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Euro changeover and inflation in Lithuania

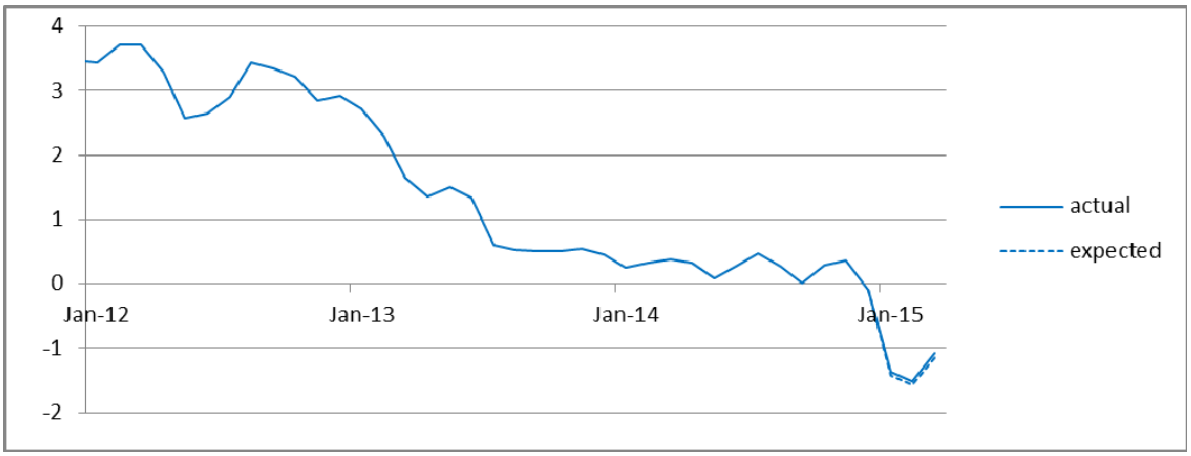
Lithuania joined the euro area on 1 January 2015. It is the 19th EU Member State using the single European currency, the euro.

This note assesses the euro changeover impact on inflation in Lithuania from January to March 2015, as estimated by Eurostat on the basis of the Harmonised Indices of Consumer Prices (HICP).

Eurostat estimates that the month-on-month rate of change of the Lithuanian all-items HICP would have likely been between 0.04 and 0.11 percentage points (pp) lower in January 2015 had the euro changeover not taken place. Thus, rather than -1.27%, the monthly rate in January would have likely been between -1.38 % and -1.31%, had the euro changeover not taken place. This estimated effect on the monthly inflation rate for January 2015 appears to be the total (one-off) euro changeover impact during and immediately after the introduction of the euro, as in February and March the impacts were statistically not significant.

As in the cases of the euro changeover of other countries ([1]), Eurostat considers that the euro changeover effects in Lithuania have been perceivable but were not of a magnitude that could drive headline inflation.

Graph 1: Observed versus expected all-items HICP annual rate for Lithuania



Source: Eurostat

Table 1: Euro changeover impact on inflation

Month	Observed monthly rate, %	Expected monthly rate range (*), %	Euro changeover impact (*), pp	Significance
Oct-14	0.09	-	-	-
Nov-14	-0.06	-	-	-
Dec-14	-0.64	-	-	-
Jan-15	**-1.27**	**[-1.38 , -1.31]**	**[0.04 , 0.11]**	**Significant**
Feb-15	-0.15	[-0.23 , -0.09]	[-0.06 , 0.08]	Non-significant
Mar-15	0.82	[0.69 , 0.94]	[-0.12 , 0.13]	Non-significant

(*) See overleaf how the expected monthly rate and the impact were calculated.

([1]) First-wave changeover in 2002, of Slovenia in 2007, Cyprus and Malta in 2008, Slovakia in 2009, Estonia in 2011 and Latvia in 2014.

ESTIMATING THE IMPACT OF THE EURO CHANGEOVER

It is not possible to estimate precisely the inflation level if the euro changeover in Lithuania had not taken place, since isolating the effect from the realised inflation is not a straightforward exercise. Several causes for prices changes are interacting and some can overlap with genuine euro changeover effects; some changeover effect factors may amplify each other or cancel each other out. However, it is possible to determine if there is empirical evidence for a price level change that could not be plausibly attributed to any other factor than the euro changeover

Eurostat estimated the euro changeover impact by producing, for each of the first three months after the introduction of the euro, a forecast using HICP past data and other relevant auxiliary information of the Lithuanian HICP sub-indices.

The forecasting model produced an 'expected price development' for each HICP sub-index as a range, which was compared to the results from the observed indices. If the observed monthly rate of change fell inside the prediction interval, then the price change was considered to have been as expected. Sub-indices whose price changes fell outside the range were listed for further investigation to find out what could have caused higher than predicted price changes.

The list of sub-indices with unusual price changes was presented and analysed in a meeting at Statistics Lithuania in September 2015. In the meeting Statistics Lithuania experts provided information on the identified sub-indices and provided possible reasons for the price changes.

In some cases of the sub-indices on that list, a plausible explanation – other than euro changeover – for the higher than expected price changes could be identified. The remaining sub-indices were attributed to a likely euro changeover impact list. The final list of concerned sub-indices included nine 4-digit COICOPS, in particular 'COICOP1112 – Canteens', 'COICOP041 – Actual rentals for housing', 'COICOP1211 – Hairdressing saloons and personal grooming establishments', 'COICOP0432 – Services for the maintenance and repair of the dwelling'.

The total euro changeover impact on the all-items HICP of Lithuania was calculated as the difference between the observed rate and the minimum and maximum expected monthly rates, which are the boundaries of the range (see column 4 of table 1). The expected monthly rate range for the all-items HICP was derived using observed values for all other sub-indices except for those that were identified having a likely euro impact; in the case of the latter the forecast result was used instead.

When the difference between the observed rate and expected rate range did not contain zero the impact is considered statistically significant; as Table 1 shows this is the case only for the month of January.

Eurostat's assessment is that in Lithuania the total (one-off) impact of the changeover on consumer price inflation is likely to be between 0.04 and 0.11 percentage points in January 2015. Non-significant differences between the actual and the expected monthly rates were observed in the two following months.