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# Archival data of financial analysts' earnings forecasts in the euro zone: Problems with euro conversions

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ABSTRACT

In multi-country studies, researchers frequently extract data in a single currency rather than in native currencies. This approach can be misleading for financial analysts' forecasts in the euro zone when researchers are using the IBES database. We suspect that forecasts of earnings before the birth of the euro on January 1, 1999 are kept in national currencies, although they are supposed to be displayed in euros, which can severely distort results concerning earnings forecast accuracy. We propose a simple procedure for checking for the existence of this error, as well as a quick solution to overcome it.



## 1. Introduction

Economics scholars routinely extract data from database provider interfaces, such as Datastream, Bloomberg or Thomson Reuters. These interfaces always propose extracting monetary data in native currencies or in certain specified currencies. It seems that data from the IBES database concerning security analysts' earnings forecasts face a problem linked to the formation of the European monetary union.

On Jan. 1, 1999, national currencies of countries included in the European Monetary Union were merged according to specified exchanged rates. All bank money and deposits were converted to euros. When extracting archival data today in euros, monetary amounts from before 1999 are converted to euros.

By focusing on the accuracy of analysts' forecasts, researchers compute the "forecast error" as the difference between forecasted earnings and realized earnings. Because these forecasts are considered to be a proxy for market expectations, there is a vast amount of relevant literature (see e.g., Ramnath et al., 2008). In particular, analysts' forecasts are of interest to firms (Siougle et al., 2014) and investors (Arjoon et al., 2016), and remain the best forecasts available (Gavious and Parmet 2010).

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In the literature, analysts' forecasts data very often come from the international IBES database. We show that pre-euro forecast data in IBES are not correctly converted to euros. This leads to a large over-estimation of forecast errors for analysts in the euro zone before 1999. We want to alert researchers to this phenomenon and propose a simple way to detect this conversion error. We show that re-converted data can display much more consistent forecast errors that are comparable to forecast errors in the US, UK and Japan.

There is a large amount of literature scrutinizing earnings forecast errors, although mostly regarding US data. Still, numerous articles use IBES to analyse European countries and include the pre-euro period. To cite just a few, Hovakimian and Saenyasiri (2014) start in 1991 and include 11 of the 15 countries using the euro,[1] Basu et al. (1998) include three countries from the euro zone for the period of 1987–1994, Capstaff et al. (2001) include seven over the same period, and Barniv et al. (2010) include eight between 1993 and 2007. Moreover, Glaum et al. (2013) focus on Germany between 1997 and 2005, and whereas Guedj and Bouchaud (2005) do not detail which European Union countries they studied, it is unlikely that no euro-zone countries are included for the 1987–2004 period they cover. They show that forecasts are, on average, over-optimistic and that this effect is "particularly strong in the early 1990s and the internet bubble". Coën et al. (2009) include eight euro-zone countries between 1990 and 2006 and insists on the importance of country effects for forecast errors.[2]

These articles do not disclose the way in which they extracted the data (in native currencies, converted to USD or converted to euros), but in the cases where the data were converted, an over-estimation of forecast errors for euro-zone countries before 1999 is very likely. However, those articles provide neither explicit yearly analyses nor year dummies, and as a result, we cannot not be sure that they suffer from this conversion problem. Therefore, we warn researchers to check the conversion problem before conducting their studies about earnings forecasts.

This article also adds to the literature about misreported data, with a focus on IBES. Ljungqvist et al. (2009) compare data downloaded in different years and document a large number of ex-post changes about recommendation records. Cheong and Thomas (2011) describe several caveats in their Section 2.1 (e.g., one firm—Berkshire Hathaway—have per-share forecast errors higher than $400, with the next-highest forecast error in their sample is $11). Jegadeesh and Kim (2006, Section 5.1) also question the dates in which recommendations were released. Ertimur et al. (2011) remind us that analysts voluntarily provide information to IBES and show that what information they disclose depends on concerns about their reputations. Hoechle et al. (2015) scrutinize time stamps and show that earnings or recommendations dates are often delayed by two to four trading days.

The structure of the remaining parts of the paper is as follows. Section 2 investigates the impact of the conversion problem on the related literature. We then present our data and methodology in Section 3. In Section 4, we show that the original data display conspicuously large forecast errors for the euro-zone countries of our study. Section 5 presents our results for when earnings forecasts and stock prices are re-converted, and Section 6 presents our conclusion.

## 2. The impact on the related literature

To assess how financial literature can be impacted, take the following example. Suppose first that data are in a given national currency (e.g., French Francs). The analyst' forecast is $F = 3$, but the actual earnings are $E = 2.5$. We can compute the difference between the two, or the "unscaled" forecast error, as $FE = 0.50$, and the forecast error scaled by earnings ($FE/E = 20\%$). With stock price $P=15$, we compute the forecast error scaled by the price ($FE/P = 3.33\%$).

Now suppose that one extracts data in Euro currency, to compare pre- and post-euro periods. The same observation would appear as (with the FRF/EUR exchange rate, rounded numbers): $F = 0.46$, $E = 0.38$, $P = 2.29$, with which we compute $FE = 0.08$, $FE/E = 20\%$ and $FE/P = 3.33\%$.

Scaled measures of forecast errors are unchanged, and the unscaled measure (FE) is logically modified. However, this can be a problem if the database incorrectly displays the data in the national currency. For example, say the researcher asks for data in euros, and the forecast is displayed as "$F = 3$." It is supposed to be in euros, but it is actually in the national currency (3 French Francs). Then, without further examination, the unscaled measure of forecast error would be over-estimated (0.50 instead of 0.08). This would bias pre- and post-euro comparisons, along with cross-country comparisons. However, scaled measures remain unbiased.

However, suppose that the researcher takes the forecast $F$ from this flawed database and the earnings $E$ from another database which correctly converts the currencies. Then, even scaled measures are incorrect.[3] If the exchange rate of the national currency against one euro is above 1, forecast errors are over-estimated.[4]

This hypothetical example helps to assess the conditions under which an article could potentially be affected by the conversion problem:

[1] There were 11 countries in the euro zone at the birth of the euro in 1999 and 19 countries in 2015. We focus on 1999 because the European countries in our database (France, Holland and Belgium) adopted the euro from the start. However, our warning may also apply for countries that adopted the Euro later on.

[2] On the contrary, studies that include countries after they adopted the Euro are, in principle, not subject to the conversion problem.

[3] With $F = 3$ and $P = 15$ but $E = 0.38$, this would yield $FE = 2.62$, $FE/E = 687\%$ and $FE/P = 17.5\%$.

[4] It is the case of every country in the euro zone, expect Ireland (1999), Cyprus and Malta (2008) and Latvia (2014).