

THE EMERGENCE OF COMMODITY MONEY ALONGSIDE A FUNCTIONING FIAT MONEY

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ABSTRACT

This study describes an actual situation where local pharmacies buy and sell prescription drugs to each other using one drug, Prevacid™, as the “money” to fund the transaction. The advantages of using Prevacid instead of the readily accepted fiat money (US dollars) in these transactions are noted. In addition, the emergence of Prevacid™ as money is compared and contrasted to Radford’s commonly used example of cigarettes as money in prisoner of war camps during World War II. This study should serve as a useful example of the functions of money in introductory economics classes, as well as to describe how and why commodity money comes into being.

INTRODUCTION

Do you ever wonder how your pharmacy always (or nearly always) has the prescription medication you need when you need it? Grocery stores often find themselves short of bread, or milk, or some item that is on your shopping list. Everyone has experienced the frustration of going to the shoe store and finding the perfect shoe, only to discover that they do not have it in your size. How is it that pharmacies, with hundreds of drugs behind the counter, successfully manage to maintain an inventory that supports a nearly perfect on time delivery record, when other businesses frequently find themselves short of a particular item?

Pharmacies in a small community in southeast Georgia (USA) enhance their chances of delivering the requested prescription drug by cooperating with one another in an exceptional manner. If one pharmacy finds itself short of a particular medicine, it calls a local competitor and asks if they have that particular item. If the requested pharmacy finds itself short of another drug, a barter exchange is negotiated, enabling both pharmacies deliver the product to their customers with unerring efficiency. Given the size of the community, all of the pharmacists know one another. They may have

previously worked together in the local location of a national chain, such as CVS, but now may work for different pharmacies, or may have even opened their own pharmacy. Speaking with local pharmacists, none could recall a time when they did not exchange pharmaceutical products with each other.

However, the most common inter-pharmacy exchange involves neither cash nor a direct barter exchange. Rather, a system has evolved where drugs that are commonly exchanged are priced in terms of one specific drug, Prevacid™. Prevacid™ (generic name: Lansoprazole) is manufactured by TAP Pharmaceuticals to treat gastrointestinal disorders. It is commonly prescribed for those who have acid reflux disorder. Its sales make this drug one of the top 20 pharmaceutical products, with revenues in excess of \$3 billion per year.

PREVACID™ AS A MEDIUM OF EXCHANGE

The exchange of a particular drug for Prevacid™ is an exchange of equivalent dollar values of the drugs. For instance, if Lipitor™ (a cholesterol medication from Pfizer) costs \$10 per tablet and TAP Pharmaceuticals charges \$2 per Prevacid tablet, then 100 Lipitor™ (worth \$1000) would cost 500 Prevacid™ (also worth \$1000). Likewise, if Singulair™ (asthma medication from Merck) is \$6 per tablet, then 100 Singulair™ would cost 300 Prevacid™ in this \$600 transaction. Since these exchanges are for equivalent dollar amounts, Prevacid™ can be used to “buy” liquid medications as well.

Prices from the major drug manufacturers are relatively stable. There are no “seasons” associated with hypertension medication as there would be with “back to school” supplies in the fall or jewelry at Christmas and Valentine’s Day. However, on those rare occasions when a drug price does change, then the pharmacies continue to exchange an equivalent dollar amount of Prevacid™ for the other drug.

Thus, Prevacid™ serves as money in these transactions, much like gold, salt or cigarettes have done in the past. Money is generally acknowledged as having three functions: the medium of exchange; the unit of account; and a store of value. (See any introductory economics text, such as Mankiw (2009), Baumol and Blinder (2009) or Bade and Parkin (2007).) For this particular inter-pharmacy market, Prevacid™ takes on the medium of exchange function of money. While the specific drug that serves as the medium of exchange has changed over time, the primary requirement, that the drug is a fast mover, has remained constant. The dollar continues to be the unit of account, as the dollar establishes equivalent values, and also a store of value.

While most of our purchases use the dollar as the medium of exchange and unit of account, it is not a requirement that these two functions be performed by the same asset. Indeed, while the medium of exchange needs to exist, the unit of account need not exist. For instance, in 19th century England, many services were priced in guineas. A guinea was a pound and a shilling, or twenty-one shillings (since twenty shillings equaled a pound sterling). There was no single note or coin that equaled a guinea. In the United States, the well-known saying, “shave and a haircut, two bits” implied the shave and a haircut would cost 25¢. While a two bit, or 25¢, coin existed, there was never a 12 ½¢ coin that equaled a single bit. However, the absence of a coin equal to a guinea or a bit did not make those measures any less effective or less efficient as the unit of account.

The efficiencies that result from this “monied” exchange over barter are many. The “buying” pharmacy is able to acquire a product needed to fill a prescription locally much faster and less expensively than from the manufacturer. Acquiring the product locally merely means driving to the competing pharmacy and swapping the Prevacid™ for the desired product. This transaction need not be completed by a registered pharmacist, but can be handled by a less expensive employee, such as a pharmacy technician. While Prevacid™ is dispensed only by prescription, it is not a controlled substance, such as Ritalin™ or Oxycontin™. With little or no street value, there is little threat the pharmacy technician would be tempted to steal the Prevacid™ in order to sell it illegally on the street. In addition, with little or no street value, there is no need to provide the significant security (at a significant cost) that would be required if controlled substances or cash were being transported. The “buying” pharmacy may find itself temporarily with an excess inventory of Prevacid™. However, this excess supply is easily ameliorated by reducing the amount of Prevacid™ on the next order.

OTHER EXAMPLES OF COMMODITY MONEY

The classic example of a commodity evolving into a medium of exchange is the use of cigarettes in prisoner of war (POW) camps in Germany during World War II, as described by Radford (1945). Prisoners traded items from Red Cross packages, such as canned milk, chocolate, canned meat and cigarettes. Rather than engage in barter to exchange unwanted items for those items they preferred, POWs began accepting cigarettes in exchange. Cigarettes, once accepted, met the minimal criteria for a medium of exchange. They were of small enough value individually that further divisibility was not required. Cigarettes also “maintained their value,” which is to say, they did not spoil. While the multiple exchanges from buyer to seller would certainly

have reduced the value of a traded cigarette as a smoke, Gresham's Law insured that only the cigarettes that were least desirable as a smoke were used as a medium of exchange. Since the lower quality cigarettes were used as money, the cigarettes' loss of value as an intrinsic commodity was minimized.

Senn (1951) describes how cigarettes also served as money in post-war Germany, specifically from 1946 through 1948. Currency conversion between the dollar and Reichmarks (as well as between the English pound and the Reichmark) was arbitrarily established at a non-equilibrium exchange rate. The occupation army, mainly American and British soldiers, had no incentive to lose purchasing power by converting their pay into local currency. They used their cigarette ration to acquire cigarettes, which they then traded with locals. Because of the small value of cigarettes, cognac also emerged as money, but with a much higher denomination than cigarettes (Friedman, 1992).

COMPARISON OF PREVACID AND OTHER COMMODITY MONIES

Gresham's Law states that bad money drives out good money. For instance, the introduction of the silver-copper sandwich dimes and quarters in the United States caused the pure silver coins to be pulled from circulation. The pure silver coins were worth more than their face value. Likewise, as POWs received cigarettes of various quality, with the cigarettes that were used in exchange (acted as money) were those cigarettes least desirable to enjoy as a smoke. Thus, you had two classes of cigarettes, those that were smoked and those that were used as money in exchange. However, the value of cigarettes in exchange was all the same. The Prevacid™ tablets are all of equal quality, having all been manufactured under strict controls, so there is no quality difference between those dispensed in a prescription and those that are used as money. Thus, there is no display of Gresham's Law in action with this commodity money.

CONCLUSION

In the situations described above, a commodity emerged as money to facilitate transactions. Barter was always an option, but a medium of exchange removed the requirement of simultaneous reciprocal wants. The use of "money" (either dollars, cigarettes or Prevacid™) increased the efficiency of the transaction.

There are numerous examples of barter in today's economy. The internet makes it easier to find a partner to complete a trade. They are particularly helpful in facilitating transactions among multiple participants. Assume seller 1 wants to

exchange product A for product B, and seller 2 wants to exchange product B for product C. The internet barter sites can find seller 3 that wants product A in exchange for product C. If necessary, the sites will find the fourth, or fifth, or sixth, etc., trader required to complete the transaction. The more convoluted the barter arrangement, the more you appreciate some item (or commodity) serving as money.

For a single good to evolve into money, as Prevacid™ has done among the pharmacists, the market must have several characteristics. First, the more generic the goods are that are bought and sold, the more likely a single item will emerge as money. The generic nature of the traded goods makes pricing more straight forward. The money good itself must also be commonly used by the market members. For instance, big-box building supply companies (such as Home Depot and Lowes) could use 2x4s as the medium of exchange, since the boards are commonly sold by both companies and are indistinguishable. Shirts, on the other hand, would not serve well as money for clothing stores because the different sizes and styles. Other desired characteristics of a medium of exchange include value and portability, which is why a currency based on 2x4s probably will not emerge. If Lowes needed a particular refrigerator from Home Depot, it would require a considerable quantity of 2x4s to have an equivalent value. The exchange would be quite labor intensive, and thus, quite expensive with regard to transaction costs. Diamonds are a high value to weight item that could serve as money for jewelers. However, the value of individual diamonds depends on cut, color, clarity and carat weight, which makes them less generic. Also, the item sold in jewelry stores vary greatly, with many necklaces or rings being quite unique. In addition, the high street value of diamonds suggests the courier could be tempted to steal the diamonds and/or risk being robbed. The pharmacy setting seems to be rather unique in that it seems to satisfy all of these criteria, which would explain why an alternative money has evolved in this market and not others.

Another factor that makes the emergence of Prevacid™ money note worthy is that it emerged in a market that had a functioning fiat money. (Post-war Germany's Reichmark was a fiat money, but the non-market mandated exchange rate between the Reichmark and the dollar or pound prevented the Reichmark from functioning efficiently.) In addition, while cigarettes in the POW camp or post-war Germany were accepted in numerous markets for many items, Prevacid™ is exchanged only for other prescription pharmaceuticals and only in a specific geographic market. However, in this specific market, Prevacid™ is *more* efficient than fiat money in funding these inter-pharmacy exchanges, and as such, replaces the dollar as money for these transactions.

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