Kooreman, Peter; Faber, Riemer; Hofmans, Heleen

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

IZA Discussion Papers, No. 1318

Provided in Cooperation with:
IZA – Institute of Labor Economics

Suggested Citation: Kooreman, Peter; Faber, Riemer; Hofmans, Heleen (2004): Charity Donations and the Euro Introduction: Some Quasi-Experimental Evidence on Money Illusion, IZA Discussion Papers, No. 1318, Institute for the Study of Labor (IZA), Bonn

This Version is available at:
http://hdl.handle.net/10419/20585

Terms of use:
Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.
IZA DP No. 1318

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

Peter Kooreman
Riener Faber
Heleen Hofmans

September 2004
Charity Donations and the Euro
Introduction: Some Quasi-Experimental Evidence on Money Illusion

Peter Kooreman
University of Groningen
and IZA Bonn

Riemer Faber
University of Groningen

Heleen Hofmans
University of Groningen

Discussion Paper No. 1318
September 2004

IZA
P.O. Box 7240
53072 Bonn
Germany
Phone: +49-228-3894-0
Fax: +49-228-3894-180
Email: iza@iza.org

Any opinions expressed here are those of the author(s) and not those of the institute. Research disseminated by IZA may include views on policy, but the institute itself takes no institutional policy positions.

The Institute for the Study of Labor (IZA) in Bonn is a local and virtual international research center and a place of communication between science, politics and business. IZA is an independent nonprofit company supported by Deutsche Post World Net. The center is associated with the University of Bonn and offers a stimulating research environment through its research networks, research support, and visitors and doctoral programs. IZA engages in (i) original and internationally competitive research in all fields of labor economics, (ii) development of policy concepts, and (iii) dissemination of research results and concepts to the interested public.

IZA Discussion Papers often represent preliminary work and are circulated to encourage discussion. Citation of such a paper should account for its provisional character. A revised version may be available directly from the author.
ABSTRACT

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.

JEL Classification: D12

Keywords: money illusion, quasi-experiment, behavioral economics

Corresponding author:

Peter Kooreman
Department of Economics
University of Groningen
P.O. Box 800
9700 AV Groningen
The Netherlands
Email: p.kooreman@eco.rug.nl

∗ We thank Ms. A. Nijborg for providing the data, and Willem Boeschoten, Marco Haan, Bert Schoonbeek, and one of the editors for helpful comments.
1. Introduction

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 et al. (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 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.

2. 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.

3. 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 percent compared
with the previous year. In 2002, when the euro had been introduced, the revenues
were 11.1 percent higher than in 2001, the final year of the guilder. In 2003 the
increase was 5.1 percent. 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 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 one euro. The information is shown for the
total of the three municipalities; the data for the separate villages show similar
patterns.
4. 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 ten percent 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 ten percent 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.

References


## Table 1. Numbers of coins collected, 1999-2003

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0.05</td>
<td>801</td>
<td>1000</td>
<td>1319</td>
<td>0.01</td>
<td>887</td>
<td>777</td>
</tr>
<tr>
<td>0.1</td>
<td>1316</td>
<td>1260</td>
<td>1608</td>
<td>0.02</td>
<td>1083</td>
<td>971</td>
</tr>
<tr>
<td>0.25</td>
<td>1933</td>
<td>1681</td>
<td>1829</td>
<td>0.05</td>
<td>1087</td>
<td>966</td>
</tr>
<tr>
<td>1</td>
<td>3901</td>
<td>3885</td>
<td>3839</td>
<td>0.10</td>
<td>1173</td>
<td>1102</td>
</tr>
<tr>
<td>2.5</td>
<td>760</td>
<td>774</td>
<td>825</td>
<td>0.20</td>
<td>1795</td>
<td>1726</td>
</tr>
<tr>
<td>5</td>
<td>759</td>
<td>841</td>
<td>883</td>
<td>0.50</td>
<td>1680</td>
<td>1712</td>
</tr>
<tr>
<td>10</td>
<td>94</td>
<td>100</td>
<td>75</td>
<td>1.00</td>
<td>1643</td>
<td>1674</td>
</tr>
<tr>
<td>25</td>
<td>11</td>
<td>6</td>
<td>7</td>
<td>2.00</td>
<td>1204</td>
<td>1260</td>
</tr>
<tr>
<td>50</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>5.00</td>
<td>91</td>
<td>117</td>
</tr>
<tr>
<td>100</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>10.00</td>
<td>9</td>
<td>16</td>
</tr>
<tr>
<td>250</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>20.00</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>1000</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>50.00</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100.00</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

|               | 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 (%)  | -    | 2.6  | 3.7  | 3.4  | 2    |
| Revenu 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 (%)  | -0.1 | 1.0  | 6.6  | 0.1  | -1.3 |

1) Source: Statistics Netherlands (www.cbs.nl)
2) Source: CPB Netherlands Bureau for Economic Policy Analysis (www.cpb.nl)