

Comment on Methodology
of the Procedure for Setting and Publishing the Official Exchange Rate of the
Hryvnia Against Foreign Currencies, the Reference UAH/USD Exchange Rate, and
Accounting Prices for Investment Metals

1. The official exchange rate of the hryvnia against foreign currencies and accounting prices for investment metals are set/calculated in accordance with the Regulation *On Setting the Official Hryvnia Exchange Rate against Foreign Currencies and Calculating the Reference Exchange Rate of the Hryvnia against the U.S. Dollar and Official Prices for Investment Metals* approved by NBU Board Resolution No. 148 dated 10 December 2019, available [here \(UKR\)](#).

2. National bank of Ukraine (hereinafter – the NBU):

(1) sets the official hryvnia exchange rate against foreign currencies and the international accounting unit (hereinafter – the official hryvnia exchange rate against foreign currencies) in line with the lists of foreign currencies against which the NBU sets the official hryvnia exchange rate on a daily and monthly basis and which are made up in accordance with NBU Order No. 865, dated 27 December 2019, available [here \(UKR\)](#)

(2) calculates accounting prices for investment metals in line with the list of investment metals for which the NBU calculates accounting prices on a daily basis and which is made up in accordance with NBU Order No. 865, dated 27 December 2019, available [here \(UKR\)](#)

(3) sets the updated official hryvnia exchange rate against Special Drawing Rights (hereinafter – SDRs) on a monthly basis (on the second business day of the month as of the last business day of the previous month).

The lists of foreign currencies against which the NBU sets the official hryvnia exchange rate on a daily and monthly basis, and the list of investment metals for which the NBU calculates the official price on a daily basis are in effect until the NBU publishes new lists.

3. The official exchange rate of the hryvnia against foreign currencies is calculated as follows:

(1) against the U.S. dollar – in line with the section Calculation of the Official Exchange Rate of the Hryvnia against the U.S. Dollar and the Reference Exchange Rate of the Hryvnia against the U.S. Dollar of this Comment on Methodology or the section Calculation of the Official Exchange Rate of the Hryvnia against the U.S. Dollar under the Special Conditions of this Comment on Methodology

(2) against foreign currencies (except the U.S. dollar and SDRs):

based on data on the UAH/USD exchange rate calculated in accordance with paragraph 3 subparagraph 1 of this Comment on Methodology, and on BFIX quotes of foreign currencies¹ – for currencies for which TIS BLOOMBERG publishes the BFIX quotation on the day the official hryvnia exchange rate is calculated

¹ BGN's (Bloomberg Generic Price) weighted average spot-market exchange rate/price quotes of foreign currencies/investment metals against the U.S. dollar (or those of the U.S. dollar against foreign

based on data on the UAH/USD exchange rate and the latest available information, at the time of the calculation of the official hryvnia exchange rate, about foreign exchange rates against the U.S. dollar (or those of the U.S. dollar against foreign currencies) that are set by the respective central (national) currency-issuing banks, or about current exchange rates of foreign currencies against the U.S. dollar (or those of the U.S. dollar against foreign currencies) in the international currency markets that are received through trading and information systems (hereinafter referred to as TIS) – for currencies for which, on the day the official exchange rate of the hryvnia was calculated, TIS BLOOMBERG did not calculate BFIX quotes or if these quotes were unavailable at the time the official hryvnia exchange rate was calculated

(3) against SDRs (daily) – based on information about the UAH/USD exchange rate and the estimated exchange rate of SDRs against the U.S. dollar that is calculated using the approaches outlined on the SDR Valuation page of the IMF’s official website, using BFIX currency quotes as exchange rate values included in the SDR basket

if on the day the official hryvnia exchange rate is calculated, TIS BLOOMBERG did not publish a BFIX quote for the currency included in the SDR basket, or if the information on that quotation was not available at the time the official hryvnia exchange rate was calculated, then to calculate the estimated SDR exchange rate against the U.S. dollar, the latest information is used that is available at the time the official hryvnia exchange rate is calculated about the exchange rate of that currency against the U.S. dollar (or that of the U.S. dollar against that currency) that is set by the central (national) bank that issues that currency

(4) against SDRs (this method has been clarified) – on the second business day of the month, based on information on the UAH/USD exchange rate on the last working day of the previous month and information on the SDR exchange rate against the U.S. dollar that is set by the IMF on its last working day of the previous month.

4. Accounting prices for investment metals are calculated as follows:

(1) based on data on the UAH/USD exchange rate calculated in accordance with paragraph 3 subparagraph 1 of this Comment on Methodology, and on BFIX-quoted U.S. dollar prices for investment metals for which TIS BLOOMBERG publishes the BFIX prices for investment metals in U.S. dollars on the day the official hryvnia exchange rate is calculated

(2) based on data on the UAH/USD exchange rate and on information about the last available price for investment metals quoted on the official website of the London Bullion Market Association (LBMA) or TIS – for investment metals for which TIS BLOOMBERG did not publish BFIX price quotations in U.S. dollars on the day the accounting price for investment metals was calculated or if no information on these price quotations was available at the time the accounting price was calculated.

5. The value of the official UAH/USD exchange rate is determined as a hryvnia amount per unit of foreign currency, while the values of the official hryvnia exchange

currencies/investment metals), which are calculated daily by the trading information system BLOOMBERG as of 3:30 p.m., and data that comes into the NBU through customized data transfer solutions.

rates against other foreign currencies, as well as the accounting price of investment metals, are determined in accordance with the lists of foreign currencies and investment metals referred to in paragraph 2 subparagraphs 1–2 of this Comment on Methodology.

The official exchange rate of the hryvnia against foreign currencies is set to four decimal places, while accounting prices for investment metals are calculated to two decimal places.

6. The official exchange rate of the hryvnia against foreign currencies and the accounting price of investment metals will take effect the next business day after the day of setting and/or settlement.

The official exchange rate of the hryvnia against foreign currencies and the accounting price of investment metals that:

(1) are set/calculated on the last business day of the week or on the eve of a holiday are valid on the following weekends or holidays

(2) are set/calculated on the last business day of the week or on the eve of a holiday, take effect on the first business day of the following week or on the first business day following the holiday.

The official exchange rate of the hryvnia against foreign currencies indicated in the list of foreign currencies for which the NBU, on a monthly basis, establishes the official exchange rate of the hryvnia is set on the last business day of the month and takes effect from the first day of the following calendar month and is valid until the end of that month.

7. The NBU has the right to set the official exchange rate of the hryvnia against foreign currencies and to calculate the accounting price of investment metals on a specified date at the level of the previous business day in case of transfer of business days.

8. The official exchange rate of the hryvnia against foreign currencies and the accounting price of investment metals are used by residents and nonresidents of Ukraine:

(1) to reflect FX and precious metals transactions in accounting records

(2) to conduct FX transactions between the NBU and the State Treasury Service of Ukraine

(3) in other cases determined by the legislation of Ukraine.

The revised official hryvnia exchange rate against SDRs specified in paragraph 2 subparagraph 3 of this Comment on Methodology is used to compile the NBU's monthly balance sheet and other accounting and statistical statements.

9. Information on the official exchange rate of the hryvnia against foreign currencies and the calculated accounting price of investment metals is published on the NBU's official website no later than 4 p.m. on the day of setting/calculation and is sent to subscribers of the NBU's email system.

If the official UAH/USD exchange rate was calculated using the Calculation of the Official Exchange Rate of the Hryvnia against the U.S. Dollar under Special

Conditions, the NBU announces it on its official website at the same time that it publishes information on the official exchange rate of the hryvnia against foreign currencies and the calculated accounting prices for investment metals.

10. The NBU has no obligation to carry out transactions to purchase and sell foreign currencies at official exchange rates or to purchase and sell investment metals at their accounting prices.

11. To inform market participants of the latest UAH/USD exchange rate, the NBU calculates and publishes on its official website the reference value of the UAH/USD exchange rate in accordance with the transactions made in the Ukrainian FX market as of 12:00 p.m.

The NBU has no obligation to make transactions based on the reference value of the UAH/USD exchange rate.

12. Calculation of the reference UAH/USD exchange rate is performed every business day in accordance with the Calculation of the Official Exchange Rate of the Hryvnia against the U.S. Dollar and the Reference Exchange Rate of the Hryvnia against the U.S. Dollar (see below).

The reference UAH/USD exchange rate is published on the NBU's official website by 12:30 p.m. on the day it is calculated.

13. No calculation of the reference UAH/USD exchange rate is performed if:

(1) the number of TOD, TOM, and SPOT transactions to buy/sell the U.S. dollar that were conducted by banks with other banks and with the NBU in the FX market of Ukraine on the day of the calculation of the official exchange rate and that were reported to the NBU by TIS through relevant information exchange channels before 12 p.m. on the same day is less than or equal to 10% of the average daily number of said transactions in the previous month

(2) due to an operational risk event at the stages of obtaining and/or processing the information from TIS about the transactions specified in paragraph 14 subparagraph 1 of this Comment on Methodology, the number of transactions described using the data that is available as of 12 p.m. is less than or equal to 10% of the average daily number of said transactions in the previous month.

In this case, the “–” symbol is displayed in the relevant box on the NBU's official website, along with other information the NBU publishes there.

Calculation of the Official Exchange Rate of the Hryvnia against the U.S. Dollar and the Reference Exchange Rate of the Hryvnia against the U.S. Dollar

1. The Calculation of the Official Exchange Rate of the Hryvnia against the U.S. Dollar and the Reference Exchange Rate of the Hryvnia against the U.S. Dollar (hereinafter – the Calculation) takes into account the information about all TOD, TOM, and SPOT transactions to buy/sell US dollars that were conducted in the FX market by

banks with other banks and with the NBU on the day of the calculation of the official exchange rate and that were reported to the NBU by TIS via relevant information exchange channels:

(1) by 12 p.m. – for the purposes of calculating the reference UAH/USD exchange rate

(2) by 3:30 p.m. – for the purposes of calculating the official UAH/USD exchange rate.

2. The Calculation is performed as follows:

(1) Transactions based on exchange rates that deviate by more than 2 percent ($\pm 2\%$) from the arithmetic mean of the exchange rates of a series of transactions are excluded from the available series of transactions determined in accordance with paragraph 1 of the Calculation.

(2) After paragraph 2 subparagraph 1 of the Calculation has been fulfilled, the resulting series of transactions is used to calculate the standard deviation of the exchange rate according to the formula:

$$\sigma_k = \sqrt{\frac{\sum_{i=1}^n (x_{ki} - \bar{x}_k)^2}{n}},$$

where σ_k is the standard deviation of the exchange rate

x_{ki} is the exchange rate in the i th transaction

\bar{x}_k is the arithmetic mean of a series of exchange rates

n is the number of transactions

(3) After paragraph 2 subparagraph 1 of the Calculation has been fulfilled, the resulting series of transactions is used to calculate the standard deviation of the transaction amount according to the formula:

$$\sigma_o = \sqrt{\frac{\sum_{i=1}^n (x_{oi} - \bar{x}_o)^2}{n}},$$

where σ_o is the standard deviation of the transaction amount

x_{oi} is the amount of the i th transaction

\bar{x}_o is the arithmetic mean of a series of transaction amounts

n is the number of transactions.

(4) The following are excluded from the series of transactions resulting from the fulfillment of paragraph 1 of the Calculation:

transactions with exchange rates deviating from the arithmetic mean of the exchange rates \bar{x}_k by more than two standard deviations σ_k

transactions with amounts deviating from the arithmetic mean of transaction amounts \bar{x}_o by more than two standard deviations σ_o .

(5) After paragraph 2 subparagraph 4 of the Calculation has been fulfilled, the resulting series of transactions is considered to be the benchmark series to be used in

calculating the official UAH/USD exchange rate and the reference UAH/USD exchange rate.

The values of the official UAH/USD exchange rate and the reference UAH/USD exchange rate are calculated as the weighted average exchange rate of the benchmark series using the formula:

$$\bar{K} = \frac{\sum_{i=1}^n (K_i \times O_i)}{\sum_{i=1}^n O_i},$$

where \bar{K} is the weighted average exchange rate

O_i is the amount of the i th transaction

K_i is the exchange rate in the i th transaction

n is the number of transactions.

Calculation of the Official Exchange Rate of the Hryvnia against the U.S. Dollar under Special Conditions

1. The official UAH/USD exchange rate is calculated as per the Calculation of the Official Exchange Rate of the Hryvnia against the U.S. Dollar under Special Conditions if:

the number of TOD, TOM, and SPOT transactions to buy/sell the U.S. dollar that were conducted by banks with other banks and with the NBU in the FX market of Ukraine on the day of the calculation of the official exchange rate and that were reported to the NBU by the TIS through relevant information exchange channels before 12 p.m. on the same day is less than or equal to 10% of the average daily number of said transactions in the previous month

the number of transactions that are specified in paragraph 1 indent 2 of the Calculation of the Official Exchange Rate of the Hryvnia against the U.S. Dollar under Special Conditions and that are described using the data that becomes available at 12 p.m. is less than or equal to 10% of the average daily value of the same indicator for the previous month.

2. When there are grounds for the calculation of the official UAH/USD exchange rate under special conditions, the NBU between 12 p.m. and 1 p.m. requests that banks making transactions in Ukraine's FX market provide information on quotes associated with the purchase/sale of USD 1 million. The requested information is sent to the NBU via the TIS functionality. The request is sent to the 20 banks included the list of banks that is compiled under NBU regulations (hereinafter – the List of Banks). The banks comprising the list are eligible to participate in a best-exchange-rate intervention, which is conducted by requesting the quotes on the purchase/sale of foreign currency from market participants. The list of Banks is published on a quarterly basis on the NBU's official website.

3. The NBU sends a request that is identical to the request outlined in paragraph 2 of the Calculation of the Official Exchange Rate of the Hryvnia against the U.S. Dollar under Special Conditions via the phone to 10 banks from the List of Banks if fewer than 5 banks have provided exchange rate quotes to buy and/or sell the U.S. dollar in response to the previous request or if none of the TIS is working, for whichever reason. The request is sent to the first 10 banks on the List of Banks if the day of making said request is an even date. Otherwise the request is sent to the other 10 banks on the List of Banks.

4. If exchange rate quotes to buy and/or sell the U.S. dollar that were sent in response to the requests initiated as per paragraphs 2 and 3 of the Calculation of the Official Exchange Rate of the Hryvnia against the U.S. Dollar under Special Conditions were received by no less than five banks, the NBU has the right to use these quotes to calculate the official UAH/USD exchange rate according to the Calculation of the Official Exchange Rate of the Hryvnia against the U.S. Dollar under Special Conditions.

5. The official UAH/USD exchange rate is calculated as follows:

(1) in line with the Calculation of the Official Exchange Rate of the Hryvnia against the U.S. Dollar and the Reference Exchange Rate of the Hryvnia against the U.S. Dollar, if the number of TOD, TOM, and SPOT transactions to buy/sell US dollars that were conducted in the FX market of Ukraine by banks with other banks and with the NBU on the day of the calculation of the official exchange rate and that were reported to the NBU by the TIS through relevant information exchange channels before 3:30 p.m. on the same day is greater than or equal to 10% of the average daily number of said transactions in the previous month

(2) as a simple arithmetic mean of all exchange rate quotes to buy and/or sell the US dollar that were obtained under paragraph 2 or paragraph 3 of the Calculation of the Official Exchange Rate of the Hryvnia against the U.S. Dollar under Special Conditions, if the number of TOD, TOM, and SPOT transactions to buy/sell US dollars that were conducted in the FX market of Ukraine by banks with other banks and with the NBU on the day of the calculation of the official exchange rate and that were reported to the NBU by the TIS through relevant information exchange channels before 3:30 p.m. on the same day is less than or equal to 10% of the average daily number of said transactions in the previous month, and if the condition stipulated in paragraph 4 of the Calculation of the Official Exchange Rate of the Hryvnia against the U.S. Dollar under Special Conditions is met

(3) as a value that equals the official UAH/USD exchange rate effective on the day of the calculation, if none of the calculation conditions stipulated in paragraph 5 subparagraphs 1 and 2 of the Calculation of the Official Exchange Rate of the Hryvnia against the U.S. Dollar under Special Conditions are met.