

Impact of New Economics on Stability of Demand for Money

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Abstract: This paper presents an idea that an advance in computer and financial technologies can change (*ceteris paribus*) the present monetary regime. A competition among central banks and private hot money issuing banks can come into existence. Such a competition can destabilize a demand for a particular hot money. In such a case issuing banks would be forced to change their behavior.

1 Introduction

Today one of the most discussed economic topics is *New Economy* and related subjects, such as *electronic money*. It looks to be something new and fashionable. But if explored in more details, we can learn that these “modern” elements are in principle known for centuries—what is really new is only a great improvement in economic efficiency that can be achieved using associated new technologies.

For example, electronic money could be defined as *any type of money not existing in a physical but only in an electronic form and transferred as electronic impulses* (see Kvasnička, 2000). It holds for most money in many last decades. Moreover, there is no principal distinction between so called “electronic money” (stored as digits in computers) and common bank money (stored as numbers in bank books of accounts) existing for centuries. The only difference is a possible improvement of efficiency of transactions made using a new technology related to “electronic money”.

So called New Economy is the same case. New Economy could be defined as *economic environment shaped with the present technological progress, especially with the progress of computer hardware, fast communication, Internet, and computer science* (see Zlatuška, 2000). But exploitation of computer technologies and related stuff changes no economic principle at all—behavior of households, firms, and governments is determined with the same key factors. What is changed is the efficiency of searching for information, the efficiency of a production optimization, the cost of contracting and so on.

The key question then is: Can a mere increase of efficiency cause any noticeable evolution of social institutions? In this paper I will argue that it can. I will demonstrate in on an example of monetary regimes. I will show that a mere increase in a transaction efficiency (i. e. a decrease in transaction costs) has a potentiality to change the monetary arrangement a lot. Nonetheless, it is only a potentiality—there are many possible counteractions that can stop that evolution or even turn it into a quite different direction. Therefore it is quite difficult to predict the future evolution of monetary arrangement. What we can do now is only to recognize the potentiality.

2 Money and Transaction Costs

Money is usually defined as *a generally accepted means of payment*, i. e. an asset that is willingly accepted by all (or almost all) agents as a compensation in a transaction. Historically there were many types of money: shells, cattle, linen, gold etc. What was chosen by a society as money was determined with the transaction cost associated with that type of money. Free

rational self-interest seeking agents prefers to use that type of money that minimizes the expected transaction cost associated with his desirable transactions. This way the society as a whole chooses the optimal type of money (given its knowledge and technology).¹

The total transaction cost of using money is determined with more than just one factor. Two most important ones are a conversion cost (a cost of either converting one type of money to another, or a cost of finding a counterpart that is willing to make the transaction in one's preferred type of money, or a cost of converting a non-monetary asset to money if that asset is used as a store of value), and an opportunity cost of holding money, i. e. lost nominal interest or lost utility in consumption due to holding money. The first type of cost *decreases* as more and more agents are willing to accept the type of money (the particular type of asset), or as more money exchangers enters the business, or as any technology (e. g. computer wires) decreases the cost of conversions. The second type of cost *increases* as new financial and other technology increases number of alternative stores of value. Also inflation of the type of money increases this cost.

Historically there was first a strong pressure to standardize money; later the opposite trend prevailed. There is a strong pressure to money standardization if the conversion cost is high (and when opportunity cost is low). In such a case the only commodity is chosen to be money (typically a precious metal, e. g. silver or gold). If two or more commodities are chosen by the society, it is efficient to set a *legal transaction ratio* of them (such system is commonly referred as bimetallism). This legal arrangement allows to lower a transaction cost, and therefore is preferred under most conditions. This is why primitive societies chosen to use the only type of money (e. g. gold) in the end.

The evolution of financial and other technology may lower the conversion costs, and increase the number of alternative stores of value in the same time (it increases the opportunity cost of holding money). That way it reduces the incentive to use unique means of payment. Then other types of money appears: historically first appeared bank notes (as credit of gold), later checkable deposits in company with checks started to serve as money. During following centuries two interrelated processes came into effect: 1) more and more assets started to act as money (e. g. NOW accounts, traveler's checks etc.), 2) some assets not being money started to be used to optimize the total holding of money, and this way to lower the opportunity cost of holding them. Such a role can play e. g. bonds (in Baumol, 1952, Tobin, 1956, Kvasnička, 2001); the same way can act even non-financial commodities (like refrigerators) that allows agents to change their time-spending pattern.

In economic theory its students usually pretend that money is the only asset—usually cash. It is in my opinion not appropriate nowadays. Every agent does not hold a single asset—the stock of money, but rather a complex portfolio of many types of money (cash, bank deposits, traveler's checks etc.), many types of transaction media (bank notes, debit cards, electronic wallets etc.), and other non-monetary (and maybe even non-financial) stores of value. The agent optimizes the size and the structure of the portfolio to minimize associated transaction cost. In Kvasnička (2001) I have presented a simple formal model describing such a situation.

¹Impressive picture of the evolution of money and related social institutions brings Carl Menger in *his Principles of Economics* (1950). Menger shows how a change in the configuration of a society (e. g. a change in its production technology) compels a change of a character of money. He covers many historical evidences on such an evolution. The following argumentation goes on with Menger's approach.

3 Money and New Economics

In the last section I have said nothing about currencies, such as US Dollar or Czech Crown. The reason was that historically the conversion cost of switching currencies (the exchange fee, the exchange rate risk etc.) was high enough to prohibit the use of more than one currency in one geographic area. The only exceptions were times of an extremely high inflation or a high political instability. In those times the opportunity cost of using local (inflationary) currency can be extremely high, and therefore it can be rational to use not only a different type of money, but even a foreign currency².

We could see that the technological progress decreased constantly the conversion costs and increased the opportunity costs at the same time. Present-day advance in computer technology applied in economies (called New Economy) shows its potentiality to decrease those costs further. In the same time it increases the opportunity cost of holding money too as information about all global investment opportunities is accessible more easily now. Therefore, if the present advance in computer science and related disciplines maintains, we could expect following trends:

1) Cash would be used less and less. Its place would take over bank money in company with debit and credit cards (and many types of direct electronic transfer). Electronic wallets are not likely to spread much because they have higher conversion cost than cash (they are not received by everyone; special machinery like that for debit cards is needed), and they have higher opportunity cost than debit cards (bank money can yield some interest, electronic wallets probably not). They are probably suboptimal from an agent's point of view.³

2) We can expect that structure and size of “money portfolios” would be more volatile than today. If the conversion cost is lower, an agent can make the best of more opportunities. The lower conversion cost, the lower increase in the nominal interest rate is sufficient to reduce the demand for a particular asset including money (see Kvasnička, 2001).

3) If the conversion cost of buying and selling a currency (exchange fee) decreases reasonably, we can expect that agents could use even more than one currency. For example, if the inflation rate of a local currency is 10 %, and in the same time the inflation rate of US Dollar is 2 % (and the difference is not fully compensated with the interest rate on checkable deposits) then the agent could hold on his or her bank account US Dollars instead of local currency. With the debit card he or she can make his or her payment in the local currency—the conversion is provided by his or her bank on the demand. Moreover, if his or her counterpart in the transaction is willing to receive US Dollars too, no conversion would be necessary at all. If the inflation differential is eliminated, the agent can switch easily back to the local currency (or to any *deflationary* currency if present).

4) The alternative currency need not to be provided by foreign governments only; any private company can provide it as well. Such a private currency can be issued as warehouse money based on a gold, silver or platinum standard (as today already issued by e-gold company⁴), or on any other standard. It can be a fractional-reserve money too.⁵ Better defined

²The term “currency” can mean even the use of some commodity (cigarettes, cognac, etc.) as money. It is important to recognize that it is not a revival of barter—the commodity *serves* as money in such a case, and therefore it *is* money.

³Electronic wallets can spread, in my opinion, only if there would be some special services associated only with them. But I cannot imagine any special service that can be associated with an electronic wallet, and that cannot be associated with a credit or debit card in the same time. The other possibility is that electronic wallets will be just one function of a multifunctional chip card including a debit card too (and probably also some identification card, telephone card etc.). But even in that case I do not expect that those e-wallets would be used for a considerable part of the total amount of all transactions carried in an economy.

⁴See www.e-gold.com.

standards (from the point of view of its potential customers) would crowd out the rest currencies from the market.⁶ This way something like free banking can come into existence once again.

5) It is unlikely that an agent holds in his or her money portfolio more than one currencies to diversify the risk of an unexpected inflation (i. e. an unexpected decrease of the value of his or her wealth). Because money forms only a small part of one's wealth it is quite easy to liquidate his or her position in a currency and to start to hold another one.

6) The process is self-reinforcing. As more and more agents use some asset for monetary purposes, the associated conversion costs decrease (its value may increase in the same time). In such a case even more agents would be motivated to imitate the pioneers and accept that asset as money. The narrow group of large companies starting such a practice can launch a gradual switching to multicurrency world.

4 Conclusion

If the above presented trend will maintain in following decades, we can see a great change of the monetary arrangement. In the first time, some agents may use more assets as stores of value and more currencies on their bank demand deposits. Later all agents can use in hand-to-hand transactions a single (local) currency while holding other assets or currencies on their bank accounts. These assets may consist of Euro-Dollars, Euro-Yens, gold, silver, platinum, some very liquid bonds etc. As their holding would spread more and more, these assets may be used even directly in transactions without any conversion—thus they would become money.

Lowering of conversion costs may this way destabilize the demand for any particular currency and its hot money. This can force central bank to issue currencies so that their currencies have a low, stable, predictable and very similar rates of inflation. Otherwise they could face a pretty unstable demand for their hot money as agents try to eliminate unstable currencies from their money portfolios. The standard rate of stability may be determined with the most stable currency, no matter if a governmental fiat one, or a private (commodity-based) one.

Private commodity-based currency may succeed and discipline governmental central banks even in a case of total monetary union (if all countries of the world would use the only governmental fiat currency, some analogy to Euro). Even very narrow competition can do us much good.

On the other hand, all above presented trends are only trends—they can be stopped with any governmental intervention, any disruption of technological progress, and with many other causes. But if not stopped, this advance may create much better institutional arrangement of monetary regimes and much better outcomes than we know from the 20th century.

⁵I do not expect private *fiat* money to come into existence. Such as asset would be extremely risky for its holders. Moreover, there hardly can be any legal claim on any commodity (including other currencies) when an agent would like to abandon the currency. Governments can issue this type of money only because of their monopolistic power and the power of the legal tender act. I do not agree with the famous Hayek's proposal (1999) to create private fiat money standard at all.

⁶Governmental fiat money cannot be crowded out completely because they are not convertible and because of the legal tender act. But the demand for them can drop reasonably—without any adjustment it can bring forth a high inflation of those governmental currencies.

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