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# Comment on “Perceived Inflation and the Euro: Why High? Why Persistent?”

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The introduction of the euro as a noncash currency in 1999 and in cash form in 2002 went smoothly thanks to professional preparation and efficient changeover. Nevertheless, in all EU Member States, and, as expected, mainly in the countries of the European Economic and Monetary Union (EMU), the euro prompted discussions in which the people expressed their fears and hopes, developed social ideas about the “new unit” and formed expectations about changes in the economic situation for the individual and the nation. Of particular interest were the price changes caused by the currency changeover or attributable to the euro.

While the statistically measured inflation rates (e.g. the Harmonized Index of Consumer Prices, HICP) were and still are relatively low throughout the EMU, the inflation “perceived” by the general public has been much higher. In the euro area the gap between the HICP and perceived inflation continues to be significant. According to Stix (in this volume), there is still a divergence between perceived inflation and actual inflation. Why do the price increases perceived by consumers differ substantially from those actually recorded? In his study, Stix (in this volume) deals with possible causes.

The people of the EMU were asked to say goodbye to their familiar national currencies, to handle new banknotes and coins and to develop a subjective perception of the prices in euro. Over the last decade, economic and social psychology studies have dealt with the currency changeover, trying to find some evidence why and how people have come to perceive the euro as “Teuro” (“Teuro” being a German portmanteau word combining “euro” and “teuer”, the German word for expensive). One explanation lies in the change of the currency as such: With the introduction of the euro, subjective, readily available routines for what was expensive or cheap became ineffective and new standards had to be developed to be able to assess prices (Kühberger and Keul, 2003; Meier-Pesti and Kirchler, 2001, 2003). Hardly surprising, a phase of uncertainty started, which was partly accompanied by distrust and hesitant spending. Meier-Pesti and Kirchler (2001) identified four adaptation strategies used by Austrian consumers to be able to evaluate prices: (a) exact conversion, (b) no conversion at all, (c) learning of

individual prices mainly of frequently bought goods, which served as points of reference for evaluating other prices and (d) learning of the conversion values of specific markers (e.g. EUR 5.00 equals about ATS 70.00 and ATS 100.00 is about EUR 7.00) to make rough estimates. Even though conversion is the most accurate of all strategies mentioned, it will take quite a bit longer to get used to the euro. Data collected for Austria (Kirchler and Fessel GFK, 2002) and Ireland (Ranyard, Burgoyne, Saldanha and Routh, 2003) show that people were likely to use exact conversion mainly for expensive products (Kühberger and Keul, 2003; Meier-Pesti and Kirchler, 2003). Further results for Austria illustrate that the frequency of exactly converting also prices of goods purchased on a daily basis was increasing with advancing age and in the lower income and education classes (Meier-Pesti and Kirchler, 2003). For convenience goods, Austrian consumers mostly used individual reference prices or benchmarks (see also Lemaire and Lecacheur, 2001). In Germany, the majority of consumers formed their price judgments relatively early, regardless of external anchors. This may suggest that either the certainty in dealing with the euro increased markedly already few months after its introduction or that the simple conversion rate of the Deutsche mark against the euro accelerated the learning process (Mussweiler and Englich, 2004). In an annual survey of the general status of adjustment to the euro the European Commission (2005) concluded for all EMU states that in autumn 2005 the adjustment process had still not been fully completed (e.g. Marques and Dehaene, 2004; Strazzari, Nori, Bensi and Giusberti, 2005). Well over one third of the euro zone population still convert less frequently bought, expensive products into their original currency. In addition to the difficulties involved in the changeover to the new currency, frequent – albeit slight – price changes were recorded when euro cash was introduced (Baumgartner, Glatzer, Rumler and Stiglbauer, 2005). In particular at the beginning of 2002, when the uncertainty and the difficulties of adapting to the euro were greatest, prices were changed frequently. Moreover, psychological prices (i.e. prices ending with 00, 50, 90 or 99) disappeared during the time of the euro cash changeover; about one year later psychological prices were back again (el-Sehity, Hölzl and Kirchler, 2005). Such a situation of uncertainty, caution and a considerable degree of distrust may easily lead to price changes being perceived as price increases rather than as price reductions. In fact, Stix (in this volume) also reports that most of the goods contained in the micro and mini baskets became more expensive while only few became slightly cheaper. According to Brachinger (2005a, 2005b), it is not surprising that a general perception of price increases developed. Brachinger criticizes that the basket of goods used by the statistical authorities differs significantly from a consumer's daily purchase, i.e. the psychological basket. Consumers do not perceive price changes as actual price changes of goods in the official basket but attach greater weight to price fluctuations of goods they buy more frequently than of goods they buy less frequently. Furthermore, price increases are perceived more powerfully than price

reductions. Regardless whether Brachinger's formula suggested for calculating perceived inflation is met with approval or not, it is no doubt relevant to consider that greater weight is placed on frequently bought goods and – in line with the findings of *Prospect Theory* (Kahneman and Tversky, 1979) – that losses are perceived more strongly than gains. If price increases were perceived to have been caused mainly by price changes in frequently bought goods and if the majority of goods in the micro and mini baskets became more expensive and only few products became cheaper, this will partly explain the "bias of the euro toward the Teuro" (e.g. Fischer, Katzer and Kiell, 2002).

Dealing with the new currency essentially depends on the understanding of the nominal euro values, which can be derived from two different sources. On the one hand, euro amounts can be evaluated on the basis of an interaction of nominal and real representations, which leads to a bias toward nominal evaluation (Shafir, Diamond and Tversky, 1997). This bias is influenced, *inter alia*, by the salience of nominal values as well as simple and careful mental calculation processes and is referred to as money illusion (Fisher, 1928; Patinkin, 1965). In the context of the influence of the respective former currencies and conversion factors on the perception of euro amounts also the term "euro illusion" was coined (Burgoyne, Routh and Ellis, 1999; Gamble, Gärling, Västfjäll and Marell, 2003). On the other hand, the evaluation of euro amounts can be influenced by specific other values, such as the price one remembers in the former currency or random values. This influence of specific external values on the perception of euro amounts is referred to as anchoring effect (Tversky and Kahneman, 1974). Anchoring effects are of a mere cognitive nature and may also lead to euro illusion. Euro illusion may be also driven by motivation (Gamble, Gärling, Charlton and Ranyard, 2002) and may occur if no or only insufficiently salient anchors are available. With the introduction of the euro, the nominal values on banknotes, salary slips and price tags fell in all EMU Member States, except for Ireland. The resulting lower nominal values (in most EMU Member States) may give rise to euro illusion and also prompt higher spending, since low nominal values lead to prices being perceived as low (Ferrari and Lozza, 2005; Fischer et al., (2002); Jonas, Greitemeyer, Frey and Schulz-Hardt, (2002); van Raaij and van Rijen, (2003)). Euro illusion may facilitate spending and, eventually, the available money has been spent faster, creating the illusion that there is no longer enough money. Moreover, van Raaij and van Rijen (2003) presume that due to euro illusion the difference between cheap and expensive products seems smaller and, therefore, the more expensive product is chosen more easily. Gamble et al. (2003) found evidence for this phenomenon. Both apparently lower euro amounts and seemingly minor price differences between individual products may lead to a total of higher expenses. The fact that there is less money left at the end of the month is, however, not attributed to one's own spending habits but is externalized and blamed on the euro (van Raaij and van Rijen, 2003).

Jonas et al. (2002) had prices of various goods estimated in Deutsche mark and euro prior to the introduction of the euro and found that the price estimates in euro were higher. The authors attributed this result to the fact that the nominally higher amounts in Deutsche mark acted as anchor. Accordingly, in Germany price judgments in euro are modeled on the nominally higher but familiar prices in Deutsche mark, which is reflected in an upward bias of the euro prices.

Finally, perceived inflation may result from the influence of expectations on perception. In almost all Member States, the euro was expected to lead to price increases; this expectation was confirmed by most people through their own perceptions (e.g. el-Sehity and Kirchner, 2003; Greitemeyer, Schulz-Hardt, Traut-Mattausch and Frey, 2002; Traut-Mattausch, Schulz-Hardt, Greitemeyer and Frey, 2004; Kamleitner, Kirchner and Hofmann, 2004; Hofmann, Kamleitner, Kirchner, and Schulz-Hardt, in print; Ranyard et al., 2003). If consumers do not convert exactly, susceptibility to distortions in perceiving price increases will be additionally heightened. In 2002, for example, 60% of the Austrians who were still converting only rarely expected prices to rise at least slightly in the wake of the currency changeover (Kirchner and Fessel GfK, 2002). In addition, Fischer et al. (2002) showed that expected inflation varies between different product groups. Especially “perceptible” products, which Fischer et al. consider to be, for example, eating out or groceries, are presumed to be subject to price increases. In connection with the “Teuro” expectation also seen in Germany, Traut-Mattausch et al. (2004) showed in several studies that price increases were perceived even if prices in Deutsche mark and in euro were compared simultaneously and directly. The researchers focused on one field where particularly large price rises were presumed and showed the study participants menus of an Italian restaurant first with prices listed in Deutsche mark and then in euro. The participants were asked to choose dishes from both menus and eventually estimate in percent the differences between the two price lists. Strikingly, in all experimental conditions the euro prices were sometimes perceived to be higher or at least unchanged compared with former prices in Deutsche mark, even when the prices had actually been reduced by 15%. Furthermore, it was surprising that price increases were also misperceived when the study participants were asked to compare the prices of all products separately. The authors attribute these persistent distortions in perception to a phenomenon that is in accordance with the hypothesis theory of social perception (Bruner and Postman, 1949), i.e. “selective error correction”, which describes the expectation-induced selective error detection in calculation processes. Calculation errors supporting one’s own hypothesis or expectation are more likely to be overlooked than those contradicting expectation. Price increases, despite being objectively verifiable, were generally perceived in a replication for Austria as well. Kamleitner et al. (2004) and Hofmann et al. (in print) showed that even a price reduction of 15% was perceived as an average price increase of 1.7%. In the same fashion, unchanged prices were also significantly overestimated and only with price

increases of 15% was the actual change observed. The influence of expectations and the existence of distortions in perception were also demonstrated for salaries and wages. Contrary to the prices, salaries and wages tended to be perceived as constant and actual changes were underestimated.

In conclusion, there seem to be several causes for the divergence between perceived inflation and actual inflation, as described by Stix (in this volume). The author summarizes possible causes in a remarkably clear fashion and puts forward convincing arguments. One aspect of concern/point of criticism may be that it is debatable to directly compare psychologically substantiated “formulas” for calculating perceived inflation – which in themselves are not unproblematic – and actually measured indices. It is also considered tricky to question consumers directly for prices, inflation rates and other economic indices. Not even the family members who do the daily shopping are usually entirely familiar with the prices of the goods (Gabor and Granger, 1961). Finally, it is questionable to which periods persons relate estimated inflation rates and to what extent time leads to distorted perceptions. Kemp and Willetts (1996), for example, showed that inflation rates tend to be overestimated by far for the more recent past, while subjective estimates for longer periods lead to a gross underestimation of inflation rates.

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