

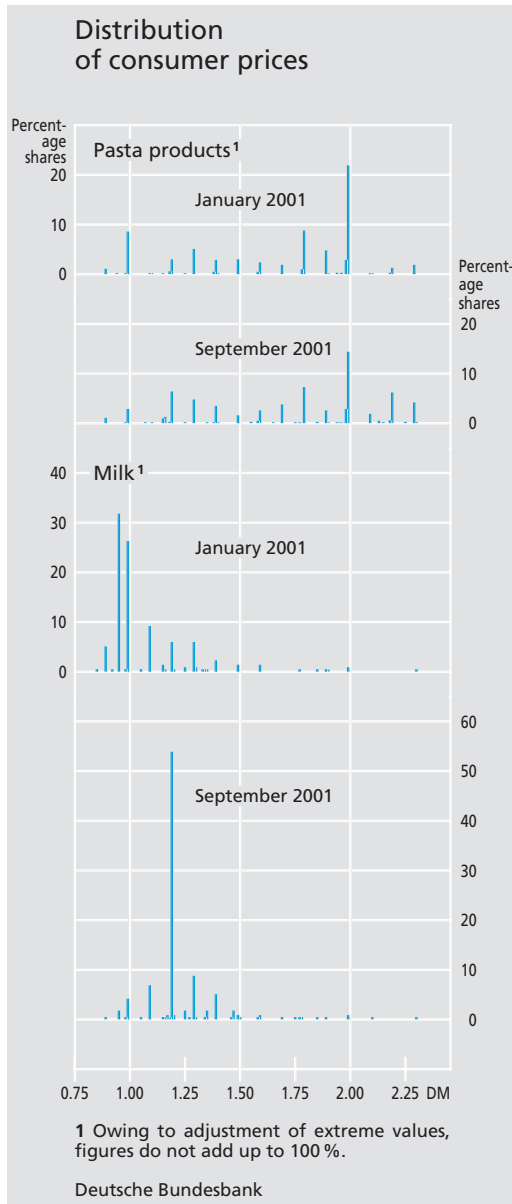
Appendix: Price analysis in the period of changeover from the D-Mark to the euro

Many consumers fear that there will be unjustified price rises during the changeover from the D-Mark to euro banknotes and coins at the start of next year. The Federal Statistical Office and the Deutsche Bundesbank have therefore decided to monitor and analyse the period of changeover to prices in euro in a particular way. The studies will be conducted between spring 2001 and autumn 2002, and will be based on individual data derived from price surveys on roughly 35 goods jointly selected from the consumer price index by the Federal Statistical Office and the Bundesbank.

The Federal Statistical Office will concentrate on the question of whether changes in prices associated with the euro replacing the D-Mark as legal tender will lead to prices that are "attractive" when converted into euro. As defined by the Federal Statistical Office, "attractive" means "smooth" prices ending in 0 or 5 or "threshold" prices ending in 8 or 9.¹ Converting a threshold price of DM 1.99 using the conversion factor of EUR 1 = DM 1.95583 produces a euro price of EUR 1.02 (rounded to two decimal places). Since this is a disadvantageous price in psychological terms, the retail trade – given an unchanged price strategy – might endeavour to achieve a price rounded down to EUR 0.99 or one rounded up to EUR 1.09. As long as payment has to be made in D-Mark, these prices would correspond to DM 1.94 and DM 2.13, respectively. The Federal Statistical Office describes such price changes as "euro-induced", although this does not imply a

*The study
method
employed by
the Federal
Statistical
Office*

¹ Press release of the Federal Statistical Office, 23 October 2001, *Preisynamik beim Übergang auf Euro-Preise*.



claim to be stating anything about the reasons for the price change in question.

Analytical
approach
taken by the
Bundesbank

By contrast, the Bundesbank will monitor how frequently certain prices occur in the total number of individual data collected for the price analysis, i.e. the frequency distributions will be analysed. This will make it possible to verify whether the categories of "smooth" prices and "threshold" prices, re-

spectively, are especially well represented in line with the theory of "psychological price-setting". Furthermore, the changes in the distributions will reveal what adjustments are made in the majority of cases towards achieving the attractive euro prices that are likely to be desired in the end.

The analyses undertaken by the Federal Statistical Office on the basis of the figures for the past few months have shown that a changeover to attractive euro prices is observable only in a small number of cases at present. The estimated impact of euro-induced price changes in the case of, say, grade-A butter, pasta products (made with eggs), and milk chocolate ranges between 0.2 and 0.4 percentage points. The overall price changes observed in the case of the three products ranged between 3% (pasta products) and 6% (grade-A butter), measured by the year-on-year rate of price increase between August 2000 and August 2001, with no more than about 10% complying with the above-mentioned definition of "euro-induced".

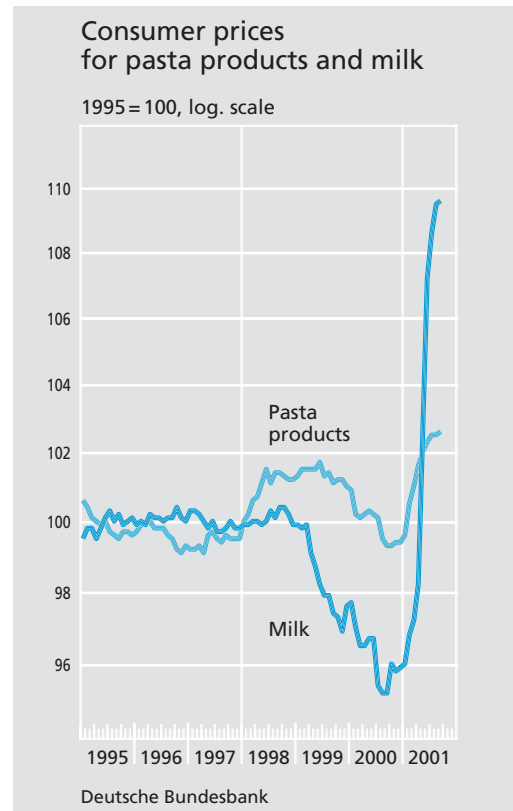
*Initial findings
of the Federal
Statistical
Office*

The studies conducted by the Bundesbank so far show that the empirical price distributions are dominated by typical threshold prices. In the case of low prices for, say, food, the vast majority of prices have the figure "9" in the second Pfennig place. For example, 22% of all prices for pasta products observed by those surveying prices at the start of the year were at DM 1.99, 9% were at DM 0.99. In the case of butter, 44% of reported prices were at DM 1.89, and 22% were at DM 1.99.

*Bundesbank
findings so far*

Price increases for some goods can be clearly identified by shifts in the frequency distributions for the individual months. This applies especially to food, but less so to technological products. In early 2001, 58 % of all prices reported for UHT milk fell into the price categories DM 0.95 and DM 0.99. In mid-year, the majority of prices (54 %) had shifted to DM 1.19 (not DM 1.09). In the case of sugar, the reference figures were 58 % for DM 1.69 in January 2001, and 60 % for DM 1.79 in September.

These price increases are likely to have been due to a number of factors, such as hard wheat becoming more expensive as well as shifts in supply and demand on account of BSE and foot-and-mouth disease. It should be noted as a basic point that strict conversion from D-Mark into euro, followed by an adjustment to threshold prices, often results in "lower" prices. For example, the changeover from DM 1.99 to EUR 1.02 and an ensuing adjustment to EUR 0.99 results in a fall in price of almost 3 % – something which suppliers of food products are hardly likely to accept gladly, given the (in many cases) narrow margins in this area. Raising the price to EUR 1.05, however, results in what looks like a much less favourable price. Given the competitive situation and the growing awareness of customers, increasing the price to EUR 1.09 might be difficult to put into effect. Furthermore, the retail trade has committed itself to convert existing selling prices correctly at the time of the changeover to the new euro currency and to apply the rounding rules in accordance with the relevant EU regulation. It therefore appears to be the obvious



thing to attempt price increases prior to the changeover in order to gain leeway for price reductions at a later date.

Upward price adjustments may also appear desirable at present because of the intense price competition between large retailers at the end of the nineties and in early 2000. This even led to the Federal Cartel Office intervening to prohibit sales below cost price. As a result, the intensity of retail trade competition has abated somewhat, and price increases have been easier to put into effect. Also, as already mentioned, retail trade cost prices have risen sharply in some cases. This is especially the case for meat and milk products.

There is a possibility – which cannot be ruled out – that the change in the appearance of

prices and the fact that they “look” lower as a result of the currency changeover are seen as helpful in terms of price adjustments. Nevertheless, it would undoubtedly be inaccurate to regard the movements in food prices over the past few months as being predominantly euro-induced.

Overall, the analyses so far do not permit a final judgement to be formed concerning price changes in connection with the changeover to euro prices. Reporting on this subject will be continued.