



Over the Water -- The View from the UK

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COLUMN FIVE: BYE, BYE BANKNOTES

Banknotes and coins may vanish sooner than you think.

While the potential impact of electronic cash (ecash) technologies on the retail banking sector is significant, its worth taking the time to think about the impact of ecash on central banks which may be even more important in the longer term. The Bank of International Settlements (BIS), based in Basle, has recently published two very interesting reports. Both of these reports take ecash very seriously and work on the assumption that it is coming out of R&D laboratories and into the mass market very quickly.

The first report, The Security of Electronic Money, is good news for the ecash world as it concludes, broadly, that the security of electronic purse schemes is adequate to meet the concerns of central banks. A Task Force on the security of electronic money was established in October 1995 after a workshop involving the G10 central banks to provide a preliminary assessment of the technical aspects of electronic purse products: stored value products such as Mondex as opposed to value access: products such as the familiar credit card. The report looks at the risks posed by both deliberate criminal activity and by errors or malfunctions. In both cases, the Task Force found that the security measures associated with the electronic money are better than traditional forms of retail payment. They also deal with a common criticism of ecash schemes that they will somehow increase money laundering by observing that the movement and management of anything other than very small amounts of ecash will require some degree of involvement or collusion by a financial institution: in other words, its business as usual.

The second BIS report, The Impact of Electronic Money on Central Banks, again looks at the emergence of mass market stored value electronic purse schemes. It considers the various factors that might influence the evolution of ecash and considers what these mean for the central banks of the G10 countries. Interestingly, the report notes that the impending demise of (at least some of the) national currencies in the European Union (EU) might be a significant stimulus to the development of ecash schemes aimed at consumers because of the cost and inconvenience associated with replacing all of the notes and coins in circulation.

They note that the amount of cash in circulation varies widely. The UK stands out from most other developed countries in having a significantly smaller fraction of the money supply in the form of notes and coins: in other words, in the UK most money is already e-money. With under UKP20 billion of specie in circulation, of which (according to the Bank of England) more than 5% is unredeemed old notes still in circulation including 56 million in UKP1 notes that were last issued in 1984 and 625 million in old 50 notes). What's more, the Bank also estimates that some 1% of all UKP50 notes in circulation are counterfeit. Compare the paper and metal to the electrons. The interbank clearing

system (CHAPS) processed 12.5 million items with an aggregate value of nearly 27 trillion. Every day, it clears about 300 times the TOTAL amount of specie in circulation!

In the US, by contrast, physical money seems to account for half of all bank deposits. Are the citizens of the US really walking around with huge wads of cash in their pockets? According to recent figures there are some \$1,400 in bills in circulation for each man, woman and child in America. Deep pockets? Not really: various estimates indicate that some two-thirds of all US currency is not in circulation in the US and is unlikely to be repatriated. This is a situation of no concern whatsoever to the US monetary authorities because it means that people all over the world from Moscow to Santiago are making interestfree loans to Uncle Sam by stuffing \$100 bills under their mattresses. Why? Well, since cash in circulation represents non-interest bearing central bank liabilities, a substitution by ecash would lead to a corresponding decline in central bank assets and the interest earned on those assets, known as seigniorage. The BIS have calculated that if e-cash replaces only the low-value notes and coins in circulation (low value being defined as under \$25) transactions, Bank of England seigniorage profits will fall by more than half, reducing government revenues by some UKP1.4 billion.

From the central banking perspective, e-cash could also have an interesting effect on monetary policy. E-cash might, for example, cause sufficient shift in the velocity of money as to make existing narrow monetary aggregates less useful. Ecash might also, by substituting for cash, reduce central bank balance sheets. Circumstances could then arise in which the central bank might not be able to implement reserveabsorbing activities such as in relation to large scale foreign exchange operations although, as a recent CSFI pamphlet (Central Bank Intervention: A New Approach) points out, such interventions may well be anachronistic anyway.

E-cash has ceased to be a fringe technological innovation and now deserves serious consideration at every level. Whatever people might feel about notes and coins, the fact remains that they are costly and inefficient: it is the fact that ecash is cheaper to store and transmit than specie that means it will replace it sooner than many people imagine.

This issue's quote:

"The issuers may have, and in the case of government paper, always have, a direct interest in lowering the value of the currency, because it is the medium in which their own debts are computed" -- John Stuart Mill (1806-1873).