EXCESS DEMAND FOR BANKNOTES IN MALTA

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The amount of banknotes issued by the Central Bank of Malta has persistently exceeded the allocation to the Bank from the ECB’s banknote allocation key, resulting in a corresponding net liability within the Eurosystem. This trend has gathered momentum since the outbreak of the COVID-19 pandemic. This Box reviews the trends and factors influencing the excess demand for banknotes in Malta from a Eurosystem and cross-country perspective.

### Banknotes in circulation

A key operational task of the Eurosystem is to ensure an adequate supply of euro currency to meet demand. In practice, the prerogative of issuing euro banknotes, as well as withdrawing them from circulation, rests on the national central banks (NCBs) of the euro area. Once issued, these banknotes enter circulation either over the banks’ counter or through cash dispensers. Since banknotes are lightweight, easily transportable, and accepted throughout the euro area, as well as in other jurisdictions, they often migrate far from their source of issuance. Consequently, the concept of currency in circulation is only relevant at the level of the Eurosystem and represents the overall volume of banknotes and coins in circulation, including those outside the euro area.

The concept of “net issuance” is used at the national level. Net issuance refers to the cumulative sum of the differences between the withdrawals and lodgements of each NCB since the introduction of the euro. Each NCB in the euro area is allocated a notional amount of euro banknotes in accordance with the so-called ECB banknote allocation key, which is established on the basis of the relative GDP and population size of the Member State. The value of banknotes that each NCB puts into circulation tends to vary from the allocated amount, leading to an excess or shortage of euro banknotes, which then gives rise to intra-Eurosystem balances.

The demand for banknotes in the euro area has increased in recent years even though the use of cash for retail transactions has decreased, as consumers have increasingly resorted to other means of payment. This phenomenon, which is also observed in economies with strong foreign demand for their currencies, is commonly referred to as the “paradox of banknotes” (Bailey, 2009). This counter-intuitive paradox occurs because currency is used both for daily transactions and as a store of value, while it is also influenced by demand from citizens of countries outside the euro area. Cash hoarding could also have increased as the cost of holding cash was relatively low in an environment characterised by low inflation, until late 2021, and by low interest rates. Historically, demand for currency also tends to increase during periods of uncertainty and instability, a trend that has also been observed since the onset of the COVID-19 pandemic.

After the euro cash changeover at the beginning of 2008, the cumulated net issuance of euro banknotes issued by the Central Bank of Malta increased from an initial €434

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2 This Box summarises the key findings of Micallef, B. and Gauci, T. (2022). Excess demand for banknotes in Malta, Central Bank of Malta Policy Note January 2022.

million to €2,238 million at the end of June 2022. Chart 1 shows that since mid-2015, growth in Maltese banknotes has persistently exceeded that in the Eurosystem. In the first six months of 2022, average annual growth in banknotes in Malta stood at 14.4%, compared to 8.4% in the euro area. Since mid-2017, the gap between Malta and euro area growth rates has remained relatively stable at around 8.6 percentage points although it has narrowed in recent months. This positive and persistent differential contrasts sharply with the historical experience since euro adoption, with the average difference in annual growth between 2010 and 2016 amounting to -0.4 percentage point.

Since 2013, the €50 banknote became the most important denomination issued by the Central Bank of Malta. Its attractiveness stems from the fact that it can be used both for transaction purposes as well as a store of value. Also, it is the largest denomination dispensed from ATM machines in Malta. The share of the €500 banknote – which was not included in the Europa series and, as from 2019, is no longer being issued – reached a peak of 43% of the value of Maltese banknotes in circulation in mid-2015 but since then has seen its share decline to 13% by end June 2022. The shares of the €20 and €200 notes have also declined over the years, accounting for 8% and 5% by mid-2022, respectively. The net issuance of the remaining three denominations – €5, €10, and €100 – is negative, suggesting that, on balance, more is lodged at the Central Bank of Malta than issued.

Chart 2 shows that the amount of banknotes issued by the Central Bank of Malta has been consistently greater than the value of euro banknotes allocated to the Bank in line with the ECB’s banknote allocation key.
resulting in a corresponding net liability within the Eurosystem.\textsuperscript{4} Demand for banknotes started growing significantly since 2017, with excess banknotes amounting to €172 million, or 17% of allocated banknotes, by the end of the year. Since then, excess banknotes continued on an upward trend reaching €641 million at the end of 2021, and €691 million at the end of June 2022.\textsuperscript{5}

Excess or shortages of banknotes are common in a monetary union. At the end of 2020, six countries reported an excess demand. Malta’s excess banknotes amounted to 32% of allocated banknotes, which amounts to the fifth highest share among the euro area countries (see Chart 3).\textsuperscript{6} The largest excess is by far recorded in Luxembourg, amounting to 2190% higher than their allocation. In the case of Germany, excess banknotes amounted to 136% of allocated banknotes, followed by Ireland (88%) and Slovenia (68%). On the other hand, 13 countries had a lower net issuance of banknotes, with the largest shortfalls recorded in Portugal (163%), Latvia (105%), Spain (94%) and the Netherlands (85%). This excess demand or shortfall tends to be quite persistent, as in 2020 all countries reported a similar position to 2019.

**Demand for banknotes following the COVID-19 pandemic**

Demand for cash tends to increase during periods of uncertainty and instability, reflecting a precautionary motive to crisis management (Caswell et al., 2020).\textsuperscript{7} This trend has been observed during the COVID-19 pandemic as well as in past crises, independent of the nature of the crisis itself. Following a period of relatively stable growth, net issuance by the Central Bank of Malta grew by 18.3% in 2020, a sharp increase compared to previous years. This was also the case in the euro area, with banknotes increasing by 11.0% during 2020. This hike is almost comparable to that experienced in the months following the collapse of Lehman Brothers in September 2008.

\textsuperscript{4} Each NCB in the euro area is allocated an amount of euro banknotes in accordance with the banknote allocation key. The difference between the value of euro banknotes allocated to the bank and the value of the euro banknotes that the bank puts into circulation gives rise to intra-Eurosystem balances. If the value of the actual euro banknotes issued is above the value based on the banknote key, the difference is recorded as an excess (positive balance) and a corresponding net liability is disclosed. If the value of the actual euro banknotes issued is below the value based on the banknote key, the difference is recorded as a shortfall (negative balance) and a corresponding net claim arises.

\textsuperscript{5} The position bears interest at the rate applied for the MROs.

\textsuperscript{6} Luxembourg is an outlier and is thus excluded from the chart.

Chart 4 shows the net issuance of euro banknotes in Malta since the outbreak of the pandemic and how they compare with the previous two years. After the negative issuance in the first weeks of the year, which is a common occurrence following the Christmas festivities when returned banknotes exceed issued banknotes, net issuance in 2020 started deviating from the normal growth rate once the effects of the COVID-19 pandemic started to be felt in Europe and across the world. In the two years prior to the pandemic, net issuance was broadly similar, averaging €190 million per year. In 2020, net issuance started to deviate from previous years’ pattern from around April, and by December it stood at €284 million. Net issuance rose even higher in 2021, amounting to €299 million by the end of 2021. For 2022, net issuance seems to be in line with the same pattern observed in 2020.

A similar experience is also evident at the euro area level, which is attributed to the COVID-19 pandemic. Other authors however attribute the motives behind the increase in global currency demand as a shift from transaction balances towards more hoarding, especially in the form of large denomination banknotes.

**Calculation of the ECB banknote key**

Excess demand or shortfall of euro banknotes at the country level is determined according to the calculation of the so-called banknote key. The process to determine the banknote key is threefold.

First, the capital key is determined. The capital key, which determines each NCB’s subscription to ECB capital, is calculated according to the size of a member state in relation to the EU according to their population and GDP. These two factors have equal weighting. The capital key is recalculated every five years to reflect changes in the size of each country’s population and economy, both over time and in proportion to the rest of the EU. The capital shares are also adjusted whenever a new member joins or exits the European System of Central Banks (ESCB). The latest adjustment took place on 1 February 2020 following the withdrawal of the United Kingdom from the EU. The capital key for Malta is

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0.0853%, the smallest share amongst the EU27 countries. At the end of 2021, euro area NCBs accounted for 81.3286% of total capital.

The second step involves the calculation of the Eurosystem key, which includes only the euro area NCBs. Thus, the share of non-euro area NCBs is omitted from this calculation, and the euro area NCBs capital is rebased to 100%.

Finally, the banknote allocation key builds upon the Eurosystem capital key as it includes euro area NCBs as well as the ECB. The share of the latter is 8% with the remaining 92% allocated amongst euro area NCBs in line with the Eurosystem key. Following this rebasing, Malta’s banknote allocation key amounts to 0.0965%. The population figures on which the current capital key is computed refer to 2016, while GDP figures refer to average GDP between 2011 and 2015. Developments in economic activity and population have evolved significantly in Malta since then, as the country experienced a strong period of economic and population growth. Thus, part of the excess demand for banknotes in Malta can be attributed to the fact that the ECB banknote key is based on estimates that do not accurately reflect the strong population and economic growth registered in Malta in recent years.

**Structural factors affecting the demand for currency**

Money has essentially three functions: a medium of exchange, a store of value and a unit of account. Studies of currency demand usually focus on transaction motives, its role as a store of value and the importance of foreign demand for currency.\(^{10}\) Estimates for the euro area suggest that only around 20% of the value of euro banknotes in circulation are held for transaction purposes, between 28% and 50% are held as store of value inside the euro area, while 30% to 50% held outside the euro area.\(^{11}\) Analysing the potential role of these factors in Malta requires the evaluation of a number of indicators including consumption patterns and payment habits, estimates of the underground economy and factors influencing external demand such as the size of the tourism industry and remittances by migrant workers.

Table 1 summarizes the cross-country evidence from various structural factors in the form of a heat-map. The table looks at seven indicators for all euro area countries as follows: economic activity, population growth, preference for the use of cash in payments, tourism activity, importance of migration, share of third-country nationals (TCNs) and the size of the informal economy. The table classifies these indicators in three categories: 1 (high, in green), 2 (medium, in yellow) and 3 (low, in red). The exact definitions, sources and classification of these variables is found in Table 2. For instance, the indicator ‘Population’ refers to the average growth rate in population between 2015 and 2019, with 1 referring to average growth in excess of 1% per annum, 2 refers to average growth between 0% and 1%, while 3 indicates those countries with negative annual population growth.


Overall, the evidence is mixed since most factors are registered both by countries that report excess demand for banknotes and those with shortages. The only exception is population growth, where the only three countries with average growth exceeding 1% per annum over the period 2015-2020 all reported excess demand for banknotes. For some factors, the balance of evidence between excess demand or shortage is broadly balanced. These include economic activity, the share of migrants in the working-age population (both

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overall and TCN migrants) and preference for the use of cash in domestic payments. Four of the six countries that reported an excess demand for banknotes have relatively high share of migrants in the working-age population, potentially pointing to an important role of remittances. Finally, the evidence in favour of tourism and the underground economy is relatively weak. In both instances, several countries that are highly reliant on tourism and have a relatively large underground economy (in excess of 25% according to the estimates by Medina and Schneider (2018)), such as Italy, Greece, and Cyprus, tend to report banknote shortages rather than an excess, unlike Malta.

Results should be interpreted with caution as it is possible that some of the indicators are correlated with each other. For instance, in most countries, including Malta, population growth is mostly driven by migration, given the relatively low fertility rates and an ageing population in Europe. Similarly, financial institutions may be reluctant to open bank accounts for individuals employed in the informal economy, which in turn raises the dependency on cash payments. Migrants without access to a bank account might have a higher propensity to use informal channels involving cash for remittances. Hence, the possibility of such correlations between these indicators should be kept in mind when interpreting the results, since most of these variables, except for tourism, are not entirely independent of each other.

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