Charity Donations and the Euro Introduction: Some Quasi-Experimental Evidence on Money Illusion

Peter Kooreman, Riemer P. Faber, Heleen M. J. Hofmans

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PETER KOOREMAN
RIEMER P. FABER
HELEEN M.J. HOFMANS

Charity Donations and the Euro Introduction: Some Quasi-Experimental Evidence on Money Illusion

We compare the revenues of a house-to-house collection for a charity before and after the introduction of the euro in a ceteris paribus setting. We find strong evidence of money illusion, supplementing earlier econometric, experimental, and survey evidence on its existence.

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THE QUESTION WHETHER money illusion exists is an empirical one. Credible answers to this question are not easily obtained, however. The economics literature shows various approaches that have been followed to find empirical evidence on money illusion.

One approach is empirical consumer demand analysis. The frequent failure of estimated demand functions to pass a test for zero degree homogeneity in prices has been taken as an indication for the existence of money illusion; see e.g. Deaton and Muellbauer (1980). A problem with this interpretation is that rejecting homogeneity may also result from misspecification of the econometric model. A second approach—focused more explicitly on measuring money illusion—has used survey information on hypothetical choices made by the respondents; see Shafir, Diamond, and Tversky (1997) for an example. Clearly, this type of evidence is subject to the usual qualifications regarding stated preference data, in particular the lack of incentives for respondents to provide meaningful answers. A third and more recent type

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PETER KOOREMAN *is a professor of economics at the University of Groningen. E-mail:* p.kooreman@eco.rug.nl RIEMER FABER *and* HELEEN HOFMANS *are economics students at the University of Groningen.*

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of evidence on the existence of money illusion is based on laboratory experiments; see e.g. Fehr and Tyran (2001). One disadvantage of such experimental evidence is that it is artificial by its nature; the laboratory behavior of economic agents may give an indication of their behavior in real-world settings, but this is not necessarily the case.

In this note, we provide a new type of evidence on the existence of money illusion based on a quasi-natural experiment: the recent introduction of the euro in The Netherlands. On January 1, 2002, the euro replaced the guilder as the national currency at an exchange rate of 2.20371 guilder for 1 euro. While the introduction of the euro may have triggered real price changes in some markets, it obviously left unchanged the real price of a donation. We therefore compare the revenues of a specific charity before and after the euro introduction in a ceteris paribus setting. If money illusion would be absent, the annual change in the charity's revenue should be about equal to the inflation rate, as observed in pre-euro years.

1. THE QUASI-EXPERIMENT

In order to be able to attribute a change in charity revenues to the introduction of the euro, other factors that potentially affect revenues should be kept constant. To this end, we choose to analyze the annual donations for a national charity in a clearly delineated population of 7500 households in three rural villages in the North of The Netherlands (Haren, Onnen, and Noordlaren). In the years we consider, 1999–2003, the change in the population was negligible. The charity is the National Collection for Mentally Handicapped Persons (NKGG). In each year, the collection was held in the same period (third week of September) and used the same collection method (house-to-house collection using collecting boxes). In contrast to other charities, the revenues for NKGG are unlikely to be sensitive to events like natural disasters or wars.

2. RESULTS

For each year, we have data on the exact revenues per coin and note. Table 1 shows that in 2000 and 2001, the revenues increased by 2.2% and 1.3% compared with the previous year. In 2002, when the euro had been introduced, the revenues were 11.1% higher than in 2001, the final year of the guilder. In 2003, the increase was 5.1%. In the pre-euro years, the revenue increases did not exceed the inflation rate. In the euro years, the increases were substantially larger than the inflation rate, in particular in 2002, the first euro year. (Given the absence of information on the variance of donations across households, the data do not allow for a meaningful statistical test of the significance of changes across years.)

Table 1 shows that before the euro was introduced, the frequencies of the various coins collected were remarkably stable. In all years, the one guilder coin was given

TABLE 1

NUMBERS OF COINS COLLECTED, 1999–2003

Guilder Coins	1999	2000	2001	Euro coins	2002	2003
0.05	801	1000	1319	0.01	887	777
0.1	1316	1260	1608	0.02	1083	971
0.25	1933	1681	1829	0.05	1087	966
1	3901	3885	3839	0.10	1173	1102
2.5	760	774	825	0.20	1795	1726
5	759	841	883	0.50	1680	1712
10	94	100	75	1.00	1643	1674
25	11	6	7	2.00	1204	1260
50	0	1	1	5.00	91	117
100	1	0	0	10.00	9	16
250	0	0	0	20.00	2	1
1000	0	0	0	50.00	0	0
				100.00	0	0
Number of coins	9576	9548	10386		10654	10322
Total revenues (in €)	5248.38	5364.25	5434.24		6037.18	6345.89
Increase in revenues (%)	—	2.2	1.3		11.1	5.1
Inflation Sept–Sept (%)[a]	—	2.6	3.7		3.4	2
Revenue per household	0.69	0.71	0.72		0.80	0.85
Coins per household	1.27	1.26	1.37		1.41	1.38
Increase in real disposable income (%)[b]	−0.1	1.0	6.6		0.1	−1.3

[a]Source: Statistics Netherlands (www.cbs.nl).
[b]Source: CPB Netherlands Bureau for Economic Policy Analysis (www.cpb.nl).

most frequently, followed (with distance) by the coins below one guilder. Coins and notes above one guilder were given with the lowest frequencies. After the introduction of the euro, the differences in frequencies of the various coins are much smaller than before. There is not a single popular coin, but rather a group of three coins that are donated with about equal frequencies: the 0.20, 0.50, and 1.00 euro coins. The four denominations smaller than 0.20 euro have much lower frequencies, but not as low as for coins and notes above 1 euro. The information is shown for the total of the three municipalities; the data for the separate villages show similar patterns.

3. DISCUSSION

Although we cannot exclude that the differences in revenues across years reflect changes in compassion with mentally handicapped persons, we consider this as highly unlikely. It also seems highly implausible that the differences were caused by changes in income or wealth; as Table 1 shows, the change in real disposable income in The Netherlands was virtually zero in 2002 and negative in 2003. A general explanation for our findings is that consumers fell prone to money illusion due to the euro introduction. A specific potential explanation for the more than 10% increase in 2002 is related to the guilder–euro exchange rate (2.20371 guilders for 1 euro). To save on cognitive effort, people might divide previous guilder amounts by 2 rather than by 2.20371, which would result in a 10% increase in donated

amounts. Moreover, in order to donate the exact equivalent of, for example, 1 guilder, the use of several coins is required. Individuals might then round off their contributions to one 0.50 euro coin. One might expect that the number of 0.50 euro coins should then be about equal to the number of 1 guilder coins. Note, however, that coin frequencies also depend on the frequencies in the wallet, which in turn depend on the frequencies with which they have been brought into circulation. In view of the small stakes and the short time available for reflection when making a donation, explanations related to money illusion are likely to be more important than in cases where the amounts at stake are larger.

The result for 2003 suggests that the effect of the euro introduction will eventually disappear, with the increases in the annual revenues returning to their approximate-inflation levels.

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