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The Development of Electronic Money : Toward the privatization of money issue ?

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Abstract

The development of electronic means of payment concerns the monetary authorities since these new forms of payment could challenge their ability to

implement monetary policy efficiently. This would be the case if electronic money or e-money were a private form of money. In other words, if both banks and non-banks were able to issue it without relying on base money. Based on a free banking framework, the paper shows that only pre-paid cards are similar to private notes such as those issued by free banks in the past. As a consequence, the control of the central bank over the quantity of money is not seriously undermined. Moreover to prevent this risk materializing, the European central bank now decrees that any new kind of e-money be issued only by commercial banks holding reserve requirements.

The development of information technology has unprecedented consequences on the banking industry. It has seen recently the increased use of pre-paid card, e-purse, e-wires of money orders, e-banking, e-loans. The Internet contributes by fostering further competition, not only within the banking industry, but also coming non banks. This paper will focus on the development of electronic money and the consequences therein for monetary policy. The paper aims at discussing the two following issues:

1- Does electronic money give rise to the privatization of money issue?

2- If this is the case, does this situation threaten the banking stability and does it challenge the control of the central bank over money supply[1]?

SECTION 1- Do Electronic Money and E-money give rise to the private money issue ?

First of all, it is necessary to give a brief definition of the electronic means of payment. These cover a large range of instruments starting from electronic money orders, debit cards

and credit cards[2] to smart cards or e-purse or more generally speaking store value cards or pre-paid cards[3] (like Moneo[4] in France or MONDEX first launched in Britain in the mid-1990's). The European Central Bank 1994 Report focused its analysis on the multi-purpose prepaid card or « electronic purse » which was defined as a plastic card which contains real purchasing power, for which the customer has paid in advance (card-based products). A second form of electronic money products which employ specialized software on a personal computer, typically allowing the electronic value to be transferred via telecommunications networks, such as the Internet, has emerged since then (software-based products) [5].

The second category represents technological improvements enhancing the cost-efficiency of the payment system without truly challenging the nature of the liabilities issued by banks. The new technology enables the wiring of funds from a deposit account to another more quickly, thus reducing the cost of processing payments: the cost of processing electronic and e-payment is lower for the bank[6] and it also diminishes for the customers both the length of the transaction and the cost associated.
The first category represents cards containing real purchasing power. The charge of the card is prior to any transaction and makes it final. Indeed, cardholders just charge a certain amount of money and are able to use it wherever it is accepted. The oldest and most widely developed scheme is Mondex, first launched in Britain in the mid-1990's. A similar card has been recently launched in France (Moneo) with the aim of rallying other European countries (like Italy, Belgium) in order rapidly to reach a critical size for the network. These pre-paid cards represent a « more advanced version » of private notes because like notes, they make transactions final. But why should retail shops and consumers be interested in holding these cards over notes?
The advantages of these cards are the followings:
- the transactions paid with these pre-paid cards are more secure for retailers since the technology can make counterfeiting more difficult and the risk for the retailers of being robbed decreases dramatically ;
- for the consumers, the risk of robbery may be reduced as well. It avoids any of the

inconveniences of carrying coins. Moreover, they could earn interest on the balance.
The main drawback of these smart cards for retailers is that they prevent them from hiding income for tax purposes. As a matter of fact, many experts expect a massive success as soon as the technology develops to make them non-traceable. In any case, these cards are held in place of cash and from that point of view « privatize » small transactions.[7]. In addition supermarkets, retailers, airline companies already offer cards to make payments easier, in conjunction with a reward program. They could easily offer pre-paid cards at the same time, to be used within a network of partners.The development of electronic payment could not only threaten the ability of the central bank to control money creation but also seriously challenge the position of commercial banks in their traditional market.

SECTION 2 : Does the development of private monies threaten both the stability of the payment system and the ability of the central bank to control money creation ?

Many authors[8] try to predict the outcome of a system where more than one form of money issued privately co-exist. Two main problems are underlined :
1- interoperability of rival networks
2- exchange rates between the different e-monies issued privately[9]
The main concern here is the cost incurred through the existence of exchange rates between the e-monies. Issuing e-money in competition with notes does not require it to circulate at a different exchange rate. On the contrary, since means of payment typically benefit from large network economies, issuers would have a strong incentive to have their money accepted at par and also to enhance the interoperability of their system. This is a strong argument for convincing customers to hold that new money in the first place. This can be further illustrated by the case of Moneo, the French e-purse scheme, since Moneo is offered as an option on the Visa/Master debit/credit card[10]. Network economies can also be achieved by opening branches, developing brand name and signing agreements with retailers for accepting notes on a large scale.
On the other hand, if an exchange rate prevails, it does not necessarily harm customers. It is

worth mentioning the case of the Raam issued by the Maharishi community in the Netherlands and in the US. It circulates in Europe at an exchange rate of 1 against 10 Euros and still expands its circulation.

The second major concern about the development of e-money is that it could weaken the ability of the central bank to control the quantity of money in the economy. This « privatization » of the quantity of money would ultimately challenge the efficiency of monetary policy. Indeed, the quantity of money privately issued would not be subject to reserve requirements and its quantity would be the result of the profit-maximizing private bank calculation.

The demand for base money by commercial banks is explained by reserve requirements regulation and when those are not binding, by the clearing settlements scheme and the demand by the public[11],[12]. In other words, what is important to question here is whether or not e-money reduces the demand for base money. If this is the case, it will ultimately affect the money multiplier linking high-powered money to the total quantity of money. This raises two issues for the central bank:

1- e-money will lead to the shrinkage of its balance sheet and it will also decrease seigniorage;

2- it will make the relation between high-powered money and money created by the deposit-taking institutions looser and less predictable, jeopardizing the efficiency of monetary policy. This could lead to an ever-increasing rate of inflation.

The adjustment process may create some disturbances. In fact, the central bank needs to predict the path along which it will take place in order to adapt its supply of base money to these changes. This discovery process could produce instability within the banking system.

As for determining whether the development of « private monies » is a first step toward the privatization of the current base money, this is a mere exercise in Â« science fiction Â» for the time being. Anyway, the European Central Bank has already taken action to ensure that this won't happen: e-money should be only issued by banking institutions subject to reserve requirements. Moreover, it requires e-money to be redeemable into central bank money.

Conclusion

The paper demonstrates that Internet and electronic means of payment are far from seriously depriving the central bank of its power over money creation. Under these circumstances the central bank does not need to feel threatened by these developments, especially since the unit of value used by electronic purses is based ultimately on central bank high-powered money. This is what gives their value from a customer standpoint. Nonetheless, central banks are right in being concerned by the impact such developments can or could have on their ability to control and fine-tune monetary policy. As a matter of fact, the existence of electronic purses, and more broadly speaking, technological improvements in wiring money and settling payments, affect the velocity of money (increasing it) and lose the link between money held by private customers, households and businesses, and the high-powered money issued by the central bank.

In the short run, these trends jeopardize the ability of the central bank to control its monetary policy. When observing the behavior of the major central banks, it is worth noticing that this threat is not taken equally seriously by all of them. As a matter of fact, it is striking how the position of the European Central Bank contrasts with that officially endorsed by the Fed. Indeed, the European Central Bank sees the development of electronic means of payment as a major threat to its (still) infant monetary policy meanwhile the Federal Reserve is still observing the changes. It has taken no measures to restrict their development to commercial banks only.

In any case, it seems that we are still very far from a cashless society. Nonetheless, the central bank and the government need to become accustomed to the idea that the seigniorage derived from issuing money will irremediably erode.

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[1] Indeed, central banks and in particular the European central bank seem to be seriously concerned by the potential competition raised by e-money: « The 1994 Report indicated similarities, in economic terms, between sight deposits with the banking system, on the one hand, and value loaded on prepaid cards, on the other. Indeed in both cases, the customer entrusts part of his/her belongings to an institution. Therefore, in many cases, electronic money comes into competition with traditional bank money, a situation raising concern for the level playing-field », European Central Bank, Report on Electronic Money, August 1998, p. 8.

[2] In the US, the use of non-cash retail payments multiplied by 5 between 1979 and 2000 because of the dramatic increase in the use of debit cards. Moreover, the proportion of non-cash payments made electronically grew from 15% in 1979 up to 40% in 2000. Nonetheless, the check still dominates non-cash retail payments because it is the most used mean of payment in the business community (around USD 14 billion in 2000, Board of Governors of the Federal Reserve System, The Future of Retail Electronic Payments Systems : Industry Interviews and Analysis, Staff Study 175, December 2002, p. 1.

[3] Cf The Economist, « Dreams of a cashless society », May 5th-11th 2001.

[4] Moneo is issued by a consortium of banks and non banks called BMS (Billetique Monetique Service), the shareholders of which are the followings : BNP, BP, Caisses d'Epargne, CCF, CIC, Credit Agricole, Credit Lyonnais, Credit Mutuel, la Poste, Societe Generale, France Telecom, RATP, SNCF. Moneo needs to be charged at a specific terminal at your bank for a fixed fee and for a maximum amount of Euros 100.

[5] Cf European Central Bank, Report on Electronic Money, August 1998, p. 7.

[6] The experience in England of home banking and phone banking (also experimented in France) seems to be quite successful in terms of cost efficiency for the banks.

[7] Nonetheless, it is important to remember that the use of e-money and electronic means of payment is still restricted to retailers since businesses are still heavily relying on checks It is worth noticing that Citibank designed an e-payment system targeted to businesses but this requires from the company an investment in technology.

[8] Cf in particular Osterberg and Thomson (1998).

[9] I have first to acknowledge that this concern is particularly strong in the USA, given its banking history. Indeed, given the size of the territory and given that long ago the different

states introduced laws refraining banks from branching out of the state, the US banking system has always been very fragmented.

[10] Nonetheless Moneo requires a terminal different from the one used for Visa/Mastercard transactions.

[11] Contrary to what certain authors may believe, the existence of reserve requirements is not tantamount to the control of the central bank over the reserves put aside by commercial banks. In many countries, reserve requirements have almost been phased-out (New Zealand for example that also started to give an interest rate on reserves instead of having reserve requirements) but still the central bank is in charge of the monetary policy given that the commercial banks need base money for clearing settlements.

[12] Surprisingly cash still represents a fair percentage of the transactions made by individuals in the major industrialized countries (around 50%). This percentage would be much lower if the USA were not included, even though the use of the credit and debit cards is widely extended.