange through electronic networks. The growth of barter networks may be compared to the explosive growth in online auctions markets. This is supported by anecdotal evidence. It is clear that recently there has been substantial growth in the number of barter networks, as well as the number of markets served by barter networks. I expect that an economic study of electronic-based barter networks will yield a result consistent with the anecdotal evidence presented in this paper, that electronic commerce technologies are a large contributing factor in the increase in use of barter transactions.

This paper approaches the design of barter market mechanisms through a short discussion about the characteristics that are likely to be built into these mechanisms. The development of barter mechanism for Internet-based barter networks will allow barter networks to flourish in the Internet age. I expect that future research in this area will yield incentive compatible market mechanisms that will allow for Internet barter networks to be automated in the near future.

Existing Online Barter Networks

Some Characteristics of Internet Barter Networks

In promoting barter, the firms running some of the Internet barter networks have used several very persuasive arguments in an attempt to promote the use of their barter networks. First, they state that barter can help to increase customer base (industry boasts by 5-15%). The increased customer base comes from other firms that belong to the exchange. Some of these firms have a need for goods; however, lack the resources necessary to purchase the goods, which brings us to the next benefit of barter. Second, barter may be used as a means of alternative financing. Companies who face serious cash flow constraints may use barter to get around using cash to make purchases. Barter allows these firms to obtain goods without using valuable cash resources. Third, barter allows firms to tap into another outlet for surplus capacity or inventory. Often, firms that experience excess capacity or high inventory levels will try to move the inventory or capacity at a loss to cover the fixed costs of production. Barter networks are another channel to offload the excess. Finally, on a business to consumer or a consumer to consumer level, barter may actually improve the quality of life for the consumers. One example is the concept of "time-share" condominiums that are traded and swapped. For example, if I own a time-share in Florida giving me the right to stay there two weeks in January, I could trade that with someone who has a time-share in Puerto Rico for two weeks in March. Both consumers are better off due to the barter transaction.

Some Advantages of Internet Barter Networks

The Internet has indeed added a new dimension to barter in the U.S. economy. One example of an Internet barter network that has been very successful is the company Link-exchange, ITEX. Link-exchange is a business started by three Harvard business school graduates that has been built upon the barter of web advertisements. The concept is simple. Members of the Link-exchange will, for every two banner advertisements put on their own web-site, receive in exchange for one advertisement placement on another website owned by a member of the Link-exchange network. Transactions were virtually cashless. Link-exchange was bought by Microsoft in 1996 (ITEX, <http://www.netlabs.net/biz/itex/>).

Recently, we have seen further evidence of the advantages of Internet barter over money transactions. A recent ruling by the Internal Revenue Service on bartering for some Internet advertising was reported by a Los Angeles Times article that states that the ruling:

“...will reduce cumbersome tax reporting requirements and remove potential legal liability. Tax law requires companies that exchange banner ads on each other's Web sites under barter arrangements to report the value of the transactions. The IRS said it wouldn't require Web site owners to report any bartering transaction involving property or services less than \$1. Technology firms had said that without relief, IRS rules could have compelled companies to file thousands, or even millions, of notices that inform the IRS of the ad barter

agreements. The IRS notice applies to barter transactions that occurred in 1999. The IRS also said it wouldn't penalize companies for failing to report earlier barter agreements valued at less than \$ 1. That exclusion would cover many ad barter arrangements..."

(Los Angeles Times 2000). The above IRS ruling will further encourage the growth of Internet barter networks.

Some Examples of Internet Barter Networks

There are a great number of products and services that we may envision being bartered on the Internet where the cost per trade is less than a dollar. In addition to online advertisements including the swapping of banner ads valued at less than a dollar per impression or click-through some of additional products that are being sold in small valued units (with a value less than a dollar) are program applets, news articles, information such as query answers from online databases, and digital music. It is conceivable that these products and services will be bartered tax free over the Internet as long as the above ruling stands. Some firms operating in cyberspace, such as Edgar Online and Verticalnet, report that 24% or more of their revenue comes from some form of Internet barter. This will amount to considerably large tax savings for such firms.

Many networks have implemented units know as "trade shares" in order to make barter transactions more efficient. In fact, there are over 250 examples of the use of trade shares in barter network (see Figure 1 below).

- Ithaca
- Time Dollars
- P.E.N. Shares
- Deli Dollars
- Cayahoga Hours
- Farm Preserve Notes
- Mountain Money

Figure 1. Some Examples of Trade Shares

Information technology has further enabled the use of trade-shares in barter. In some instances in the electronic commerce business space, cash has all but been entirely eliminated. Standardized data systems that allow cashless exchange has been developed and will continue to be further developed (The Unstoppable Economic Tidal Wave [2000]). The same systems that are currently being designed to track units of "virtual cash" may be used trade shares in the transaction of trade shares that have no cash basis.

Even prior to the Internet and enabling technologies barter has often been preferred over money transactions for many companies and for various reasons. There has been a boom in Internet barter networks a few are listed below:

- ITES (corporate and Retail – industry leader)
- RTE (Retail – centralized and computerized, Rochester, NY)
- Surplus Exchange (Corporate and Retail – 1,400 NP organizations, Kansas City)
- Trade Exchange
- Mother's Nature (Retail – baby products)

Figure 2. Some Examples of U.S. Internet Barter Networks (over 400 such networks exist)

The Future of Internet Barter Networks

We should expect to see a great increase the use of barter networks in the near future as barter becomes attractive for markets previously not suitable for barter and an increasing scope of products and services. In fact, the Internal Revenue Service (IRS) has already realized that Internet barter is on the rise and there is a daunting increase in small barter transactions (such as the bartering of web banner and pop-up advertisements). Due to the large volume of small change barter transactions and the current

difficulty associated with tracking these transactions occurring on the web, the IRS has understandably decided not to enforce tax of barter transactions with a value of less than \$1. New technologies will be developed that will further promote barter by linking networks of traders world-wide, improving search techniques to make it easier to match trader preferences, and improving the record keeping of barter transactions, and otherwise providing value to the traders in terms of “quality of life” and entertainment.

Barter Mechanisms for Automated Internet Barter

New barter mechanisms are necessary to facilitate the electronic market support of barter and new barter mechanisms will be developed. These mechanisms should be designed so as to make up for the current shortcomings of barter transactions and should at least include the following features. First, the barter mechanism should reduce the risk of a trader being stuck with low quality and unwanted goods. These issues are now being addressed and implemented by online auction sites such as E-bay, in the form of auctioneer ratings and product guarantee insurance.

Next, perhaps the greatest inefficiency in barter transactions is associated with the high search costs. Barter trade implies that two or more entities are willing to engage in a mutually beneficial trade. By and large this is the most formidable problem in establishing a barter relationship. Barter mechanism design and the use of intelligent agents to seek out and negotiate barter transactions will soon be a reality. Mechanisms design for of automation of and search based on multiple attributes by proxy agents is currently on the forefront of auction research (Sunderam and Parkes 2002). Furthermore, as with traditional markets and auctions, Internet commerce reduces these inefficiencies by greatly increasing the pool of parties willing to trade goods and services combined with increased searching power.

Finally, the legal aspects of barter remain and are inevitably troubling for barter transactions. U.S. tax, anti-trust, and trade laws are worrisome to many firms that would otherwise participate in barter transactions. Firms will have to find ways to abide by trade and tax laws while conducting barter transactions as they do with currency trade. The challenge will be in the proper accounting of barter transactions. Fortunately, technological advances in transaction processing and accounting systems will allow for efficiencies in accounting for barter transactions. We should expect research in this area the booming resurgence of barter by e-commerce to precipitate new areas of economic and tax research.

Future Research

The renewed role of barter in the digital economy is indisputable. The recent trend of growth and emergence of barter networks and the number of markets that they serve will surely continue. Future research should strive to show this clearly through economic modeling. Another promising area of future research is in designing market mechanisms that will mitigate the uncertainties of barter and serve to reduce the high transaction costs of barter by explicitly addressing the design of these mechanisms. A very specific area of Internet barter research in this area will involve the development of intelligent agents that will facilitate searching and the automation of barter negotiations that can accommodate multi-agent, multi-attribute, products and services. Another very rich area of research belongs to the accounting world and will deal with efficient methods to account for large volumes of small barter transactions. Accounting interest in this area is sure to grow as the volume of barter transactions grows. While Internet barter may never achieve the incredible growth of online auctions, electronic barter is clearly a growing area that will have a great impact on our economy in the future and should be seriously studied.

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