

Household Perceptions of Inflation and the Euro

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- Households in Greece and in the remaining countries of the Eurozone are pessimistic about inflationary developments, particularly after the introduction of euro coins and banknotes. On the contrary, households in Denmark, the UK and Sweden, the three EU-15 countries that have not adopted the euro, do not share the same pessimism.
- Prior to the introduction of the Euro in scriptural form, household perceptions of past inflation were positively related to actual past inflation. However, following the introduction of euro coins and banknotes on 01/01/2002, the positive correlation broke down in the Eurozone countries. It did not break down in the three countries outside the Eurozone.
- The different post-2001 pattern of household inflation perceptions, as well as their correlation with actual inflation, across EMU and non-EMU countries, suggests the presence of causal link from the introduction of euro coins and banknotes to the increasing pessimism about inflation in Greece and the Eurozone.

Household Perceptions of Inflation and the Euro

By Gikas Hardouvelis, Elena Simintzi & Olga Kosma

Synopsis

1. Introduction

At the end of the 1990s, the Greek rate of inflation came down to the level of around 3% from high levels in the earlier part of the decade, thanks to the country's efforts to satisfy the Maastricht criteria and join the Euro area. However, despite this substantial reduction in inflation, Greek households believe that the euro is responsible for the price increases they currently observe. Indeed, not only Greek households, but households in the rest of EU-12 countries as well complain about inflation and the euro (Figure 1). This household discontent is a puzzle. The paper describes household perceptions about inflation over time and explores if the latter have deteriorated after the introduction of the euro. Moreover, the study analyzes the relationship between inflation perceptions and actual inflation. Thus, the paper examines if household perceptions are in line with inflation data and if the relationship between the two measures has changed after the introduction of euro banknotes and coins as of January 2002.

2. Household Perceptions of Inflation over time

Household inflation perceptions are surveyed every month by the European Commission, which then provides an indicator of perceived inflation. This survey is conducted in all EU countries by means

of a harmonized questionnaire since 1985. One of the questions in the survey is the following: "How do you think that consumer prices have developed over the last 12 months?" The possible responses are: "risen a lot", "risen moderately", "risen slightly", "stayed about the same", "fallen", "don't know". The constructed indicator is a balance between the weighted proportion of households stating that consumer prices have risen over the last 12 months and the weighted proportion of households answering that prices have fallen, or remained stable over the same period. The indicator is a measure of the average perceptions of inflation in each country. An increase of the index in month t indicates that more households in month t , compared to the previous month $t-1$, believed that prices increased over the last 12 months. The fact that the survey has been carried out consistently since 1985 allows the comparison of household inflation perceptions before the introduction of the euro with those after its introduction.

The indicator of perceived inflation in Greece is positive throughout the period from 1985 till present. The positive sign of this indicator reflects households' pessimism regarding inflationary developments. The indicator has increased dramatically since 2002 (Figure 2). It is highly likely

that this was the impact of the euro cash changeover. Figure 3 depicts household inflation perceptions in the Eurozone. Similar to Greece, the number of households in Eurozone that perceive higher inflation increased strongly in 2002. On the contrary, the majority of households in the EU-15 countries that have not adopted the euro (Denmark, UK, Sweden) believe that prices have fallen or have remained broadly unchanged.

3. Household Inflation Perceptions and Actual Inflation

The dramatic rise in perceived inflation in 2002, which coincides with the euro cash changeover, might be the result of a change in inflationary developments rather than the presence of the euro. Thus, the paper subsequently examines the relationship between perceived inflation and actual inflation. We expect this correlation to be positive if households are rational. Indeed, it appears that households perceived actual price developments of the last 12 months quite well during the period before the EMU entry. Namely, when actual inflation increased, the household perceptions indicator increased as well. On the contrary, since 01/01/2002 the evolution of the inflation perceptions indicator has not been consistent with actual price developments neither in Greece nor in the Euro area. This inconsistency is reflected in the stability of actual inflation and the simultaneous increase of perceived inflation. Hence, the positive relationship between the two measures has broken down.

The above conclusion was confirmed by calculating the correlations between the household inflation perceptions indicator and the actual inflation rate, as well as by means of an econometric analysis. The correlation between

inflationary perceptions and actual inflation was positive, $\rho=0.57$, during the period 01/1985-12/2000. On the contrary, the correlation was negative and not statistically significant ($\rho=-0.41$) during the period 01/2002-05/2007 (Figure 3). The corresponding measure for the Eurozone was $\rho=0.94$ before 1999 and around zero after 01/01/2002 (Figure 4). However, in the three EU-15 countries, which have not adopted the euro (Denmark, UK, Sweden), the correlation remained positive and particularly strong even after 1st January 2002, being equal to 0.60.

The econometric analysis strongly confirms the conclusions mentioned above. According to Table 1, during the period before the EMU entry, Greek households took into account the evolution of actual inflation when they were asked to give their view on price developments over the last 12 months. Specifically, an increase of 1% of the yoy inflation rate would increase the household inflation perceptions indicator by 0.23 units. However, this positive and statistically significant relation broke down after 1st January 2002. The econometric model shows that a similar pre-1998 and post-2001 behavior characterizes households in the Eurozone.

The change in the way households perceive inflation after 01/01/2002 cannot be justified by actual inflation and thus can be attributed to the adoption of the euro. The causal relationship between the euro and household inflation perceptions deterioration is confirmed by the different findings for the EU-15 countries that have not adopted the euro. The results for this group of countries are presented in Table 2. The coefficient of inflation in our model increased from 0.17 during the 1990-1998 period to 1.10 during the period 2002-2007.

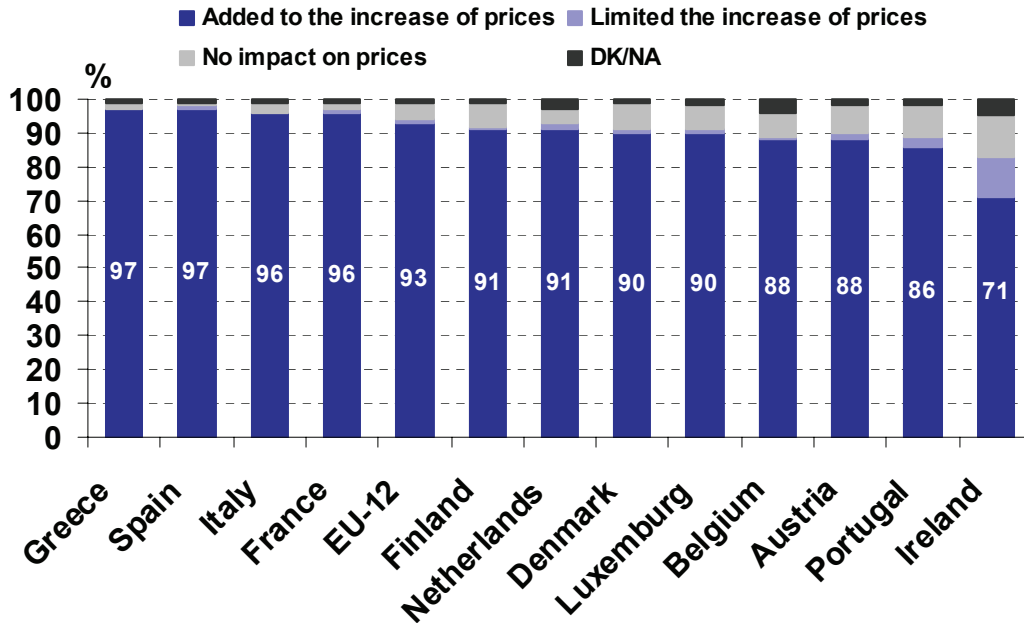
4. Household Inflation Perceptions and sub-groups of the Consumer Price Index

The study also examines whether household inflation perceptions are particularly sensitive to price changes in certain sub-groups of the Consumer Price Index (CPI). Indeed, during the period before the euro adoption, Greek households, when shaping their perception about inflation, were mainly influenced by price changes of basic goods and services. Since 2002 this relation broke down.

5. Conclusion

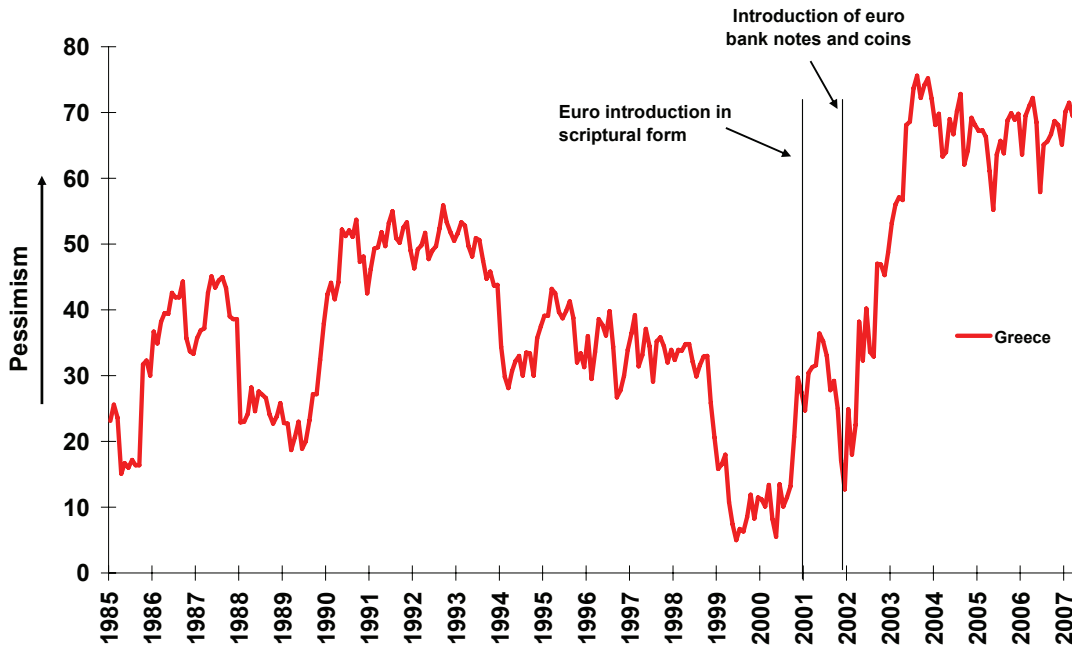
The euro seems to have caused a deterioration in household inflation perceptions in Greece and in the Eurozone since 2002. The deterioration did not occur in the EU-15 countries that have not adopted the euro, providing evidence of a causal influence running from the presence of the euro to the deterioration in inflationary expectations. The distortion of household perceptions might have a negative impact on households' budget planning, an item left for future research.

Figure 1:
Effect of euro on price stability, 2006



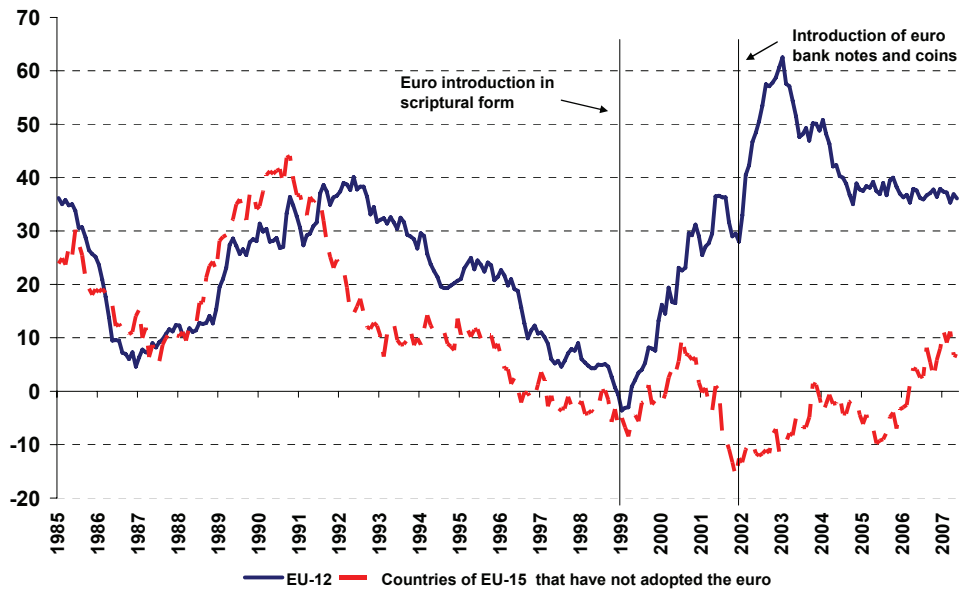
Source: Flash EB 193, September 2006 GALLUP, 1000 respondents in each country

Figure 2:
Household Inflation Perceptions Indicator in Greece



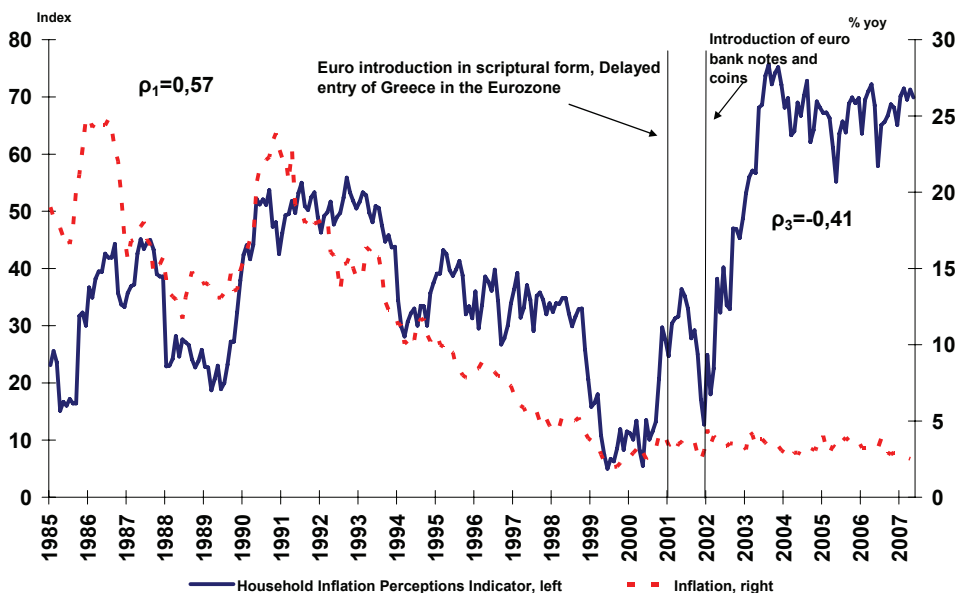
Note: The Household Inflation Perceptions Indicator refers to price developments over the last 12 months. An index increase suggests that households are pessimistic about inflation, whereas a reduction of the index suggests greater household optimism.

Figure 3:
Household Inflation Perceptions Indicator in the Eurozone
and in the EU-15 countries that have not adopted the euro



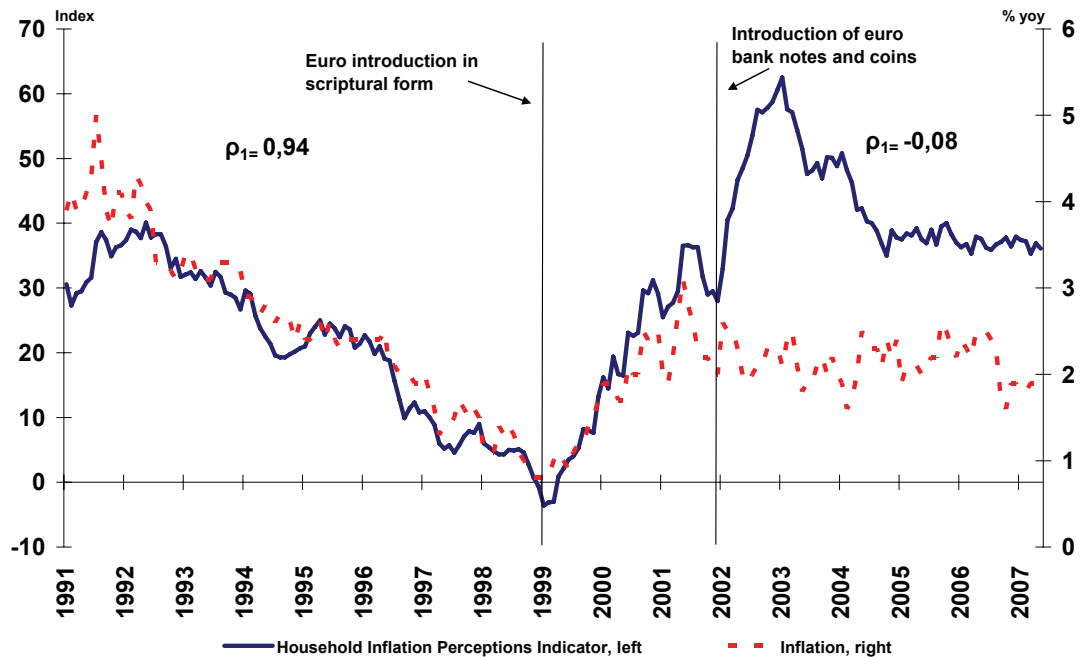
Note: See Note in Figure 2. The Household Inflation Perceptions Indicator in the EU-15 countries that have not adopted the euro is the weighted average of the individual Indicators for UK, Sweden and Denmark. However, from January 1985 until September 1995, this indicator is the weighted average of the individual Indicators for UK and Denmark, since the indicator for Sweden has been available only since October 1995. The weights used are the ones provided by the European Commission Consumer Survey. The latter are calculated on the basis of the final private consumption expenditure at constant prices.

Figure 4:
Household Inflation Perceptions Indicator and Actual Inflation in Greece



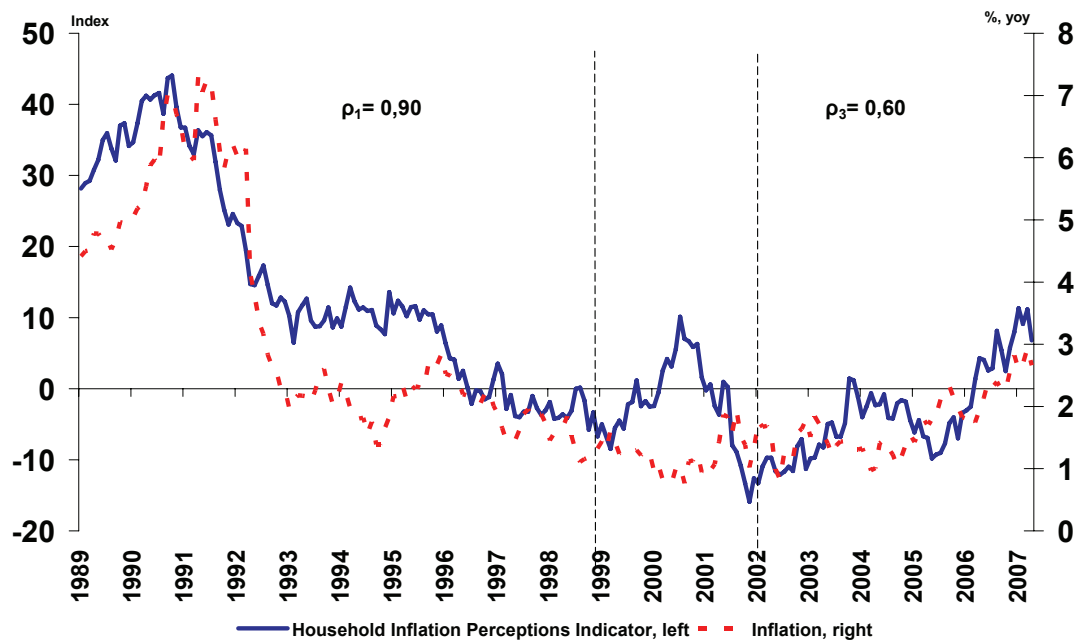
Note: See Note in Figure 2.

Figure 5:
Household Inflation Perceptions Indicator and Actual Inflation in the Eurozone



Note: See Note in Figure 2.

Figure 6:
Household Inflation Perceptions Indicator and Actual Inflation in the EU-15 countries that have not adopted the euro



Note: See Note in Figure 3. The weighted average inflation of Denmark, Sweden and UK is calculated on the basis of the weights provided by Eurostat.

Table 1:
Inflation's effect on Greek household inflation perceptions' development

$$Perceptions_t = c + a * Perceptions_{t-1} + \beta * Inflation_{t-1} + \varepsilon_t$$

	Greece	
	01/1990-12/2000	01/2002-05/2007
	(1)	(2)
c	1,79 (1,94)	11,33* (2,23)
α	0,88* (22,57)	0,86* (16,53)
β	0,23* (2,70)	-0,53 (-0,39)
R² adj	0,94	0,88

Note: The statistics in parentheses are t-statistics corrected for heteroskedasticity according to White (1980). Asterisk denotes statistically significant coefficients at the 5% level. R² adj is the coefficient of determination corrected for degrees of freedom.

Table 2:
**Inflation's effect on household inflation perceptions' development
 in the Eurozone and in the EU-15 countries outside the Eurozone**

$$Perceptions_t = c + a * Perceptions_{t-1} + \beta * Inflation_{t-1} + \varepsilon_t$$

	Eurozone		Non EU-12 Countries	
	01/1991-12/1998	01/2002-05/2007	01/1990-12/1998	01/2002-05/2007
	(1)	(2)	(1)	(2)
c	-2,18* (-3,79)	-0,78 (-0,29)	0,05 (0,10)	-1,99 (-1,84)
α	0,85* (19,54)	0,94* (23,33)	1,01* (30,79)	0,89* (19,97)
β	1,93* (3,51)	1,58 (1,38)	-0,17 (-0,66)	1,10 (1,79)
R² adj	0,98	0,92	0,98	0,87

Note: The statistics in parentheses are t-statistics corrected for heteroskedasticity according to White (1980). Asterisk denotes statistically significant coefficients at the 5% level. R² adj is the coefficient of determination corrected for degrees of freedom.

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