



REPUBLIC OF BELARUS

SELECTED ISSUES

May 2015

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April 27, 2015

Approved By
European Department

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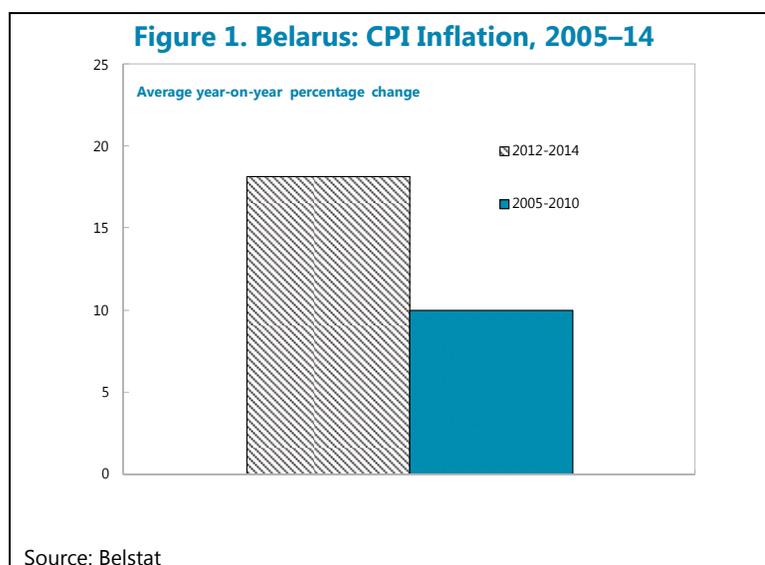
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INFLATION IN BELARUS¹

Inflation in Belarus has been persistently in double-digits over the past three years and remains a key concern for the authorities. This note examines the causes of the high inflation, estimating specifically the contribution of two factors: (i) exchange rate pass-through and (ii) administrative price increases. Residual inflation is used as a gauge for inflation caused directly by demand pressures and inflation expectations. The note finds that administrative price increases are a key driver of inflation, even ahead of demand pressures which also explain a large share of inflation. While exchange rate pass-through is found to be high and fast, particularly for unregulated prices, its contribution to inflation has been comparatively modest in recent years owing to the stability of the exchange rate. Following the recent rubel devaluation, however, pressures through this channel are expected to pick up in 2015.

A. Introduction

1. Inflation has remained high after the high inflation episode in 2011. While average inflation was around 10 percent before the 2011 exchange rate crisis and inflation spike, in the three years since it has remained around 20 percent. A number of possible factors can be responsible for this rapid price growth. First, expansionary macroeconomic policies and a doubling of nominal wages have fueled domestic demand, putting pressure on consumer prices. Second, exchange rate depreciation has affected inflation via increase in prices of imported goods and raw materials, as well as through changes in expectations. Third, despite some limited progress on price liberalization in recent years, the impact of regulated price inflation—which is high and volatile—remains important. Finally, the high inflation environment likely perpetuates inflationary expectations, creating inflation inertia. This paper studies in detail the exchange rate channel and the importance of administrative prices.



The remaining inflation that is not explained by these two factors can be interpreted as a measure of the contribution of expansionary policies and inflation expectations.

¹ Prepared by Ksenia Koloskova (EUR), with contributions from Alina Kafarava (local economist, Minsk office).

B. Estimation of Exchange Rate Pass-through

This section studies exchange rate pass-through in Belarus using a structural VAR approach. The pass-through from the nominal effective exchange rate is relatively high and fast, being 0.4 after one year and 0.5 after two years for the sample 2001–14. Estimates based on the earlier part of the sample (2001–08) are considerably lower, indicating that pass-through has increased during and after the 2011 crisis. Pass-through is higher for unregulated prices—0.6 after one year—and close to zero for regulated prices during normal times.

Overview

2. Belarus' economy has a number of features that are typically associated with significant pass-through of exchange rate movements into prices. First, pass-through is higher in emerging markets compared to advanced economies (Calvo and Reinhart (2000), Bussière (2013)). Second, pass-through is higher in countries that don't target inflation compared to those that do (Taylor (2000), empirically confirmed for CIS countries by Petreski (2013)). Third, Belarus is a small open economy with a high share of imports in GDP, which also results in a tighter link between the exchange rate and prices (McCarthy (2007) shows a relationship between import share and pass-through)). Fourth, the degree of dollarization of the economy remains high, which is also associated with a high pass-through (IMF (2004)). In earlier Belarus-specific studies, Kruk (2011) and Horvath and Maino (2006) suggest that the high degree of openness and high degree of dollarization are the main factors responsible for high pass-through of exchange rate movements to prices in Belarus.

Methodology

3. The size and the speed of exchange rate pass-through for Belarus are estimated using a Vector Auto Regression (VAR). The methodology was developed by McCarthy (2007), and has also been applied to transition countries (Gueorguiev (2003), IMF (2004)) and low income economies (Moriyama (2008)). Since pass-through measures by how much prices adjust to changes in the exchange rate, an estimate for pass-through is derived using the impulse responses to a shock to the exchange rate. To identify a structural shock to the exchange rate a Cholesky factorization is used, which requires assumptions on how fast variables react to each other and therefore in which order they should be included in the VAR.

- The VAR includes the following variables (in order of inclusion): 1) commodity price index, 2) industrial production, 3) wages, 4) broad money, 5) bilateral or nominal effective exchange rate (NEER), 6) consumer price inflation (CPI). Among these variables, the commodity price index and industrial production are proxies for external and domestic supply shocks, and are assumed to be unaffected by other variables contemporaneously. We include wages to represent a demand shock. This use of a proxy variable for demand is common for transition countries due to lack of reliable data on output gaps. Broad money is included to allow for monetary shocks. The ordering starts from exogenous variables and ends with inflation, on which all shocks can have an immediate impact.

- We use monthly data for 2001–14. All variables have been seasonally adjusted (using TRAMO-SEATS seasonal adjustment procedure with automatic outlier detection), except for the exchange rate, which shows no seasonal pattern. All variables are stationary in first differences based on Augmented Dickey-Fuller and Phillips-Perron unit root tests.
- The VAR lag length was selected based on the main sample 2001–14. Alternative information criteria suggested lag lengths 1, 7 and 12 months for VARs with bilateral exchange rates. The model with only 1 month lag showed substantial residual autocorrelation, suggesting that more lags need to be included. A specification with all lags from 1 through 7 and lag 12 has been selected as the baseline model. Robustness checks with 7 and 12 month lags confirmed baseline results.
- Pass-through is computed as the ratio of cumulative response of CPI to cumulative response of the exchange rate to a one standard deviation Cholesky shock of the exchange rate.

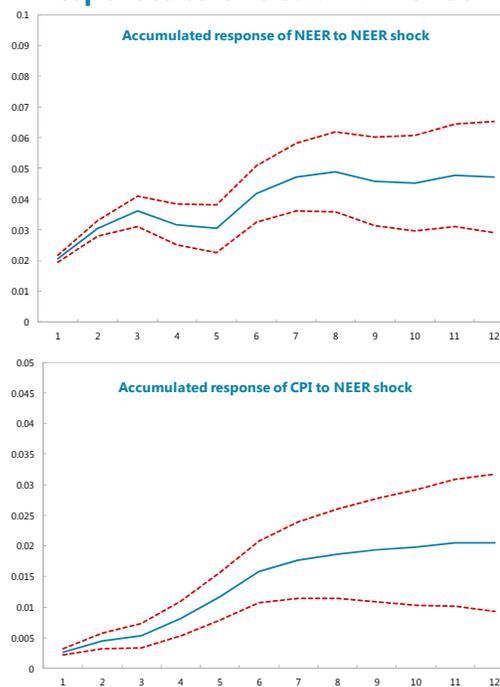
Estimates of Pass-through

4. Alternative VAR specifications have been estimated to study pass-through from a variety of exchange rates into different measures of prices.

Bilateral exchange rates vis-à-vis the US dollar, the euro, the Russian ruble, and the NEER have been included in the VAR one at a time to study the pass-through from each of these specific variables. Another specification uses a parallel exchange rate vis-à-vis the dollar that was prevalent in the black market in 1995–2000 and in 2011. In a similar vein, the VAR was estimated separately with CPI and PPI inflation as alternative measures of price growth.

5. Pass-through into CPI is relatively high and fast, reaching 0.4 after one year. Results from the baseline specification show that the NEER exchange rate pass-through is 0.1 after one quarter and 0.4 after one year, further increasing to 0.5 after two years. PPI pass-through is significantly higher and faster than CPI pass-through, reaching 0.5 after one quarter and 0.8 after one year. The accumulated impulse responses of CPI and NEER to a one standard deviation shock to the exchange rate are statistically different from zero at all horizons.

Figure 2. Belarus: NEER and CPI Impulse Responses to One S.E. NEER Shock



Source: IMF staff calculations

6. Pass-through to CPI is higher for the euro and the Russian ruble than for the US dollar.

The pass-through after three months is similar for all three currencies, but differences start to show after one year. The euro has the highest and the fastest pass-through of all three currencies. A higher pass-through from the euro and Russian ruble can be explained by tighter trade links of Belarus with the EU and Russia compared to the US. More than half of Belarus' imports come from Russia, and around 15 percent is from the Euro Area, while less than 2 percent come from the US. Nevertheless, owing to the importance of energy trade which is largely settled in dollars, the currency structure of Belarus imports is divided almost equally between US dollar, euro and Russian ruble (around 30% each), meaning that the US dollar remains an important currency in Belarus trade and explaining still a relatively high pass-through from the dollar.

Table 1. Belarus: Exchange Rate Pass-through to CPI and PPI

| Period | CPI | | | | PPI | | | |
|--------|------|------|------|------|------|------|------|------|
| | USD | EUR | RUB | NEER | USD | EUR | RUB | NEER |
| 1 | 0.14 | 0.10 | 0.11 | 0.13 | 0.15 | 0.11 | 0.10 | 0.41 |
| 3 | 0.23 | 0.20 | 0.22 | 0.15 | 0.43 | 0.30 | 0.33 | 0.53 |
| 6 | 0.36 | 0.40 | 0.39 | 0.38 | 0.62 | 0.55 | 0.59 | 0.69 |
| 12 | 0.43 | 0.54 | 0.45 | 0.44 | 0.71 | 0.68 | 0.71 | 0.78 |
| 18 | 0.47 | 0.66 | 0.59 | 0.50 | 0.73 | 0.70 | 0.73 | 0.80 |
| 24 | 0.51 | 0.64 | 0.60 | 0.54 | 0.73 | 0.70 | 0.73 | 0.80 |

7. Pass-through from the parallel exchange rate into the CPI is higher than from the official rate.

During 1995–2000 and in 2011 multiple exchange rates existed in Belarus. The official exchange rate lagged in depreciation compared to the black market rate, also called parallel market rate, and the difference between the two was sometimes very large². Estimations based on the parallel US dollar exchange rate show that the pass-through is higher for the sample 1995–2014 (0.7 vs. 0.3 after one year), but very similar for the baseline sample 2001–14. This is because during the 1990s the multiple exchange rates existed for several years, while

Table 2. Belarus: US Dollar Exchange Rate Pass-through to CPI

| Months | 2001 - 2014 | | 1995 - 2014 | |
|--------|-------------|-------------|-------------|-------------|
| | Official ER | Parallel ER | Official ER | Parallel ER |
| 1 | 0.14 | 0.11 | 0.08 | 0.06 |
| 3 | 0.23 | 0.17 | 0.21 | 0.23 |
| 6 | 0.36 | 0.35 | 0.28 | 0.44 |
| 12 | 0.43 | 0.48 | 0.32 | 0.66 |
| 18 | 0.47 | 0.48 | 0.44 | 0.64 |
| 24 | 0.51 | 0.53 | 0.46 | 0.67 |
| AIC | -29.58 | -29.36 | -26.05 | -25.45 |
| BIC | -24.02 | -23.80 | -21.56 | -20.95 |

² The parallel exchange rate time series for 1995–2000 is taken from Rusakevich (2002). The local office in Minsk provided data for 2011. Few missing observations have been interpolated.

in 2011 it only emerged for a few months. A model comparison based on information criteria favors the VAR with the official exchange rate, which is used in the rest of the analysis.

8. Pass-through appears to increase during times of sharp exchange rate adjustments. To check whether the pass-through was different before and after 2011 crisis, we estimate this statistic also on the sample 2001–08.³ In this case, the exchange rate pass-through is considerably lower, getting only to 0.25 after two years. The finding suggests that pass-through is higher than 0.5 during periods of sharp exchange rate adjustments. This observation also holds controlling for the months with highest volatility in the main sample (May and October 2011 for inflation, and January 2009, and May and September 2011 for exchange rate) by using dummy variables, suggesting that it is not the sharp depreciation and inflation spikes that are responsible for the high degree of pass-through, but rather the higher inflation environment surrounding such shocks. According to this methodology, pass-through during noncrisis times is 0.39 after one year and 0.46 after two years.

Table 3. Belarus: Exchange Rate Pass-through to CPI, Crisis vs. Non-crisis

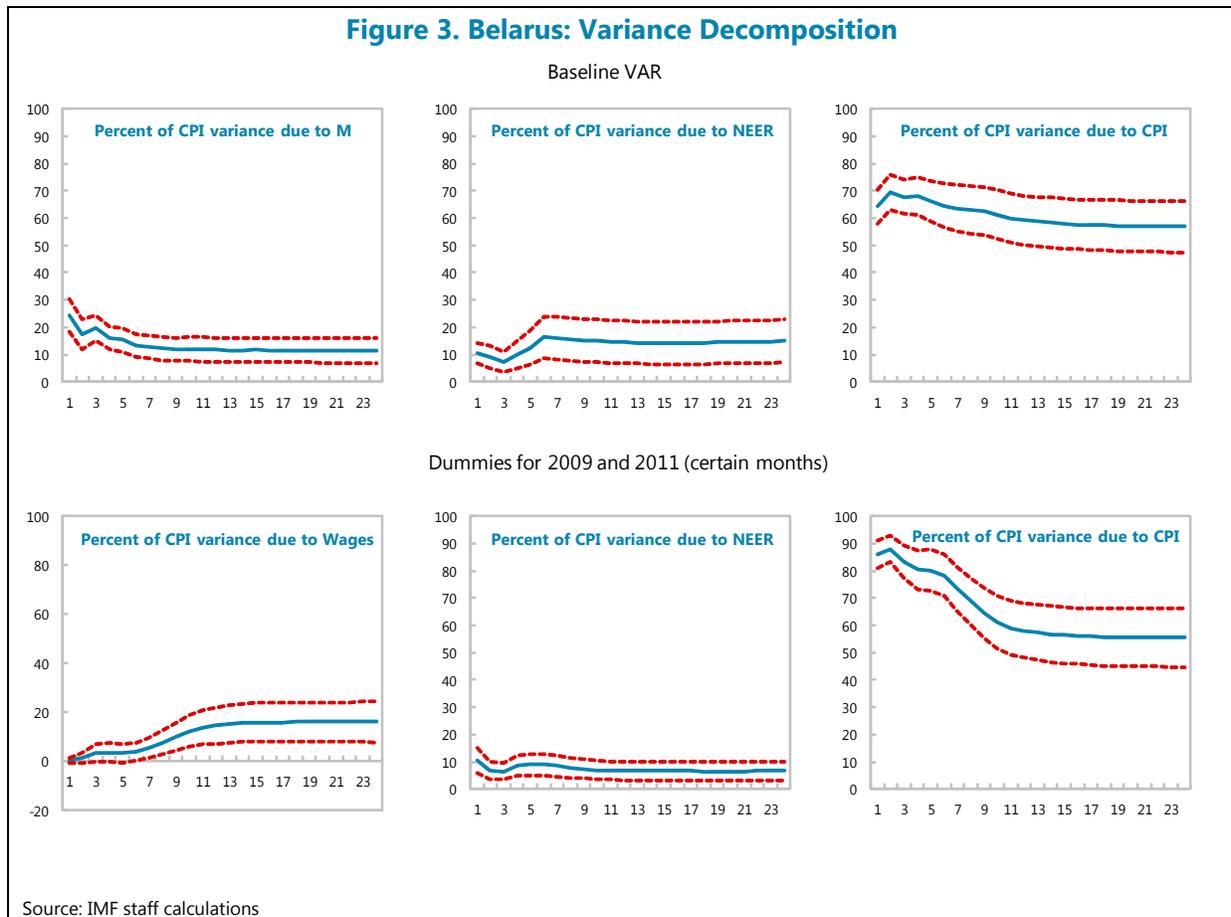
| Period | NEER 2001-14 | | NEER 2001-08 |
|--------|---|--------------|--------------|
| | Dummies for 2009 and 2011 (certain months) | Baseline VAR | Baseline VAR |
| 1 | 0.14 | 0.13 | 0.01 |
| 3 | 0.15 | 0.15 | 0.00 |
| 6 | 0.28 | 0.38 | 0.19 |
| 12 | 0.39 | 0.44 | 0.14 |
| 18 | 0.44 | 0.50 | 0.25 |
| 24 | 0.46 | 0.54 | 0.25 |

Variance Decomposition

9. The exchange rate has a significant role in explaining the variance of inflation, even though past price growth is the main factor explaining price dynamics. Figure 3 plots the CPI forecast error variance decomposition for two VAR specifications: the baseline specification, and the specification with dummies for high volatility months. Only shocks which have a statistically significant contribution to the CPI error variance are shown. Forecast error variance decomposition for CPI shows the relative importance of shocks to the variables in the VAR in explaining the variance of inflation. NEER shocks and CPI shocks are significant in both cases, although the contribution of the NEER at longer horizons halves if dummies for extreme months are included. CPI shocks contribute about 60 percent after one year in both specifications, indicating high persistence

³ The data after the 2011 episode is not enough to estimate a VAR with 6 variables and 7 lags. Therefore we cannot directly apply the methodology to the time period of interest. We end the sample in 2008 in this case in order to eliminate any impact of the global financial crisis.

of inflation. Monetary shocks lose significance once crisis episodes are dummied out. However, nominal wages gain significance, and account for 15 percent of CPI variance after one year. Shocks to commodity prices and industrial production play no significant role in CPI variance.



Pass-through into CPI Components

10. Pass-through is high and fast for food and nonfood items but negligible for services.

The one year pass-through is 0.7 and 0.6 for food and nonfood components of CPI, but only 0.2 for services, in which the share of regulated prices is high. Moreover, the cumulative impulse response of services inflation to exchange rate shock is insignificant at all horizons, meaning that statistically the effect is not different from zero.

11. Pass-through into regulated prices can be high during times of sharp exchange rate adjustment, while in normal times it mostly affects unregulated prices. The CPI is decomposed into a regulated and unregulated component based on IPM methodology (Zaretsky (2014)), where the regulated component includes certain types of services, alcohol and tobacco, and petrol prices. Pass-through is faster and somewhat higher into unregulated prices based on baseline specification, although the numbers for both components are of similar magnitude. If crisis months are dummied out, however, the pass-through into regulated prices becomes much smaller and statistically

insignificant. This means that in normal times the impact of the exchange rate on administrative prices is very low. However, a sharp depreciation pushes up the costs significantly and therefore requires regulated prices react by a similar amount as unregulated prices.

| Baseline VAR | | | | | | |
|--|------|------|----------|----------|---------------|-----------|
| Period | CPI | Food | Non-food | Services | Non-regulated | Regulated |
| 1 | 0.13 | 0.17 | 0.31 | 0.00 | 0.19 | 0.09 |
| 3 | 0.15 | 0.25 | 0.41 | 0.00 | 0.25 | 0.10 |
| 6 | 0.38 | 0.61 | 0.66 | 0.10 | 0.55 | 0.34 |
| 12 | 0.44 | 0.66 | 0.62 | 0.16 | 0.55 | 0.49 |
| 18 | 0.50 | 0.73 | 0.68 | 0.23 | 0.62 | 0.57 |
| 24 | 0.54 | 0.75 | 0.70 | 0.28 | 0.65 | 0.60 |
| Dummies for 2009 and 2011 (certain months) | | | | | | |
| 1 | 0.14 | 0.19 | 0.17 | -0.02 | 0.14 | 0.13 |
| 3 | 0.15 | 0.25 | 0.23 | -0.01 | 0.13 | 0.14 |
| 6 | 0.28 | 0.40 | 0.28 | 0.13 | 0.40 | 0.21 |
| 12 | 0.39 | 0.43 | 0.42 | 0.07 | 0.60 | 0.16 |
| 18 | 0.44 | 0.51 | 0.40 | 0.09 | 0.61 | 0.16 |
| 24 | 0.46 | 0.52 | 0.41 | 0.10 | 0.62 | 0.17 |

Comparison to Previous Studies

12. Our findings are broadly in line with those of earlier studies for pass-through in transition economies. Beirne and Bijsterbosch (2009) study pass-through into consumer prices for central and eastern European EU member states, and find the (average across countries) pass-through to be 0.5-0.6 depending on the methodology. Korhonen and Wachtel (2006) estimate pass-through for CIS countries using VAR on post-1999 sample, and find relatively high and fast pass-through. For example, the pass-through in Ukraine after one year is 0.63; in Moldova it is 0.49. Moreover, the study finds that the exchange rate pass-through in CIS countries is higher compared to other emerging markets. Petreski (2013) also finds quite high pass-through for transition economies, ranging from 0.7 to 1.1 (the sample includes 24 economies of CESEE and the CIS). Petreski (2013) further finds that pass-through is almost twice as high during crisis times compared to pre-crisis levels for this set of countries. Beckmann and Fidrmuc

Table 5. Belarus: Size of Exchange Rate Pass-through in Transition Countries

| Paper | Range of estimates (excluding Russia and Kazakhstan*) |
|---------------------------------------|--|
| Beirne and Bijsterbosch (2009) | 0.34 - 0.62 |
| Korhonen and Wachtel (2005) | 0.25 - 1.62 |
| Petreski (2013) | 0.7 - 1.1 (average for a group of 24 countries) |
| Beckmann and Fidrmuc (2013) | 0.22 - 0.71 |
| IMF staff estimate for Belarus | 0.4 - 0.6 |

Note: *Russia and Kazakhstan are excluded from comparison, because the pass-through for these countries is typically found to be low or negative.

(2013) find high US dollar pass-through rate for CIS countries on average, although they also find that it is very heterogeneous across countries—e.g., dollar pass-through is close to zero in Russia and Kazakhstan, but around 0.5 in Moldova and Ukraine. In their sample countries with higher share of energy imports from Russia typically have higher pass-through.

C. Impact of Regulated Prices

This section studies the impact on inflation of widespread price regulation and recent partial price liberalization in Belarus. The weight of regulated goods in CPI was almost 50 percent at the end of 2011, gradually declining to 25 percent by the end of 2014 before a temporary ban on all price increases was introduced in December. Inflation in regulated prices has been relatively large, suggesting that there are structural upward pressures on administrative prices. A major part of regulated prices inflation was due to regulated food and services.

Price Regulation Overview

13. Direct price regulation was sharply tightened in 2011. Between 1999 and 2011 prices were regulated mostly indirectly. The Council of Ministers set marginal release price index changes for each year which had to be respected by all enterprises, thus containing overall price growth. In 2011 this regulation was repealed, but direct price regulation was simultaneously tightened as year-on-year inflation rose to double digits at the beginning of the year. Four lists of socially important goods subject to price controls by different authorities were established by Presidential Decree. The first list, regulated by the Ministry of Economy, covers socially important foodstuffs. The second list, regulated by the Regional Executive Committees and Minsk City, includes fruit, vegetables, wood, children's good and public services such as funerals. The third list, regulated by the Ministry of Health, includes paid medical services and drugs. A fourth list contains telecommunications and postal services, and is regulated by the Ministry of Economy.

14. At end-2011 almost 50 percent of the CPI basket (measured by weight) was regulated.^{4,5} More than 32 percent constituted regulated foodstuff prices, among which were many meat and poultry products, fish, milk products, cheese, eggs, tea and coffee, most of bread products, cereals and legumes, pasta, some fruits and vegetables, and some other items. Alcohol and tobacco prices were also regulated. Nonfood items included mostly children's shoes and clothing, pharmaceuticals, and petrol. Many services were (and remain) regulated as well, including

⁴ Staff calculations based on authorities' official documents on price regulation (Presidential decree, CoM Resolutions) and CPI basket data from Belstat.

⁵ Calculations are based not on the *number* of items in the CPI basket, but on the *weights* of the items in CPI in 2014. For example, fresh milk is only one of many items in the basket, but its weight in the basket is 1.6 percent. This allows evaluating the importance of regulated goods not only in terms of number of regulated items, but also how important these items are for computing CPI inflation.

such broad groups as utilities, transportation, communication, pre-school and higher education, and a few others like notary services and funerals.

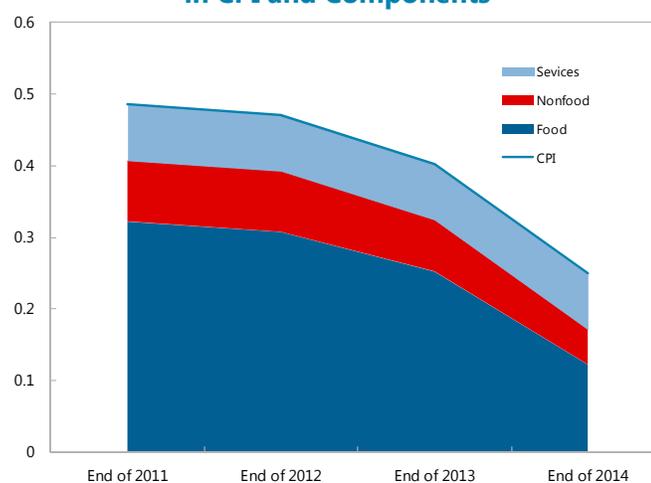
15. Partial price liberalization has been gradually implemented over the last two years.

First steps to reduce the number of goods subject to price controls have been taken in November 2013.⁶ In particular, certain food items were liberalized, including selected meat and fish products, while liberalized nonfood items included hosiery and a few household and children's goods. On the services side, shoe repair was deregulated. Further progress was made in 2014 with the liberalization of more meat and fish products, oil, butter, sugar, flour, cereals and legumes, pasta, and goods for children, as well as bread and chicken eggs.

16. With these steps, the weight of regulated prices in the CPI fell to about a quarter by mid-2014.

Remaining regulated food prices include mostly dairy and certain vegetables and fruits, as well as strong alcoholic beverages. The latter contributes about 5 percent to the CPI basket, and more than a third of the regulated food component. In the nonfood component, only 14 percent of all prices remain regulated. The items are petrol and pharmaceuticals. Regulated services, which remain about 50 percent of all services prices, include utilities, transportation, communication, pre-school and higher education fees, and few others.⁷

Figure 4. Belarus: Share of Regulated Prices in CPI and Components



Source: Belstat, IMF staff calculations

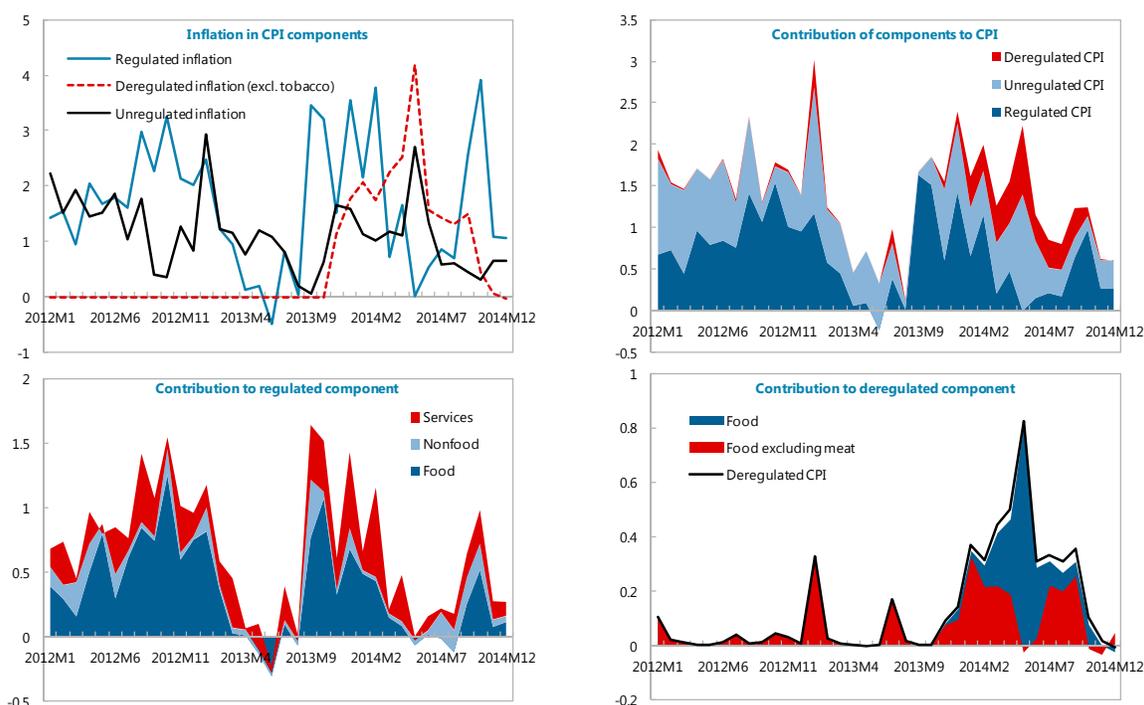
17. Across the board price controls introduced in December 2014 rolled back the progress.

In mid-December 2014 the government introduced a freeze on price increases for all retail goods and services throughout the country. The ban was subsequently partly relaxed in January and February, including by allowing partial adjustment of prices of imported goods and goods with imported inputs in line with the depreciation of the rubel exchange rate, before being repealed entirely in April.

⁶ The only item liberalized in 2012 was tobacco.

⁷ Weights of food, non-food and services to CPI are 49 percent, 35 percent and 16 percent respectively.

Figure 5. Belarus: CPI Decomposition, 2012–14



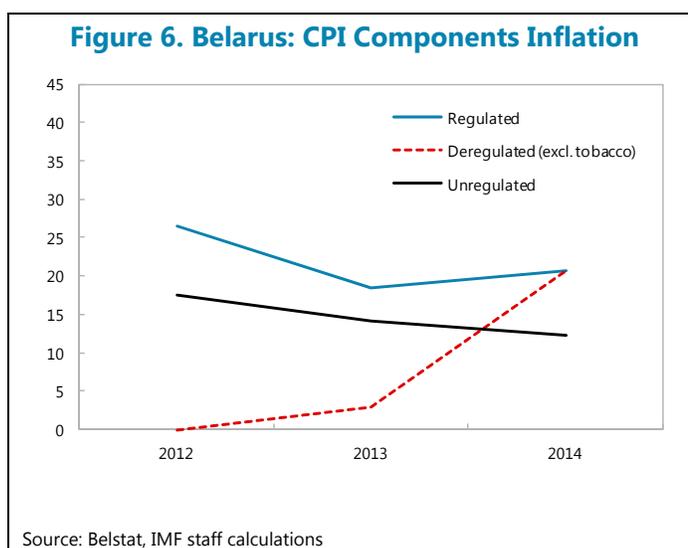
Source: Belstat, IMF staff calculations

Impact of regulated and liberalized prices on inflation

18. Price controls prevent efficient allocation of resources and, paradoxically, can be a source of constant upward pressures on prices. As the purpose of price controls has typically been to keep product prices below price levels that the market would otherwise generate, the controls imply an implicit subsidy for the buyer of the goods or services. Since such a subsidy is costly to its provider (whether government or enterprise), the cost of this subsidy can be expected to generate permanent pressures to raise administrative prices. This mechanism has been observed in other countries. For instance, Ègert (2007) suggests it is one of the reasons for fast regulated price growth (particularly for services) in Central and Eastern EU economies, together with the obsolete capital stock requiring renewal thus driving up the costs of production. The study also shows that in these countries regulated price changes were infrequent and large, and regulated services inflation was persistently above average inflation. Lùnnemann and Mathä (2010) look at regulated prices in 15 EU countries, and also find that regulated services are on average more rigid than other indices, but exhibit larger absolute price changes. Moreover, they are more rigid downward (with the ratio between regulated price increases and decreases being 90:10), and regulated price increases are on average larger than price decreases. This evidence suggests that there are recurrent pressures on regulated prices to rise. The experience in Belarus appears to be in line with these findings.

19. Regulated prices in Belarus have shown higher average growth during 2012–14 than unregulated prices.

To assess the impact of regulated and unregulated price components, we decompose the CPI into: (i) a regulated component, which includes prices of goods regulated at any given moment; (ii) a unregulated component, which includes prices of goods that have not been regulated during the period under review; and (iii) a deregulated component, which includes prices of all goods at any point in time that were deregulated before or at that point.⁸ The decomposition shows that despite the authorities' control, prices of regulated goods showed higher average growth rates than those of unregulated goods and contributed substantially to overall price growth. Changes in prices of regulated items (such as petrol, alcohol, most services) have been infrequent but were typically very large (in double digits) when they occurred, so that on average they far outpaced price growth in unregulated items. Interestingly, inflation in the deregulated price component has shown almost no dramatic values and has typically remained below regulated price inflation. The contribution of deregulated inflation excluding meat product prices to total monthly CPI growth hardly exceeded 0.3 percentage points per month in 2014.⁹



20. Food prices have been the key determinant of both deregulated and regulated inflation, while the latter was also driven by services to a large extent. In 2012–14 about half of administrative inflation was determined by regulated food prices with a third contributed by services. Impact of services prices was large despite their relatively moderate weight in the regulated CPI, which was on average three times smaller than the weight of foodstuffs. Strong upward pressures on services tariffs arise from low levels of cost recovery. While deregulated component includes a large number of both food and nonfood items, it is the former that was driving the liberalized prices inflation. Deregulated nonfood price growth has been moderate, while the nonfood items characterized by relatively high average inflation, such as petrol and pharmaceuticals, remain regulated.

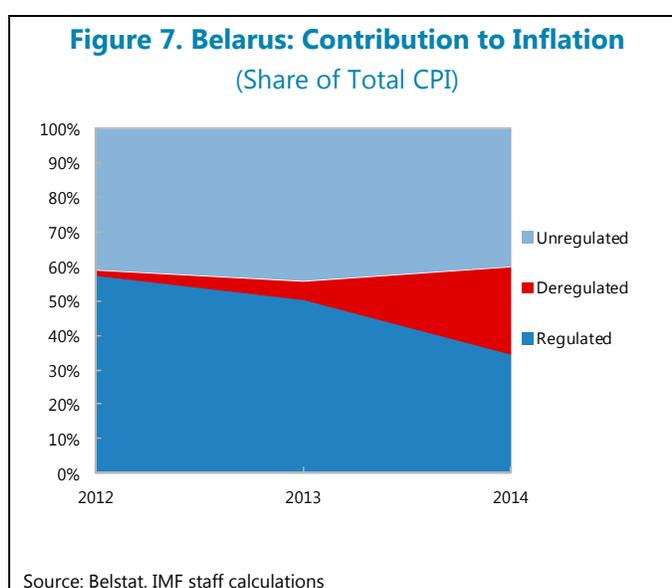
⁸ For example, deregulated component in February 2014 includes prices of goods which were liberalized in November 2013 and January 2014, but not the goods which were liberalized in March 2014.

⁹ Beef and pork prices spiked in May 2014 and contributed significantly to overall CPI in 2014. However, this increase was caused not by liberalization per se (which happened in March 2014), but as a reaction to a negative supply shock.

D. CPI Decomposition for Belarus

Using the results from the previous sections, the contribution of regulated and liberalized prices, and exchange rate pass-through into overall CPI inflation in 2012–14 is evaluated. While recent price liberalization has increased the contribution of the deregulated component to CPI, the joint contribution of regulated and deregulated prices to total annual CPI inflation has remained roughly constant through 2012–14, suggesting that price liberalization did not result in higher inflation. Regulated prices remain important in understanding inflation dynamics as they alone contributed between one third and two thirds to inflation in different years. Pass-through added about 2 percentage points annually in 2013 and 2014, but was large in 2012. The “residual” part of inflation, excluding deregulated items, remained roughly constant at a high level in 2013–14.

21. Administrative prices contribution has decreased, but remains high. Using the same breakdown of prices introduced in the previous section, it can be shown that the contribution of regulated prices to overall inflation decreased since 2012 while the contribution of deregulated prices increased as more items moved to the deregulated component. Between 2012 and 2013 the decline in administrative prices contribution was associated with an overall slowdown of inflation. Between 2013 and 2014 overall inflation remained similar but the contribution of regulated prices declined due to partial price liberalization. Still, it was 5.6 percent in 2014 or about one third of total number.



22. Surprisingly, price liberalization was not associated with faster price growth. Between 2012 and 2014, the joint contribution of the regulated and deregulated components to total inflation remained roughly constant at 60 percent. This means that price growth rates for deregulated items on average remained similar before and after the price controls were lifted. Several reasons could explain why price deregulation did not result in abnormal price growth of liberalized items. First, prices of deregulated goods could have been close to their market levels even under regulation, so allowing the prices to adjust freely did not have a large impact. Second, it is possible that some sort of (informal) regulation continued even after the prices were officially deregulated, which prevented abrupt adjustment. Finally, the monetary tightening in 2014 may have slowed price growth for liberalized items.

Table 6. Belarus: CPI Inflation Decomposition, 2012–14

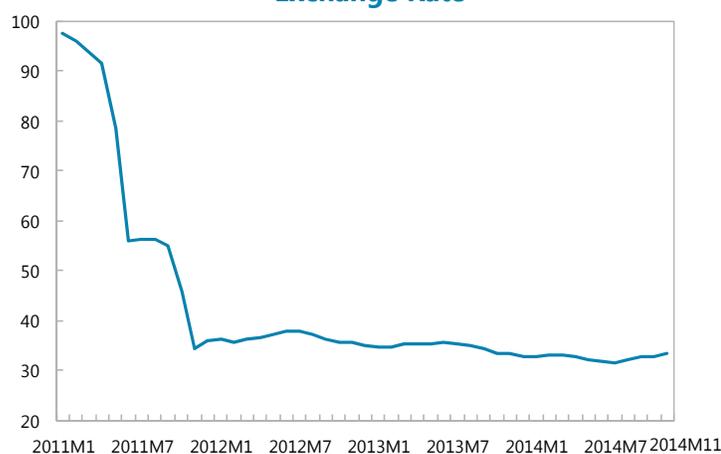
| | 2012 | 2013 | 2014 |
|--|-------------|-------------|--------------|
| CPI | 21.8 | 16.5 | 16.2 |
| Regulated prices contribution | 12.5 | 8.3 | 5.6 |
| Deregulated prices contribution | 0.3 | 0.9 | 4.1 |
| Unregulated prices contribution | 9.0 | 7.3 | 6.5 |
| Exchange rate pass-through contribution to market prices* | 6.0 | 1.9 | 2.0** |
| "Residual" inflation*** | 3.3 | 6.3 | 8.6 |
| "Residual" inflation - deregulated prices (excl. pass-through) | 3.0 | 5.4 | 4.9 |

Note: *Exchange rate pass-through assessment is based on quarterly calculation, which takes into account also the pass-through from exchange rate change in the previous three quarters. ** Jan-Nov 2014. *** "Residual" inflation = CPI - ERPT - Regulated.

23. Pass-through contributed 6 percentage points to market price inflation in 2012, but only about 2 percentage points in 2013 and 2014.

Contribution of exchange rate pass-through into CPI is evaluated based on quarterly NEER depreciation and the value of pass-through for 3, 6, 9 and 12 months estimated in the first section. The pass-through is calculated separately for regulated and market prices¹⁰. In 2012 the pass-through contribution to market prices was the largest as the impact of a large NEER depreciation at the end of 2011 was partly transmitted into prices also next year. Notably, there was also a large

pass-through into regulated prices in that year (about 8 percentage points) reflecting the fact that

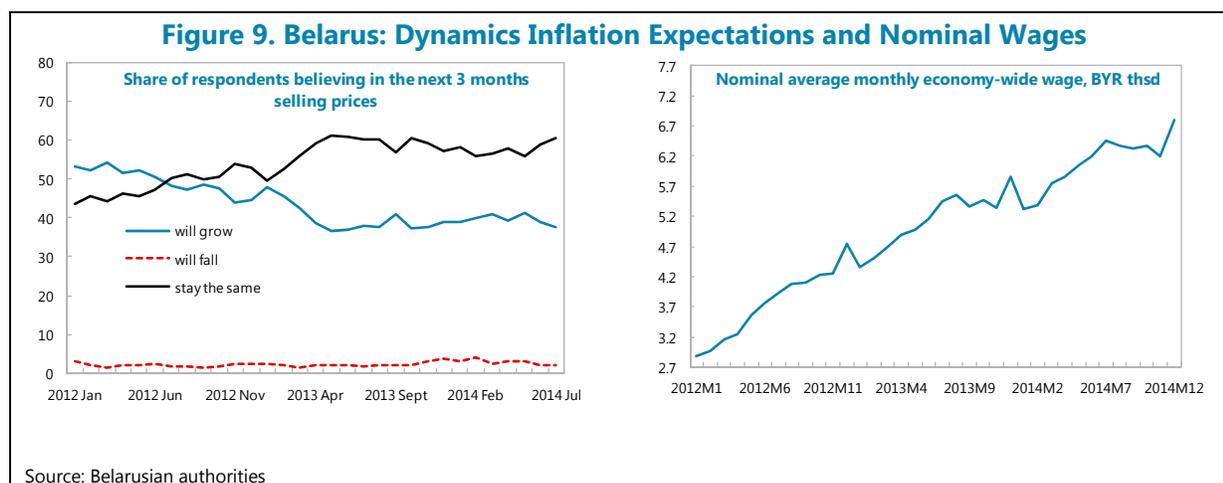
Figure 8. Belarus: Dynamics of the Nominal Effective Exchange Rate

Source: INS

¹⁰ For 2012 the pass-through values from the baseline specification are used (0.6 for unregulated and 0.5 for regulated after one year), while for 2013 and 2014 the pass-through coefficients are based on the sample without outlying months (0.6 for unregulated and 0.1 for regulated after one year). The values are chosen to take into account the possibility of high pass-through from sharp exchange rate depreciation in 2011 on both unregulated and regulated prices next year.

administrative prices had to accommodate the sharp exchange rate depreciation as well. In 2013 and 2014 (January–November) the NEER depreciation was smaller resulting in a lower pass-through effect.

24. Contribution of inflation due to domestic factors remained roughly constant in 2013–14 (if deregulated prices are excluded). The “residual” inflation, calculated as total CPI inflation minus pass-through inflation minus regulated inflation, increased between 2012 and 2014. However, the increase between 2013 and 2014 was mainly because liberalized items became included in the “residual” as opposed to “regulated”. The “residual” inflation can be interpreted as market price growth stemming from domestic factors such as monetary policy, nominal wage growth, and inflationary expectations, which remain high in Belarus.



E. Conclusion

25. Administrative prices remain one of the main drivers of persistently high inflation in Belarus. Regulated goods inflation contributed on average a half to total inflation in 2012–14, which is a high number given that inflation is in double digits. Moreover, administrative price growth was often higher than unregulated price growth. More comprehensive price liberalization should help reduce the upward pressures on prices over time as currently regulated prices align with their market levels. This should help stabilize inflation at structurally lower levels. However, the removal of price controls is likely to result in a one-off price increase, thereby raising inflation in the short term.

26. Domestic inflationary factors, associated with overly loose macroeconomic policies, also played a major role. Their average contribution to inflation was about 30 percent in recent years. These factors comprise fast nominal wage growth and high volumes of credit—in particular via directed and subsidized lending—which have led to excessive domestic demand growth, resulting in upward pressure on prices. The persistence of these policies and of high price growth has also raised inflation expectations, thereby further boosting inflation and creating inflation inertia. To successfully curb inflationary pressures in the economy, macroeconomic policies need to be tightened until inflation has been brought to a structurally lower level. Higher policy and central

bank credibility associated with such a policy would help contain expectations of future price growth and thereby further contribute to stabilizing inflation at a low level.

27. The impact of pass-through on inflation was large after the 2011 crisis, but has been limited in later years. In 2012 the contribution of pass-through inflation was substantial because the sharp rubel depreciation of 2011 was still being transmitted into prices. In the last two years, however, the contribution of pass-through to inflation did not exceed 2 percentage points per year, despite an estimated high pass-through coefficient. The reason is that the rubel has remained relatively stable against a basket of currencies of Belarus' main trading partners. However, the renewed depreciation since late December 2014 is likely to raise the impact of the exchange rate on inflation this year.

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