



## Alchian and Menger on Money\*

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**Abstract.** Carl Menger and Armen Alchian told stories of the emergence of money as a spontaneous order involving two types of costs—costs of recognizing attributes of goods and costs of finding willing exchange partners. Menger assumed that the first are zero and the second are positive. Alchian assumed the opposite. In the real world both types of costs are positive, so a truly satisfactory story of the emergence of money as a spontaneous order has yet to be written. This is another example of the complementarity of work done by some Austrian and some neoclassical economists.

**JEL classification:** B10, B20, E49

Two years ago Karen Vaughn called me to ask whether I would be willing to stand for election as president-elect of SDAE. I was astonished by the invitation for, as most of you know, I am eclectic in my approach to economics. I told Karen I would get back to her with my answer, and then I called Israel Kirzner for advice. When I told him that I consider myself to be more a consumer than a producer in the field, he reminded me that Austrians believe in consumer sovereignty. With that I called Karen to accept the invitation.

Perhaps the best known of my Austrian papers is “James Buchanan and the Austrians: The Common Ground,” (1989) in which I tried to illustrate that Austrians can learn much of value from some non-Austrians. This evening I want to make that same point with respect to Armen Alchian.

Most Austrians are familiar with Alchian’s “Uncertainty, Evolution and Economic Theory,” (1950). It is perhaps his most Austrianaesque piece. But I suspect few of you are familiar with his “Why Money?” (1977). In it Alchian gives his views of the necessary conditions for money to emerge out of the choices of individuals in pursuit of their own interests through voluntary exchange. I did not know of this paper until last spring when I began to think about a topic for this address. I found it in the 1977 Liberty Fund collection of Alchian’s papers (*Economic Forces at Work*). At first I thought that since this paper was obviously relevant to Menger’s explanation of the emergence of money as a spontaneous order, some Austrian must have written about it. I contacted Pete Boettke, Larry White, and Steve Horwitz to see whether that was true. I discovered that almost nothing has been written on the topic. O’Driscoll (1986), White (1999), and Horwitz (1992) mention Alchian’s paper in footnotes, but none of them do much with it.

In passing, it is interesting to note that in the first edition of *University Economics* (1964:59), Alchian refers to money as “a wonderful invention” rather than an evolutionary

\*This is the text of my presidential address to the Society for the Development of Austrian Economics on November 22, 1999 in New Orleans, LA.

adoption by the market. One would think that, after his 1950 paper, Alchian would not have made that mistake. However, in the two subsequent editions of that text (1967 and 1972), he drops the word invention and emphasizes that money naturally emerges out of the unguided choices of individuals in a world of positive transaction costs. I infer from the sole footnote in Alchian's paper that it was probably Karl Brunner, not Carl Menger, who accounts for Alchian's change of view.

So, what is Alchian's paper all about, and what, if anything, does it add to Menger's money story? After Alchian explains his analysis in which he claims that money will not emerge as a spontaneous order unless there are two or more specialist middlemen involved in most exchange sequences, he writes (122), "Other explanations of the occurrence and use of money are silent or vacuous on the existence of specialists and their reliability and activities." He clearly thinks he has discovered an important part of any evolutionary story. He doesn't refer specifically to Menger, but an Austrian reader of Alchian has to ask whether Menger's story is incomplete. My answer is yes and no. (After all, until recently I was an Episcopalian.)

Menger's story rests on the fact that in the absence of zero search costs for exchange partners (i.e., in the absence of double coincidences of wants), individuals will be able to pursue their ends more effectively through indirect exchange rather than direct exchange. Intermediary goods that are more marketable than others will be used by more and more people. Eventually, through what Larry White calls, a "self-reinforcing convergent process" (1999:10), one intermediary good comes to be used in all or almost all exchanges. It will then be money.

Except when Menger talks about the evolution of coinage, which in his story (as in Adam Smith's story [WN, Book 1, Chapter 4]) occurs after a generally used intermediary good has emerged, he pays no attention to the problem of recognition costs. That is, he implicitly assumes that all people are equally capable of discerning the quality and other characteristics of all goods. With that assumption, specialist middlemen have to be irrelevant.

Alchian assumes zero search costs for trading partners. He shows how and why money will emerge from the self-interested choices of people even if the problem of double coincidence of wants does not exist. He says, "No double coincidence of wants is pertinent. Indeed, [in his story] it is a general prevalence of double coincidence of information by both parties that would avoid the use of money" (118). To get this result he assumes (1) each person knows the actual quality only of his own good offered in exchange, (2) all people have positive recognition costs for all goods offered by others in exchange, (3) some people have lower recognition costs for a good than some others do, and (4) there is a good for which all people will have substantially lower recognition costs than any other good.

Table 1 (from Alchian, p. 113) illustrates key implications of those assumptions. There are four goods: diamonds (D), oil (O), wheat (W), and an unnamed good (C). There are two groups of people: novices and experts. All novices are assumed to have the same (high) recognition costs for any particular good proffered by others, and all experts are assumed to have the same (low) recognition costs for any particular good proffered by others. For example, Alchian assumes that any diamond novice would be willing to pay up to 20% of the full value of diamonds, which is the value that he would discern if recognition costs were zero, to receive them. This is because his recognition costs consume 80% of their value.

Table 1. Alchian's net proceeds after exchanges.

Novice	Novice				Expert			
	D (.2)	O (.4)	W (.6)	C (.95)	D (.85)	O (.90)	W (.95)	C (.99)
D (.2)	.04	.08	.12	.19	.85	.18	.19	.20
O (.4)	.08	.16	.24	.38	.34	.90	.38	.40
W (.6)	.12	.24	.36	.57	.51	.54	.95	.59
C (.95)	.19	.38	.57	.90	.81	.86	.90	.99

Interpretive notes: A novice supplies diamonds to another novice in exchange for wheat. The recipient of the diamonds (being a diamond novice) will at most pay only 20% of their value in wheat. When the diamond supplier receives the 20% of the wheat, he will realize at most only 60% of that wheat after inspection (because he is a wheat novice). Therefore, the maximum net amount realized by the person who started with diamonds and wanted wheat will be only 12% ( $= .6 \times .2$ ) of the full value of the diamonds he supplied.

A novice supplies diamonds to an expert in wheat in exchange for wheat. The recipient of the diamonds, although a wheat expert, is a diamond novice. Therefore he will at most pay only 20% of the full value of diamonds in wheat. The diamond supplier, accepting the wheat expert's evaluation of the wheat received from others would at most realize 19% ( $= .2 \times .95$ ) of the full value of the diamonds he supplied.

(Alchian does not specify what the full value is. Rather, he focuses on discounts from that hypothetical full value.) On the other hand, any diamond expert would be willing pay up to 85% of the full value of diamonds to receive them because his recognition costs consume only 15% of their value. A wheat novice would pay up to 60% of the full value of wheat, while a wheat specialist would pay up to 95%, and so on. Note that both novices and experts have low recognition costs for C proffered by others.

In all Alchian's exchanges a double coincidence of wants exists. Neither novices nor experts have any trouble finding people who want what they have and have what they want. The difficulty they have is in discerning the qualities of the goods proffered by others. Suppose a novice offers to exchange diamonds for wheat with another novice. If this exchange took place, the recipient of the diamonds (being a diamond novice) would pay at most 20% of the amount of wheat he would pay if he had zero recognition costs for the other novice's diamonds. When the diamond supplier receives 20% of the full wheat value of the diamonds, he would realize at most 60% of that wheat after inspection (because he is a wheat novice). Therefore, the maximum net amount realized by the person who started with diamonds and received wheat would be only 12% ( $= .6 \times .2$ ) of the full value of the diamonds he had given up, and he would have no doubts about the quality of the diamonds he had given up. Unless he has a very high demand price for wheat in terms of diamonds, the exchange is unlikely to happen. The recognition costs are likely to consume all the potential gains from trade. Some way must be found to lower recognition costs significantly before exchanges are likely.

Alchian assumes that any novice who trades with any expert will avoid his own costs of recognizing what he receives from the expert by accepting the discount that the expert applies when he receives units of the same good received from others. In effect novices buy low cost quality assurance from experts. Experts will specialize in trading in the good with respect to which they have expertise. As specialists they will both buy and sell the good,

Table 2. Net proceeds from various exchanges.

Novice	Novice				Expert			
	D (.2)	O (.4)	W (.6)	C (.95)	D (.85)	O (.90)	W (.95)	C (.99)
D (.2)	.04	.08	.12	.19	.85	.18	.19	.20
O (.4)	.08	.16	.24	.38	.34	.90	.38	.40
W (.6)	.12	.24	.36	.57	.51	.54	.95	.59
C (.95)	.19	.38	.57	.90	.81	.86	.90	.99
Exchange sequence:	Net proceeds:							
Dn → Wn	.12							
Dn → Cn → Wn	$(.19 \times .57) = .1083$							
Dn → We	.19							
Dn → Ce → We	$(.20 \times .90) = .18$							
Dn → De(C) → We	$(.85 \times .90) = .765$							

and they will be very concerned about maintaining and improving their reputational capital for fair dealing.

Suppose a novice supplies diamonds to a wheat expert in exchange for wheat. The recipient of the diamonds, although a wheat expert, is a diamond novice. Therefore he would pay at most 20% of the full value of diamonds in wheat. The diamond supplier, accepting the wheat expert's assessment of the wheat would evaluate it at 95% of its full value rather than 60% of its full value. The net proceeds would be 19% ( $= .2 \times .95$ ) of the full wheat value of the diamonds he supplied. The supplier of diamonds in exchange for wheat would be better off dealing with a wheat expert rather than a wheat novice (19% net exchange value compared to 12%); but due to the high recognition costs associated with diamonds, the net proceeds from exchange are still very low.

Consider Table 2 (which is Table 1 with various exchange sequences outlined). The introduction of any intermediary good, including C, in an exchange between novices or between a novice and any one expert would leave the parties worse off than they would be with direct exchange. This is because the recognition costs associated with any intermediary good must be added to the recognition costs associated with the principal goods, thus decreasing the maximum net proceeds of the exchanges to the parties. For example, we have already seen that direct exchange of diamonds for wheat among novices would leave the parties with net proceeds of 12%. If C were used as an intermediary good obtained from a novice, his net proceeds would be 10.83% ( $= .19 \times .57$ ) which is less than the net proceeds from direct exchange. Using C is better than using any other intermediary good (try oil for example) because of C's lower recognition costs, but it is not better than direct exchange.

Similarly, a direct exchange of diamonds from a novice for wheat from a wheat expert would yield, as we have seen above, a net exchange value of 19%. Introducing C as an intermediate good, even obtained from a C expert, leaves a net exchange value of only 18% ( $= .20 \times .90$ ). Using C as an intermediary good does not lower recognition costs relative to direct exchange. To the contrary, it reduces the net proceeds of exchange.

How, then, can money emerge as a spontaneous order under Alchian's assumptions? The answer is that people must discover that exchange sequences involving (1) trade with

specialists (experts) for *both* of the principal goods, and (2) an intermediary good with very small recognition costs will make possible substantially increased net proceeds from exchange.

If two specialists are used—one each for the two principal goods—an intermediary good *must* be used. For example, when diamonds are supplied by a novice to a diamond specialist, how will the diamond specialist pay for them? The novice ultimately wants wheat, but to save on recognition costs for wheat he must acquire it from a wheat specialist, not a diamond specialist. Indirect exchange is necessary. But no intermediary good would work if its recognition costs amounted to more than the cost savings in dealing with the specialists. To make the two-specialist route effective the intermediary good must have small recognition costs for everyone. In Alchian's example, only C will work. For example, a novice who exchanges diamonds for C from a diamond specialist and then uses the C to buy wheat from a wheat specialist would realize a net exchange value of 76.5% ( $= .85 \times .90$ ) which far exceeds the 19% net proceeds of direct exchange with a wheat specialist.

Where does the diamond specialist get the necessary C? From a C specialist. Alchian assumes that exchanges between two experts will involve no discounts from full value. An expert in wheat will have full confidence in the C expert's evaluation of the C he supplies, and vice versa. Each specialist will realize the necessity of maintaining sufficient C on hand to finance indirect exchange transactions. The diamond novice accepts C from the diamond expert (and evaluates it at 95% of full value) because the C allows the novice subsequently to economize on recognition costs by dealing with a wheat expert.

In sum, in a world of positive and unequal recognition costs for goods, with different people having different recognition costs for any one good, and with one good having very low recognition costs for every person, to maximize net exchange proceeds it is necessary to use the low recognition cost good in indirect exchange *involving specialist middlemen for each of the principal goods in each exchange sequence*. The emphasized part of the last sentence is Alchian's unique insight.

Of course, from an Austrian perspective Alchian's paper is inadequate. He does not offer a story of entrepreneurial discovery by which his conclusions become widely grasped and adopted. He merely sets up a plausible example to illustrate necessary conditions for money to emerge as a spontaneous order. If an Austrian had this insight he would include a discovery story similar to Menger's by which a money emerges.

Nevertheless, in my judgment Alchian's analysis is an important complement to Menger's. Menger's story depends on costs of searching for willing exchange partners (the absence of double coincidences of wants). Alchian's story depends on costs of recognizing the qualities and other characteristics of goods. Money emerges in both cases. In the real world both search costs and recognition costs are important.

So yes, Menger's story is incomplete. But so, too, is Alchian's. On the other hand, both stories are complete on their own terms. Clearly what is needed is someone to put these two stories together. But that is a task for a producer, not a consumer.

### **Acknowledgments**

I thank my colleagues James Ahiakpor and Steven Shmanske for helpful comments on earlier drafts.

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