Implications of the cash changeover for currency in circulation and monetary aggregates in the euro area

Significant decline in holdings of banknotes across the euro area

Three years after the start of Stage Three of Economic and Monetary Union (EMU), at the beginning of 2002, euro banknotes and coins will be introduced. In the run-up to this event, known as the cash changeover, preparations by economic agents seem to have already been affecting currency in circulation in the euro area since the end of 2000. In seasonally adjusted terms, currency in circulation has decreased almost continuously month-on-month since November 2000. In July 2001, the annual rate of decline was 6.4%.

As illustrated in Chart A, the growth of currency in circulation began a declining pattern after a strong peak in early 2000 linked to the uncertainty which surrounded the transition to the year 2000. From the last quarter of 2000 to the second quarter of 2001, the annual rates of change in currency in circulation have been increasingly negative. The chart also shows that this decline is too sharp to be explained by the slowdown in economic activity and/or the increase in short-term interest rates in 2000. Thus it appears that economic agents have been increasingly disposing of significant amounts of banknotes previously hoarded and not necessarily used for transaction purposes. This interpretation is further supported by the observed considerable decline in large denomination banknotes which are most suitable for hoarding purposes.

Chart A: Currency in circulation, GDP (nominal) and opportunity costs
(annual differences in percentage points or annual percentage changes)
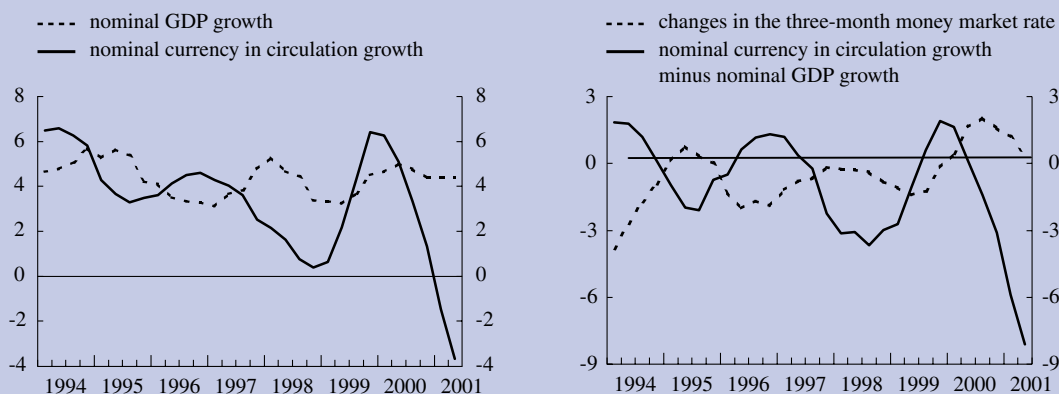
Source: ECB.
Note: For the second quarter of 2001, the annual growth rate of GDP is assumed to be equal to that in the first quarter of 2001.

The decline in currency in circulation is relatively widespread across euro area countries. This seems to rule out the dominance of country-specific factors in this phenomenon. As Chart B shows, most countries recorded absolute annual declines in currency in circulation in July 2001. Additionally, for those countries where currency in circulation was still growing, the rate of growth was significantly below the nominal growth of the economy.

While holdings of banknotes have declined euro area-wide, it can also be assumed that banknotes held outside the euro area are declining. Among the euro's legacy currencies, a significant proportion of Deutsche Mark banknotes are held abroad. According to estimates by the Deutsche Bundesbank,[1] in the mid-1990s 30% to 40% of all DEM banknotes were held abroad, particularly in central and eastern Europe. To some extent, other legacy currencies are also likely to be held abroad, for example Austrian schillings, owing to Austria's

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1   See F. Seitz, *Circulation of Deutsche Mark Abroad*, Discussion Paper 1/95, Deutsche Bundesbank, 1995.

**Chart B: Annual rate of growth of currency in circulation in July 2001
(national contributions to euro area)**

(as percentages; figures in parentheses refer to the contribution in percentage points to the annual rate of growth of euro area currency in circulation in July 2001)
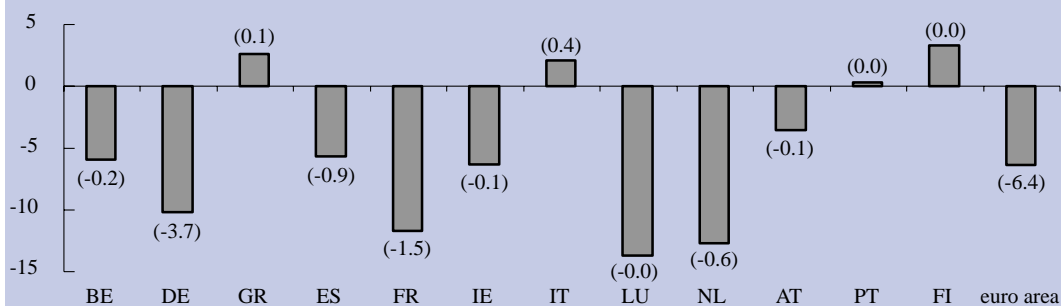
Source: ECB. Figures may not add up due to rounding.

geographical proximity to central and eastern Europe, as well as French francs. However, compared with Deutsche Mark banknotes circulating abroad, these holdings are estimated to be relatively small. It is likely, however, that DEM holdings abroad have been reduced in recent years, partly owing to a stabilisation of the economic situation in central and eastern Europe.

Limited impact of the cash changeover on monetary aggregates

When assessing the importance of the cash changeover for monetary aggregates, it has to be kept in mind that currency in circulation accounted for only 6% of M3 in July 2001. Thus only very pronounced developments in currency in circulation are able to influence M3 significantly, and this only if a decline in this item does not lead to higher demand for other components of M3.

The above evidence about the widespread fall in currency in circulation across euro area countries supports the view that a large part of it relates to reduced hoarding of banknotes within the euro area. The reduction in these domestic currency holdings is matched in all likelihood to a large extent by an increase in short-term bank deposits which are relatively close substitutes for currency. Such substitution does not have an impact on M3. Only shifts from currency into non-euro area assets or shifts into longer-term euro area assets would reduce euro area M3. Such shifts, however, involve higher transaction costs than shifts from currency into deposits and should therefore be less likely to occur.

As regards currency held abroad, a reduction in these holdings would theoretically dampen M3 growth. However, many eastern European economic agents will probably exchange substantial amounts of their Deutsche Mark cash into euro during the regular changeover process. The national central banks of the Eurosystem have prepared campaigns in countries outside the euro area to ensure a smooth process. In addition, provision has been made to ensure that euro banknotes can be supplied to non-euro area countries, e.g. by permitting the frontloading of banknotes to central banks and branches of euro area credit institutions located in these countries. Thus a smooth transition to the euro can be expected outside the euro area, including countries where the Deutsche Mark is an official means of payment or even legal tender. Against this background, and also as a general preference for the euro in eastern Europe may be assumed owing to the close trade and travel links between eastern European countries and the euro area, it is unlikely that the bulk of DEM banknotes and other legacy currencies held outside the euro area will be exchanged for other major currencies.

Some indication that the recent reduction in currency in circulation has not significantly affected M3 growth so far can be derived with the help of money demand models estimated according to historical regularities. In

fact, evidence from a model for M1[2] suggests that current M1 growth is not lower than would be expected on the basis of the model. This is an indication, albeit tentative, that the bulk of the reduction in currency in circulation has been offset by an increase in overnight deposits included in M1.

Finally, it is worth mentioning some considerations with regard to possible effects on M3 at the end of 2001 and the first few months of 2002. First, credit institutions, which will receive euro banknotes and coins in 2001 (frontloading), will be debited for these only at the beginning of 2002, in three steps. According to the "linear debiting model", one-third of the frontloaded amount of banknotes will be debited on 2 January 2002, on 23 January 2002 and on 30 January 2002 respectively. Therefore it is expected that credit institutions will treat the frontloaded banknotes, which are not legal tender prior to 1 January 2002, as off-balance-sheet positions until end-2001. Accordingly, the debiting should not affect their balance sheets either at the end of December 2001 (when the process will not yet have started) or on 31 January 2002 (when the process will already have finished). It should therefore also not affect the respective monetary statistics, which are end-of-month figures. Only if credit institutions sub-frontload banknotes and coins to non-MFIs in 2001 and immediately debit the recipients (as will be the case, for example, for the coins in the euro starter kits), might a reduction be implied in the holdings of deposits, or other M3 components, of those recipients. This effect is expected to be small, however, as in most countries banks are not expected to ask for settlement of the bulk of the sub-frontloaded banknotes and coins before the beginning of 2002. Finally, there might also be some short-term behavioural changes among non-MFIs, which could affect currency in circulation in the first few months of 2002. On the one hand, the dual currency period in the first two months of 2002 might induce retailers to hold more cash than usual, which might then have a short-term upward impact on currency in circulation. On the other hand, consumers might use non-cash payment instruments more intensively around the turn of the year in order to facilitate transactions during the changeover process. However, all these effects will be concentrated on the months directly surrounding the cash changeover and might be offset by changes in other components of M3.

The ECB will continue to monitor closely any indications of an impact of the cash changeover on monetary growth. If there were signs that this were leading to temporary effects on the information content of M3, the ECB would naturally take them into account in its monetary assessment. Thus far, while the cash changeover is having an influence on currency in circulation, the impact on the annual growth rates of euro area M3 appears to be very small.

2   See Stracca, L., 2001, "The functional form of the demand for euro area M1", ECB Working Paper No. 51.