Impact of the CNB's exchange rate commitment: pass-through to inflation[1]

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Abstract

Since 7 November 2013, the Czech National Bank has kept the exchange rate of the Czech koruna above 27 korunas per euro. As the key monetary policy interest rate had already fallen to zero, an exchange rate commitment or "floor" was introduced with the aim of preventing deflation in the Czech economy and restoring inflation to its target rate.

This note presents a simplified analysis of the pass-through of the CNB's exchange rate commitment to inflation and of why the subsequent turnouts of actual inflation need not have matched the CNB's initial expectation. We will not, however, attempt to evaluate the appropriateness of the decision to make the commitment or of the specific exchange rate chosen by the CNB for its floor; such an evaluation would require a detailed comparison between the information and forecasts that the CNB had available in late 2013 and later actual developments.[3]

Keywords: Exchange rate pass-through, exchange rate commitment

JEL classification: F31, E58

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[3] For assessments along these lines, see the CNB's Inflation Reports and, more specifically, the regular sections on "Fulfilment of the inflation target".

1. The CNB's exchange rate commitment as a supplementary tool for reaching the inflation target

1.1 The CNB's motivation for the NER commitment

During 2012, domestic inflation gradually fell below the target level of 2%, for both external and domestic macroeconomic reasons. In response, the Bank Board of the Czech National Bank (CNB) decided to reduce the policy rate to technical zero (0.05%) and committed itself to keeping the rate at that level for an extended period of time, until inflation pressures were seen to increase significantly.

During 2013, newly produced forecasts gradually started to indicate that inflation might actually fall below zero for at least several quarters, with the implied threat of a deflationary spiral. For this reason, on 7 November 2013, the Bank Board decided to immediately initiate FX interventions, a step that it had communicated as a possibility throughout the year. The publicly announced aim was to weaken the exchange rate to at least CZK 27 per euro with a commitment to intervene without time or volume constraints to prevent the koruna from returning below this level (Lízal and Schwarz (2013), Franta et al (2014), Skorepa and Hampl (2014)). In mid-December the CNB for the first time commented specifically on the duration of the commitment, saying that the floor would last "at least until early 2015". Currently the CNB declares it "probable" that the commitment will be discontinued "around the end of 2016".

1.2 The mechanics and transmission channels of the commitment

A temporary use of the nominal exchange rate, once the interest rate has hit the zero lower bound, with the aim of escaping a deflationary trap and achieving the inflation target, is fully consistent with suggestions provided by the theory of inflation targeting (Svensson (2001, 2003)). The general idea is that:

(a) by depreciating the nominal exchange rate (NER), the real exchange rate (RER) depreciates too; and

(b) by not allowing the NER to revert to its previous values, at least for some time, the RER will revert to its previous values (assuming these values were near the equilibrium level) via the inflation differential instead.[4]

Therefore, the logic of the commitment, or NER "floor", was to induce a permanent change in the ratio of the price level in the Czech economy and in the euro area[5] – to induce a certain "price level wedge". Given various rigidities in how price levels tend to react to shocks such as this one, the wedge could be expected to take the form not of an instant jump in the price level ratio but rather a period of elevated values for the inflation differential: the difference between the Czech inflation and its euro area counterpart could be expected to be, for a certain period of time, higher than without the NER floor. The first pro-inflationary impulse would come via the direct exchange rate effect, while the second would emerge through

[4] Needless to say, if the equilibrium RER features a trend, then the actual RER will revert to the previous equilibrium value adjusted by an appreciation trend.

[5] A ratio of price levels in two economies is often called a "purchasing power parity (or PPP) exchange rate" to distinguish it from the market exchange rate (see, for example, Callen (2007)).

higher inflationary expectations which would reduce ex ante real interest rates (while the nominal rate would be still at the technical zero), generating higher domestic demand.

Generally speaking, the nominal exchange rate depreciation of the koruna vis-à-vis the euro can be expected, sooner or later, to manifest itself in domestic prices through several channels, which include, in particular:

(a) a higher price for imported goods for final and intermediate consumption;

(b) a higher price for domestically produced goods due to demand pressures stemming from the substitution of foreign imported goods by cheaper domestic alternatives;

(c) boosted koruna profits for exporting firms as the depreciation raises export prices in korunas.[6] Higher profits then create a room for exporters to raise wages for their employees; this creates an upward pressure on Czech wages generally, which squeezes non-exporting firms' profit margins and ultimately leads to pro-inflationary pressures; and

(d) expected future inflation due to all the above-mentioned reasons, reducing real ex ante interest rates and thus fuelling current domestic demand.

Whatever channels could be expected to be part of the transmission process, we need to keep in mind that the ultimate objective of the NER floor was nominal (to achieve the inflation target); any real economic processes set in motion by the measure were just side effects, whether welcome or not.

1.3 Calibration of the commitment

Various CNB analyses conducted shortly before the floor's introduction indicated that pushing the NER specifically to at least CZK 27 per euro would gradually generate an inflation differential which, assuming a certain trajectory of inflation in the euro area, would make Czech inflation overshoot the CNB's inflation target of 2% in 2015; this would then allow the CNB to raise interest rates and thus escape from the zero lower bound problem.

The impulse to an inflation differential generated by such a one-off NER depreciation was, in itself, bound to disappear over time. But the CNB expected that in the meantime new pro-inflationary demand pressures would emerge on the back of a domestic as well as foreign economic recovery. The CNB's monetary policy would, sooner or later, be able to return back to the standard world of non-zero interest rates set at a level that would keep inflation near the inflation target.

[6] If export prices were to rise less than in step with the extent of the NER depreciation, then foreign demand for Czech exports and thus export volumes might increase. Gopinath (2015), however, concludes that prices in international trade between most countries of the world are set (and sticky) mostly in US dollars or euros. Be this as it may, the possibility that the introduction of the CNB's NER floor led to higher koruna profits for Czech exporters is consistent with the observed and sizeable year-on-year rise in Czech corporate profits in 2014.

1.4 Assessing the commitment

While the Czech National Bank's NER floor manoeuvre is still in progress, it can be assessed from at least three points of view: implementation, communication and macroeconomic impacts. In terms of implementation, the commitment has been a success: the exchange rate reached the CZK 27 level within two days and has remained at or above that level ever since.

Especially in the first few months after the NER floor was introduced, the decision faced intense criticism from the public, the media and even from some economic analysts. In the light of this backlash, the CNB has intensified its efforts, as described in more detail in Franta et al (2014), to explain why it introduced the NER floor and what effects it expects the floor to have.

As regards actual macroeconomic effects, the jury is still out; the present note is an attempt to shine some light in this particular direction.

2. Evolution of actual exchange rate since introduction of the floor

The NER floor was announced and immediately applied on 7 November 2013. The actual spot exchange rate (see Graph 1) was 25.8 on the previous day; the average for the previous month as well as for the previous 12 months was 25.7. The jump to 27, most of which took place within a few hours on the very first day, thus represented a weakening of some 4.7% on a day-on-day basis and of slightly more than 5% relative to the previous 12 months.

The floor for the nominal CZK/EUR exchange rate and the actual exchange rate — Graph 1

Source: CNB.

In its calculations, the CNB had assumed that after the floor's introduction the actual NER would hover at or just slightly above the floor level throughout the originally declared minimum period of commitment, that is, until the end of 2014. In

reality, the NER quickly shifted to noticeably weaker levels: the average level for 12 months from 14 November 2013 was almost exactly 27.5, implying a year-on-year depreciation of 7%.

During 2015, however, the nominal exchange rate gradually moved back to the floor level of 27. We can thus say that, compared with what the CNB had planned for the initially considered one year of commitment, the NER has actually had a stronger effect towards inducing the build-up of an inflation wedge.Nevertheless, to keep matters simple, in what follows we will assume that the actual NER has been at 27 ever since the floor was introduced.

3. Observed price level wedge: CPI

From November 2013 to October 2015, that is, over the first 24 months of the existence of the NER floor, the consumer price index (CPI) increased cumulatively by 1.1% in the Czech Republic while it rose 0.6% in the euro area.[7] From this perspective, the actual price level wedge over that time period stood at half a percentage point; during the whole of 2015, this difference oscillated between 0.4 pp and 0.8 pp.[8]

How does this figure compare with the CNB's idea of the effect of a permanent weakening of the CZK/EUR exchange rate by 5%, ceteris paribus? Based on the estimated import content of various components of the consumer basket, CNB (2014) puts this effect at about 1.6 pp or one third of the original NER shock (much less than 5 pp or 100% of the shock because of the low import content of some parts of the CPI such as most services). This incompleteness of the NER pass-through into consumer prices is consistent with or perhaps somewhat higher than the estimates reported by Babecka-Kucharcukova (2009) for the Czech economy and those that Goldberg and Campa (2010) obtained for some other small open economies.[9]

By their construction, these estimates already encompass the important fact that the Czech economy is a very open one where many exporters are, at the same time, importers, so that they have significant "natural hedging" against exchange rate movements.[10]

[7] Throughout this note, unless stated otherwise, figures attributed to the euro area will actually be averages of figures for 14 euro area economies weighted by Czech exports to those economies. These "effective euro area" figures are more relevant for our discussion, which is focused on the mutual relationships specifically between the economies of the euro area and the Czech Republic.

[8] An alternative way to assess the intensity of the NER pass-through is to use HICP (rather than national CPI) data. For the whole HICP, the cumulative inflation differential over the first two years of the NER floor comes out at 0.6 pp. Focusing on the HICP segment labelled by Eurostat as "Goods" – which can be viewed as a proxy for tradable prices – the differential is 1.5 pp, confirming the intuition that the pass-through is stronger for the tradable parts of the consumer basket.

[9] In fact, Goldberg and Campa (2010)'s figures describe the NER pass-through over four quarters. Figures for two-year periods can be expected to be higher, especially if monetary policy does not try to counteract the exchange rate movement. In the long run and assuming a fixed nominal exchange rate, the pass-through should be complete.

[10] The fact that economies get more and more involved in global value chains has recently been reiterated by Ahmed et al (2015). The estimates reflect implicitly also the observation (Forbes (2015)) that the extent of exchange rate pass-through depends on the source of the exchange rate shock.

One possibility is to start, for simplicity, with an expositional assumption that the CNB's NER floor was the only factor affecting the Czech price level differently than the euro area's – such that without the floor, the two price levels would evolve in step. Under this assumption, it becomes sensible to directly compare the price level wedge of 0.5 pp, as actually observed at the end of the first two years of the NER floor, with the 1.6 pp wedge that the CNB would expect, and to conclude that the former is just one third or so of the latter.

Does this mean that the exchange rate pass-through in the Czech economy is much weaker than the CNB expected, and that the CNB's NER commitment is not very effective? Not necessarily. We need to realise that, on top of the NER floor, the ratio of price levels may have been hit by other shocks with asymmetric effects – that is, the above-mentioned expositional assumption is grossly incorrect.

3.1 Factors in the Czech economy

Generally speaking, two types of asymmetric shock that are particularly relevant to the ratio of CPI levels are changes in administered prices or indirect taxes – to the extent, of course, that these changes take place "on one side of the border" only.[11]

As for administered prices on the Czech side, we can mention the abolition of some health care fees in January 2014 and of additional health care fees in January 2015. The cumulative contribution to total price level changes over 2014 and 2015 was about –0.3pp (CNB (2015)). An even deeper negative contribution (of about –0.5 pp) came from a fall in the regulated price of electricity at the start of 2014.

As for changes in indirect taxes, a reduction of the Czech VAT rate for selected products from January 2015 had some disinflationary impact on the CPI relative to the euro area. On the other hand, in 2014 the Czech government made two increases to the excise duty on tobacco products. The overall impact of all these measures in the area of indirect taxes was some 0.2 pp, thus offsetting about one quarter of the disinflationary impact of the above-described domestic shocks to administered prices.

3.2 Factors in the euro area

Moving now to the other side of the border, we can find certain local pro-inflationary pressures, that is, pressures which reduce the observed price level wedge and therefore work in the opposite direction to the CNB's ER floor.

Focusing specifically on Germany as the Czech economy's dominant trading partner, in 2014 the German CPI was likely to have still been digesting the repercussions of a hefty increase in the surcharge on retail electricity prices in line with the Renewable Energies Act of 2013 (Destatis (2014)).

As regards indirect taxes, their contribution to the movement of the CPI level can be estimated by comparing Eurostat data on standard HICP versus its data on HICP with constant rates of indirect taxes. This comparison reveals that, while indirect taxes

[11] Asymmetries may emerge also simply due to different weights of individual COICOP categories – such as food or fuels – in the national CPI consumer baskets. The differential importance of various items for the two economies will be tackled in more detail in the following section devoted to PPI developments.

grew in the euro area over 2014 and 2015, their contribution was roughly half of that in the Czech economy.

3.3 PPI more suitable than CPI

Clearly, one might come up with many such larger or smaller non-fundamental asymmetric shocks to the ratio of CPI levels that have emerged since the NER floor was introduced, but which had not been anticipated by the CNB when it selected the floor level. Disentangling the direct and especially the indirect effects of these shocks in each of the two economies separately and then arriving at a ratio of CPI levels net of these shocks would be a daunting task.

Given that these shocks are likely to occur especially in administered prices and indirect taxes, it seems advisable to shift our focus from consumer prices to producer prices. First, at the level of producer prices there tends to be less price regulation (with exceptions such as producer prices for some kinds of energy). Second, changes in indirect taxes are likely to have a weaker impact as they formally apply to consumer prices: for instance, if the VAT rate for books is increased, it will have an impact on wholesale prices only if publishers decide to use this opportunity and lower or raise their margins by raising their prices more or less than proportionately.

4. Observed price level wedge: PPI

In the previous section, we pointed out that the wedge effect of the CNB's NER floor on the price level ratio is hard to determine for the CPI figures as the observed – rather weak – result may have been contaminated by various other asymmetric shocks to one or the other of the two local CPI levels being compared.

Looking at the producer price index (PPI), from November 2013 to October 2015 it fell cumulatively by 2% in the Czech Republic while it fell by 2.8% in the euro area. The actual price level wedge over that time period in terms of producer prices thus reached 0.8 pp. This figure is somewhat higher than that for consumer prices. But it still represents just about one half of what the CNB had expected. Also, the net pass-through of a given exchange rate shock to the PPI can, compared with the CPI, be expected in the current condition of the Czech economy to be significantly higher – by a factor of two or three (Babecka-Kucharcukova et al (2013)).

Even putting aside the potential – probably weak or temporary – effects of changes in administered prices or in indirect taxes, there may have been, besides the NER floor, still other shocks that affected (asymmetrically) producer prices.

4.1 Initial overvaluation of the Czech koruna

At the moment of introduction of the CNB's NER floor, the real exchange rate of the koruna to the euro may have been overvalued, that is, stronger than the equilibrium value.[12] If the koruna really was overvalued, one would expect a subsequent

[12] It could just as well have been weaker; however, misalignment in this direction would not, obviously, attenuate the effect of the floor in the way that an overvalued real exchange rate did (as described in the main text).

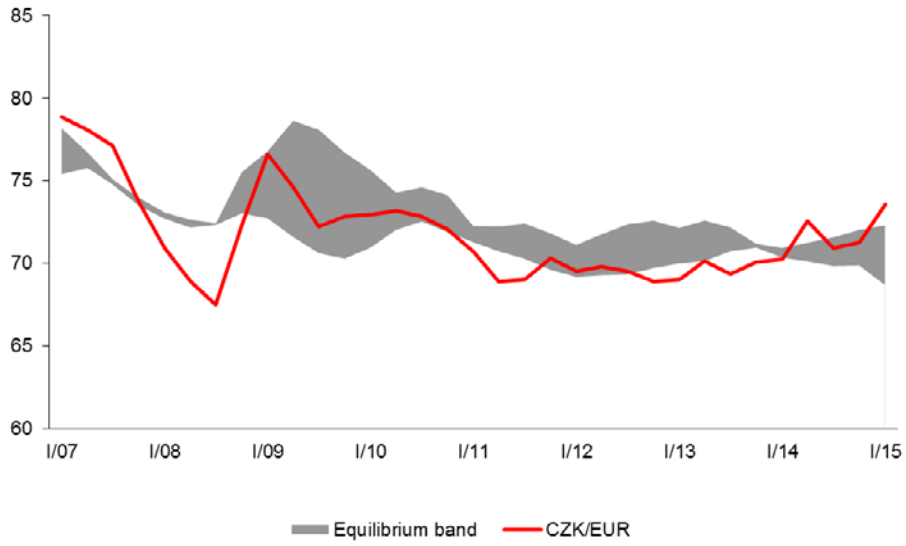
spontaneous movement of the RER back towards the equilibrium value – whether via a negative CZK-EUR inflation differential or via NER depreciation. But then at least a part of the depreciation brought about by the CNB's NER floor could be "used up" by this re-alignment and so the desired price level wedge effect of the NER floor would be attenuated.

Recent estimates published both by the CNB and by the IMF suggest that in late 2013 the RER indeed was overvalued. The estimates in CNB (2015) point to an overvaluation of around 1–3% on average in late 2013 (Graph 2). The estimate relies on the BEER (Behavioural Equilibrium Exchange Rate) and FEER (Fundamental Equilibrium Exchange Rate) concepts. The BEER approach takes into account a set of key variables affecting the long-run real exchange rate, as the productivity differential and inflows of foreign investment. The FEER identifies the real exchange rate consistent with an external balance, approximated by the current account, and an internal balance approximated by full employment.

CZK/EUR real equilibrium exchange rate

Q1 2000 = 100; CNB calculations

Graph 2



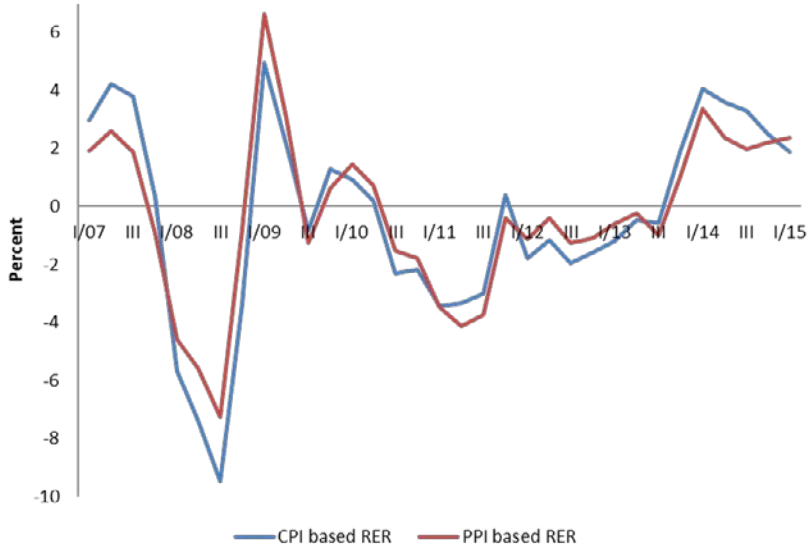
Note: Equilibrium estimates according to the BEER and FEER models deflated by the index of producer prices in manufacturing.

Source: CNB Inflation Report III/2015.

IMF (2014), building on the External Balance Methodology (IMF (2013)), finds the RER to be overvalued by about 5% in 2013. Finally, applying the HP filter to the RER suggests an overvaluation of about 1% in Q1–Q3 2013 (Graph 3).

Real exchange rate gaps – HP filter

Percent Graph 3



Note: A negative real exchange rate gap suggests over-appreciation.

Source: Authors' calculation.

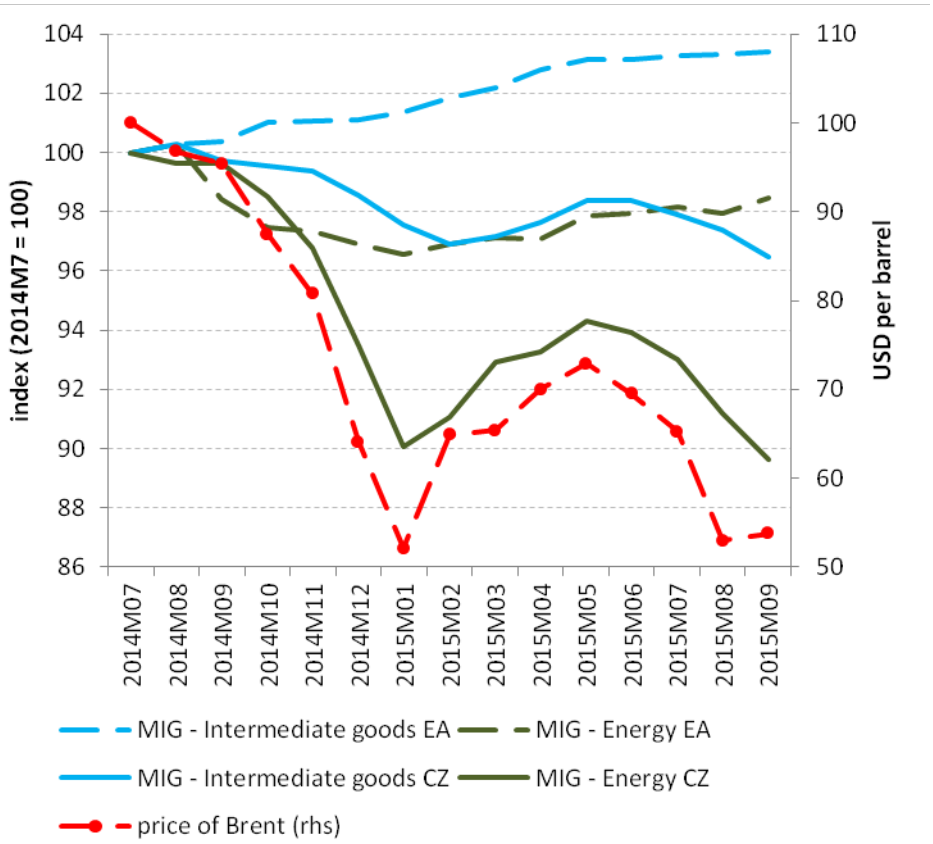
4.2 Fall in the world price of oil

As a shock able to provide at least a partial explanation for the disappointing size of the price level wedge, perhaps the most promising is the dramatic fall in the world price of oil between August 2014 and January 2015. By definition, the world price is (roughly) the price at which oil is bought by any importer, the price being set in the relevant currency – in the case of oil, this currency is the US dollar. So any given change in this price is, in itself, a *symmetrical* shock for all economies; for various reasons, the implications for different economies can, however, be very different so that the ultimate result is an *asymmetrical* shock.

Graph 4 focuses on what Eurostat calls the main industrial groupings (MIG) "Energy" and "Intermediate goods" – that is, those two parts of industrial producer prices which are most likely to react fairly quickly and strongly to oil price developments. As the graph indicates, the fall in the price of oil in the second half of 2014 does seem to have had an asymmetric impact: in late 2014 a sizeable gap between producer prices in the euro area and the Czech economy opened and kept growing in both industrial groupings.

Producer prices in the areas of energy and intermediate goods in the euro area and the Czech Republic

Graph 4



Sources: Eurostat, US Energy Information Administration.

4.3 Downward price pressures in the manufacture of food products

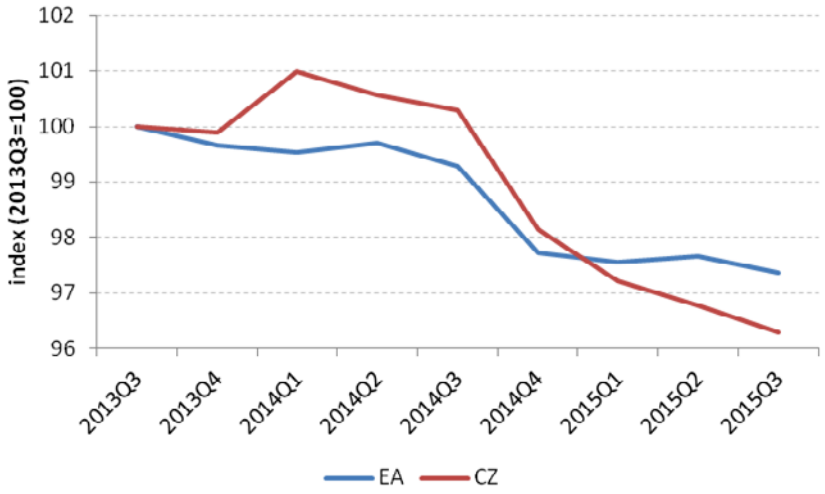
After sanctions were imposed on Russia in the spring of 2014 in response to developments in Crimea, Russia retaliated with, among other measures, a ban on food imports to Russia from Australia, Canada, the EU, Norway and the United States. This ban is likely to have caused an increase in the supply of food products in many economies in the EU (and elsewhere), including the Czech Republic.

As Graph 5 suggests, however, while prices in the NACE branch "Manufacture of food products and beverages" have fallen since the third quarter of 2013 in both economies under study, the fall in the level of Czech prices during 2014 was less pronounced than that in their euro area counterparts. This need not be a surprise, given that the share of fruit and vegetables exports to Russia in the GDP is actually about twice as high in the euro area than in the Czech Republic.

Czech food prices started to fall faster than those in the euro area only towards the end of 2014 and in 2015. This indicates that perhaps the generally good European harvest in 2014 was particularly good in the Czech Republic (see eg USDA FAS (2015)) or there may have been a particularly strong reaction of Czech producer prices to the abolition of the EU milk quota at the end of March 2015.

Producer prices in "Manufacture of food products and beverages" in the euro area and in the Czech Republic

Graph 5



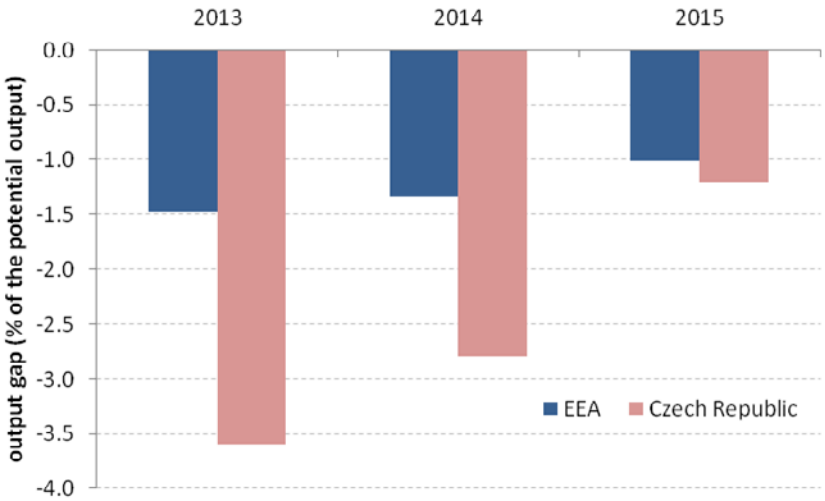
Source: Eurostat.

4.4 Cyclical position of the economy

Another cross-border asymmetry between factors of price evolution in the economy of the Czech Republic and those of the euro area, this time from the demand side, would arise if the time period during which the CNB was applying its NER floor were characterised by the different cyclical positions of the two economies. Graph 6 shows that, while in 2014 and 2015 both economies suffered a negative output gap, the Czech recession was markedly deeper. Needless to say, the output gap recorded in the Czech economy in 2014 and even more in 2015 is likely to have been already influenced – via the transmission mechanisms described above – by the introduction of the CNB's NER floor in November 2013.

Estimated output gap

Graph 6



Source: IMF, *World Economic Outlook* database.

5. Pass-through dynamics

In Section 3 above, it was stated that the CNB's ex ante estimate of the price level wedge generated ceteris paribus by the NER floor, if applied permanently, was 1.6 pp. This estimate was based on the analysis of nominal flows among economic sectors, the structure of value added and the components of final use during a single year (accessible in the input-output tables of the Czech Statistical office).[13] Estimates based on the CNB's structural forecasting model were even slightly higher. Even if there were no asymmetric shocks pushing on the ratio of Czech and euro area price levels in the opposite direction than the direction intended by the floor the currently observed wedge might also be smaller than 1.6 pp for the simple reason that two years have not been enough for the whole effect to play out.

More specifically, various rigidities within the Czech economy which cause a delay before the price signal from the exchange rate reaches domestic price indices may drag on the process more severely than the CNB estimated.[14] But there seems to be little reason for these rigidities to have grown stronger in recent years compared to the previous time period on which the CNB based its assessment of the likely speed of the pass-through.

A related possibility is that, at the first stage, exporting companies' owners may have chosen not to offer wage rises to their workers, so that one of the transmission channels may have been weakened. Instead, the owners may have decided to cash out the higher profits via dividend payouts (a large part flowing abroad, given the high share of foreign ownership in the Czech economy) or to raise investment (Levy-Yeyati and Sturzenegger (2007)).

6. Expectations

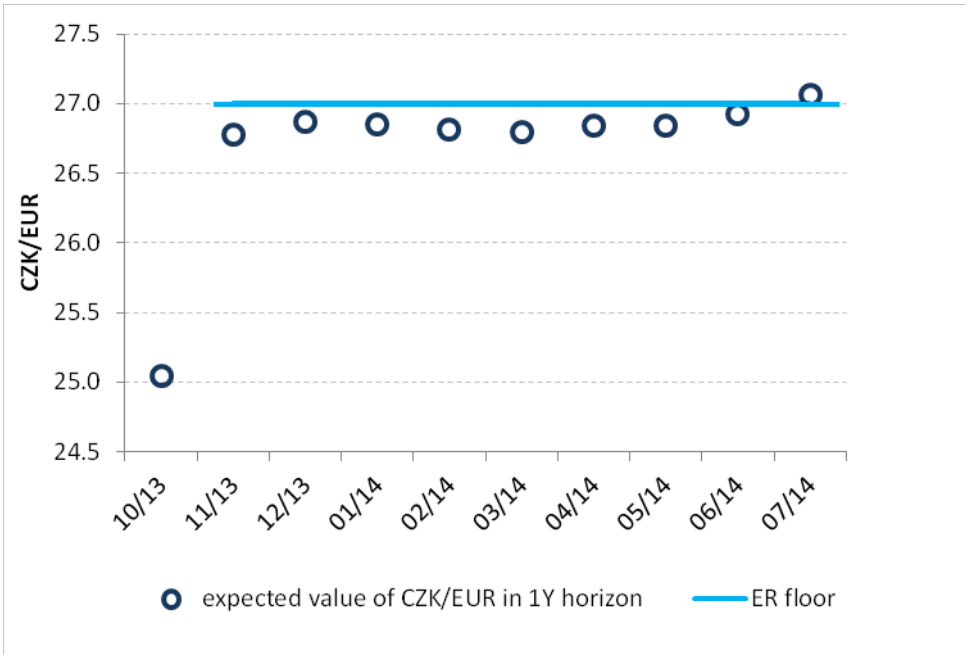
A different possibility is that the pass-through has been hindered by firms' doubts about the actual duration of the floor. Imagine a typical Czech exporting company, as mentioned above in Section 1.2, when considering the transmission channels for the NER floor. Regarding assumptions about the future, the company had two basic options. First, it could conclude that the exchange rate would stay near 27 for a "fairly long" period of time, allowing the company – in line with the logic of the floor – to raise output prices or to expand productive capacities and to attract more workers by raising wages. The exporter's second option was to expect the exchange rate to revert to much stronger levels sooner rather than later, in which case making new investments and raising wages would not be wise.

Graph 7 shows the extent to which Czech financial sector analysts participating in a regular CNB survey changed their expectations of the exchange rate immediately before and several months after the introduction of the floor. The expected level of the exchange rate on a one-year horizon did rise markedly in November 2013 relative to the level expected one month earlier. But the one-year exchange rate expectation actually reached the floor level only in July 2014.

[13] For more details see CNB (2014).

[14] See, for example, CNB (2011).

Analysts' exchange rate expectations versus the CNB's NER floor Graph 7



Source: CNB.

The first time that the CNB commented on a specific time horizon for the potential discontinuation of the commitment was in mid-December 2013, when it was announced that the floor would be in place "at least until early 2015". Given this, the message of Graph 7 is that, at least in the first one or two months after November 2013 (in which the actual exchange rate had already reached levels well above 27 korunas per euro), the analytical community may have had certain doubts about whether the CNB would (be able to) honour the commitment up to the stated horizon of early 2015. Since the initial horizon-specifying statement made in December 2013, the declared horizon has been changed several times. At the end of July 2014, it was amended to "not before 2016". At the beginning of February 2015, it was further updated to "not before the second half of 2016". In November 2015, it was reformulated to "probably around the end of 2016". So the residual minimum duration of the commitment has never been longer than about six quarters. So one possibility is that at least some companies may have understood "six quarters (or more)" as not "fairly long" enough in the above sense to make critical changes such as boosting production or raising wages.

The same CNB survey showed that the floor's introduction in November 2013 caused no perceptible change in analysts' expectations regarding wages and GDP growth GDP for 2014.[15] This lack of impact indicates that the private sector initially doubted that the floor would endure for a "fairly long" enough time to produce the macroeconomic effects intended by the CNB.

If typical Czech exporters shared the analysts' views, it may well have continued to doubt for some months after November 2013 that the floor's profit-enhancing

[15] The time series of these expectations can be accessed at www.cnb.cz/en/financial_markets/inflation_expectations_ft/.

effects would persist at the same level as in these first few months. Of course, the same kind of initial uncertainty may have, at least temporarily, inhibited the pass-through via importers' behaviour. The reluctance of importers to raise their output prices for the domestic market may have been amplified by a fear of first-mover disadvantage, at least in competitive sectors.

6. Summary

In November 2013, the CNB introduced an exchange rate commitment with the aim of driving a positive wedge between the future path of the Czech price level and that of the euro area price level. We find that the actual price level wedge, that is, the actual change in the ratio of the two price levels, after two years of the commitment to be about 0.5 and 0.8 percentage points for CPI and PPI, respectively. We explain that the PPI might be a more suitable price index when assessing the pass-through than the CPI since the latter tends to suffer more from often non-fundamental shocks in indirect tax changes and regulated prices. But even the 0.8 pp value for the PPI is only about half of the net long-term effect that was forecast by the CNB. In addition, existing empirical estimates for the Czech economy indicate that, for the PPI, the pass-through should be up to three times stronger than for the CPI.

We then identify – albeit very briefly and often just qualitatively – some of the major factors that may have worked against the intended effect of the NER floor, ie that may have pushed the Czech price level lower than that of the euro area. The paper suggests that several types of factor underlie the lower than expected net pass-through of the NER floor. First, various ex post estimates point to a real exchange rate overvaluation at the end of 2013. In this case, at least part of the nominal exchange rate depreciation generated by the commitment would simply offset the initial overvaluation, reducing the effect on the price level wedge.

Second, some shocks might have had asymmetrical effects in the Czech Republic and the euro area, such as the drop of world oil prices in late 2014 along with a deeper recession in the Czech Republic than in the euro area in 2014. Using energy and intermediate goods in the PPI sub-index, the paper shows that the prices of these items fell more sharply in the Czech Republic than in the euro area, probably due to different structural characteristics. As a result, the world oil price shock and its asymmetric effects have partially offset the price level wedge that the CNB's exchange rate commitment was intended to generate. Similar effects may have come from foodstuffs. A deeper recession and thus higher disinflationary pressures in the Czech Republic have likely also mitigated the actual size of the wedge.

Finally, the pass-through of the commitment may have been weakened if the market had expected the exchange rate commitment would not persist.

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