

September 2016

Turnover in the domestic Foreign Exchange and OTC Derivatives Markets in April 2016



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Introduction

Every three years the Bank for International Settlements (BIS) together with national central banks conducts a survey on developments in the foreign exchange and over-the-counter (OTC) derivatives markets.¹ The purpose of the Triennial Central Bank Survey of Foreign Exchange and OTC Derivatives Market Activity is to obtain comprehensive and internationally comparable statistical information on the liquidity and structure of the above mentioned markets. The BIS defines the scope of data reporting and the uniform methodology of data collection. At the national level, the survey is coordinated by individual central banks. In 2016, central banks, including Narodowy Bank Polski (NBP), and monetary authorities of 52 countries participated in the survey. These institutions collected data from over 1,200 entities that are the most active financial institutions in the foreign exchange and OTC derivatives markets..

Narodowy Bank Polski, in addition to this analysis of the results of the survey for Poland, has posted on its website: <http://www.nbp.pl/homen.aspx?f=/en/systemfinansowy/obroty.html> data on the value of transactions concluded in April 2016 in the domestic foreign exchange market and the OTC derivatives market presented in detailed breakdowns. The results of the survey on global turnover in the foreign exchange and OTC derivatives markets, including all transactions involving the Polish zloty, published by the BIS, are available on the following website: <http://www.bis.org/publ/rpfx16.htm>. Links to studies prepared by other central banks, where the results of the turnover survey for some national markets are presented, can be found at <http://www.bis.org/statistics/triennialrep/national.htm>.

¹ In this document, the terms "the market for over-the-counter derivatives" and "the OTC derivatives market" are used interchangeably in order to specify these derivatives that are not traded in stock markets (regulated markets).

Methodological remarks

In 2016, Poland participated in the Triennial Central Bank Survey of Foreign Exchange and OTC Derivatives Market Activity in its full scope for the fifth time, collecting data on all market segments according to the BIS methodology. The presented results are comparable with the results of studies conducted by NBP in previous years, which can be found at: <http://www.nbp.pl/homen.aspx?f=/en/systemfinansowy/obroty.html>. The data collected in the current and the 2013 survey served as the basis for an analysis of changes in the size and structure of the foreign exchange and OTC derivatives markets in Poland over the last three years.

Sixteen most active banks and branches of credit institutions operating in Poland participated in the 2016 survey (the reporting dealers are listed in Appendix 1). They provided data on the value of transactions concluded in April 2016, in accordance with the reporting forms and guidelines specified by the BIS.² The conformity of the reports provided by banks with the methodology presented in Appendix 2 was verified by NBP. The aggregates for Poland calculated by NBP were sent to the BIS and are included in the global results.

Data for Poland for 2016 and 2013 are broken down into turnover in the foreign exchange market and in the OTC interest rate derivatives market. The **foreign exchange market** comprises the spot market, outright forwards (including non-deliverable forwards), fx swaps, CIRs and currency options. The **OTC interest rate derivatives market** includes forward rate agreements (FRAs), interest rate swaps (IRs), including Overnight Index Swaps (OISs), and interest rate options.

The data on turnover include only those transactions in which at least one of the parties was a bank or branch of a credit institution operating in Poland, having the reporting dealer status, with the location of a dealer entering into a transaction being the decisive factor. The term "**net turnover**" means that data represent the nominal value of transactions **after adjusting for local inter-dealer double counting** (i.e. the effect of double reporting of transactions concluded between two domestic reporting dealers has been eliminated). The presented **data do not cover transactions entered into between non-residents** (the instruments denominated in the Polish zloty are traded in the offshore market, mainly in London). The data comprising all transactions involving the Polish zloty have been processed and published by the BIS.

² Reporting forms used in Poland have been slightly modified by NBP. Overnight Index Swap transactions were singled out. Data were also compiled on, among others, standard transaction sizes in individual segments of the foreign exchange market and the OTC derivatives market. Questions were also added on internet-based trading platforms for retail clients, internet-based currency exchange offices and values of transactions to be cleared by central counterparties.

The presented data are not adjusted for gaps in reporting. Narodowy Bank Polski estimates that the value of transactions reported by 16 banks and branches of credit institutions account for around 95% of the total turnover in the domestic foreign exchange market and 98% in the domestic OTC interest rate derivatives market. Average daily turnover has been calculated according to the number of business days – **in April 2016 there were 21 business days in Poland**.³ All data are presented in **USD million**, which is consistent with the standard adopted in the survey by the Bank for International Settlements.

³ In April 2013, there were also 21 business days in Poland.

Turnover in the foreign exchange market

According to the BIS methodology, the foreign exchange market comprises spot market transactions, outright forwards (including non-deliverable forwards), fx swaps, CIRSs and currency options. In April 2016, the average daily net turnover in the domestic foreign exchange market amounted to USD 9,116 million and was 21% higher (at current exchange rates) than the value of transactions concluded in April 2013.⁴ Transactions that involved the Polish zloty prevailed on the domestic foreign exchange market. Their average daily value in April 2016 was USD 5,959 million. Over 85% of the market's net turnover were transactions with financial entities.

Table 1. Average daily net turnover in the domestic foreign exchange market in April 2013 and April 2016 (in USD million)

	2013	2016	Percentage change (at current exchange rates)	Percentage change (at constant exchange rates)
Foreign exchange market	7 564	9 116	21	33
Spot transactions	2 324	2 083	-10	1
Outright forwards	464	845	82	108
<i>of which non-deliverable forwards</i>	21	323	-	-
Fx swaps	4 581	5 958	30	41
CIRSs	125	160	28	45
Currency options	70	70	0	14

Note: the values of non-deliverable forwards in April 2013 and April 2016 are not comparable due to the different scope of data on transactions concluded by retail clients on internet-based trading platforms to which access was offered by reporting dealers, covered by the study.

Table 2. Average daily net turnover in segments of the domestic foreign exchange market in April 2016 (in USD million)

	Foreign currencies/ PLN	Foreign currencies/ Foreign currencies	TOTAL
Foreign exchange market	5 959	3 157	9 116
Spot transactions	1 634	449	2 083
Outright forwards	476	369	845
Fx swaps	3 714	2 244	5 958
CIRS	73	87	160
Currency options	62	8	70

⁴ The figures in this document mainly refer to changes in the average daily net turnover (in USD) at current exchange rates. For information purposes, the changes in turnover at constant exchange rates are shown in Tables 1 and 4 (calculated according to the methodology described in section 7 of Appendix 2). Fluctuations of the US dollar exchange rate vis-à-vis other currencies from April 2013 to April 2016 had a significant impact on the value of turnover (e.g. the USD/PLN exchange rate in April 2016 was around 20% higher than in April 2013).

Related party trades of banks operating in Poland accounted for around 30% of gross turnover in the domestic foreign exchange market and over 40% of the value of operations with non-residents. Such a high share of related party trades may stem from changes in the ownership structure of Poland's banking sector and the growing popularity among credit institutions of the business model, where risk management is centralised at the capital group level. In April 2016, none of the reporting dealers from Poland provided prime brokerage⁵ services in the meaning of the survey methodology.

Table 3. Average daily net turnover in the domestic foreign exchange market by counterparty in April 2016 (in USD million)

	Resident	Non-resident	TOTAL
Foreign exchange market	2 396	6 720	9 116
with financial institutions	1 361	6 656	8 017
with non-financial entities	1 035	64	1 099
Spot transactions	1 026	1 057	2 083
with financial institutions	455	1 035	1 490
with non-financial entities	571	22	593
Outright forwards	457	388	845
with financial institutions	146	377	523
with non-financial entities	311	11	322
Fx swaps	821	5 137	5 958
with financial institutions	731	5 106	5 837
with non-financial entities	90	31	121
CIRSs	60	100	160
with financial institutions	27	100	127
with non-financial entities	33	0	33
Currency options	31	39	70
with financial institutions	1	39	40
with non-financial entities	30	0	30

Note: the values of categories may be slightly different from the sums of values in sub-categories in some rows or columns due to rounding.

1. Spot market

The average daily net turnover in the spot market fell by around 10% compared to the previous survey's figure and in April 2016 amounted to USD 2,083 million. The decrease was largely due to fluctuations of foreign exchange rates since April 2013 (i.e. primarily a substantial appreciation

⁵ Prime brokerage services enable a bank's client to conduct trades in the foreign exchange market using credit lines of the bank that acts as a prime broker. To this end, the bank facilitates trades for their clients in the bank's name with a group of predetermined counterparties. Under this service, the operation consists in a simultaneous execution of a transaction between a counterparty and the prime broker and a transaction between the prime broker and the client. The prime broker acts as an intermediary, becoming a counterparty to both transactions mentioned above.

of the US dollar against the Polish zloty and euro). The turnover in the spot market, expressed in constant exchange rates, was close to the turnover registered in April 2013.

The average daily value of transactions with non-residents in the domestic spot market amounted to USD 1,057 million and was, by around 15%, lower than in April 2013. The activity of domestic non-financial institutions in this market also diminished. Average daily turnover in the customer market fell by around 17% compared to the previous survey's results and in April 2016 amounted to USD 571 million. In this market segment, the average daily value of spot transactions initiated by individual clients for speculative or investment purposes (retail-driven) rose significantly, and in April 2016 amounted to almost USD 44 million. Most of these transactions were operations executed via internet-based currency exchange offices, to which access was offered to clients by the reporting dealers.

The value of transactions carried out by domestic financial entities in the domestic spot market increased – in April 2016 it was 17% higher than in April 2013 and amounted to USD 455 million. Institutional investors, including domestic investment funds which substantially increased their investment in foreign financial markets, had the largest share in the turnover in this market segment.

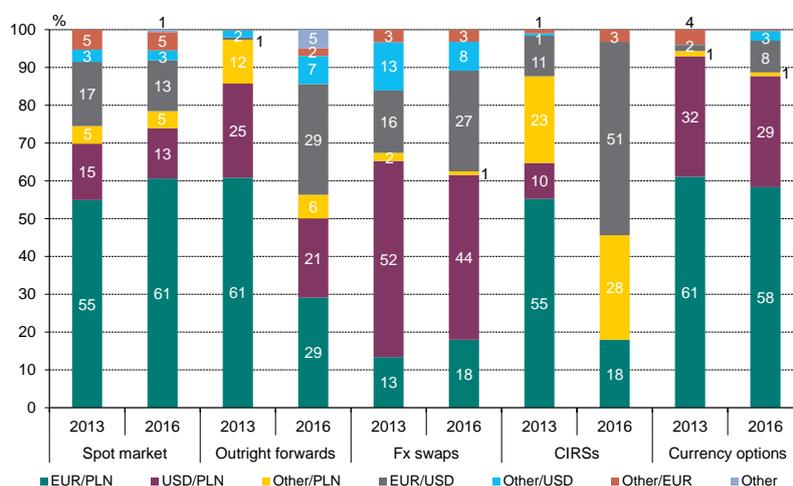
As regards the currency structure of spot transactions, operations involving the Polish zloty prevailed, as their average value in April 2016 amounted to USD 1,634 million (over 78% of turnover in the spot market). The share of the most important currency pair, EUR/PLN, in turnover in the domestic spot market rose, when compared to April 2013, from 55% to 61%. The average daily values of transactions in the domestic EUR/USD and USD/PLN market were similar and for each of those pairs amounted to nearly USD 280 million, i.e. around 13% of turnover in the domestic spot market (per each pair).

The EUR/PLN currency pair prevailed among spot transactions between financial institutions, accounting for almost 60% of all transactions (and 80% of the value of transactions involving the Polish zloty) concluded in this market segment. EUR/PLN was regarded as the main currency pair in the interbank market, and one that conveyed most information on the value of the Polish zloty. The share of USD/PLN transactions in operations between financial institutions was over 11% (15% for transactions involving the Polish zloty). The currency structure of turnover in the customer market (transactions with non-financial entities) roughly reflected the structure of payments in Poland's international trade. Tight economic links with the European Union, and euro area countries in particular, were the most likely reason behind the EUR/PLN currency pair's prevalence (around 72% of the Polish zloty spot transactions). The USD/PLN transactions had an approximately 20% share in turnover in the Polish zloty customer spot market.

Transactions concluded with the use of electronic conversational systems and over the phone in April 2016 accounted for, respectively, around 35% and 16% of turnover in the domestic spot market. The share of transactions executed via electronic broking systems, automatically matching buy and sell orders, in the turnover in this market was around 30%. Simultaneously,

operations concluded on electronic single bank proprietary trading platforms by corporates and high-net-worth individual clients accounted for around 15% of the value of transactions in the domestic spot market. Spot transactions whose terms were agreed via voice brokers were executed rather seldom (they accounted for less than 4% of the turnover). Few domestic banks occasionally used appropriate algorithms that automatically generate buy and sell orders to conclude transactions in the spot market (algorithmic trading). The standard size of a single transaction executed by domestic banks in the Polish zloty market amounted to EUR 1 million or USD 1 million for EUR/PLN or USD/PLN currency pairs, respectively. However, relatively high liquidity of the Polish zloty market allowed concluding transactions of larger value without significantly influencing the Polish zloty exchange rate.

Figure 1. Currency breakdown of turnover in the domestic foreign exchange market in April 2013 and April 2016 (in %)



2. Outright forward market

Since the previous edition of the survey, the liquidity of the domestic outright forward market has increased substantially. In the case of physically-settled forwards, the rise in average daily net turnover from USD 443 million in April 2013 to USD 522 million in April 2016 was primarily driven by intensification of business activity between some of the reporting dealers and their parent banks. In the case of non-deliverable forwards (NDFs, including contracts for difference – CFDs), the average daily net turnover rose from USD 21 million in April 2013 to USD 323 million in April 2016. This change resulted, to a large extent, from the fact that the scope of the data collected in the survey was extended to include information on retail clients' operations executed on internet-based trading platforms. This modification aimed to better reflect the recently observed rapid development of services facilitating retail clients' access to these platforms, via which they could use CFD transactions to speculate on foreign exchange rate changes.

The liquidity of the interbank outright forward market was determined primarily by the activity of the few reporting dealers executing outright forwards on a large scale within their capital groups, and also by transactions concluded with foreign banks in order to hedge against market risk stemming from the above mentioned operations of retail clients executed on internet-based trading platforms (back-to-back hedging). Excluding the uses indicated above, domestic banks very rarely concluded outright forward transactions with other banks, as they preferred synthetic forwards (appropriate combinations of spot transactions with fx swaps) concluded in more liquid segments of the domestic foreign exchange market.

Increased liquidity in the domestic customer outright forward market in April 2016 was mainly related to increased speculative activity of retail clients. In April 2016, the average daily value of operations initiated by retail clients for speculative or investment purposes (retail-driven) amounted to around USD 142 million. However, the amount does not reflect the size of the entire market, as it comprises only those forwards in which a reporting dealer from Poland was formally a counterparty to the transaction or those that were executed between a reporting dealer from Poland and an entity offering its clients access to internet-based trading platforms (e.g. a brokerage house). CFDs concluded by domestic retail clients directly with non-residents or on platforms operated by domestic entities not participating in the survey, including brokerage houses particularly active in this market, were outside the scope of the survey.

Operations with maturities of over one week continued to prevail in the term structure of turnover in the outright forward market (nearly 60% of gross turnover). They were used primarily for hedging against currency risk. Compared to the previous survey, there was a significant increase in the share of transactions with maturities of up to seven days, used principally as short-term speculation instruments (up from less than 21% of gross turnover in April 2013 to over 40% of gross turnover in April 2016). This was related to the aforementioned expansion of internet-based trading platforms for retail clients.

The growing importance of transactions executed on these platforms led to a substantial diversification of the currency structure of turnover in the domestic outright forward market. The EUR/PLN and EUR/USD transactions were prevalent, as their share in the net turnover structure in this market amounted to 29% each. The USD/PLN (21% of the turnover) transactions and CHF/PLN, USD/JPY and JPY/AUD transactions were also of significance. The currency structure of outright forwards in April 2016 was therefore tied to the currency structure of Polish enterprises' payments for trade in goods and services to a lesser extent than in the previous years.

The majority of outright forwards (over 61% of net turnover) were concluded over the phone or with the use of electronic conversational systems. Operations executed via electronic broking systems that automatically match buy and sell orders constituted around 33% of net turnover in the domestic forward market. These systems included, among others, internet-based trading platforms via which retail clients concluded non-deliverable forwards.

This significant rise in demand for CFDs among retail clients, mostly moderately versed in finance and not fully aware of the investment risk, resulted, among others, from the low entry threshold in the CFD market and diverse forms of very intensive and, at times, not fully reliable advertising of investment opportunities by investment firms in this market. The foreign exchange market is characterised by high exchange rate volatility, and investments in this market are very risky. The risk is exacerbated by the leverage used in CFD transactions which enables clients, even with low funds, to execute speculative transactions. The standard margin in CFD transactions amounts to merely 1–4% of the nominal value of a contract⁶ (typically, 10,000 units of the base currency). At the same time, a potential loss on CFD investments may be much greater than the initial margin.

Retail clients who use CFD transactions should take account of the fact that there is severe asymmetry of information in the foreign exchange market. Foreign investment banks that provide services to smaller banks and the largest non-bank financial institutions (including, among others, hedge funds) are monitoring flows generated by their clients and, using this information advantage, take speculative positions. Retail clients have no access to such information, which puts them at a disadvantage from the start and, consequently, translates into a significantly smaller likelihood of earning profit on investment in this market. This is confirmed, among others, by the results of surveys conducted by the Office of the Polish Financial Supervision Authority (UKNF), indicating that only less than 20% of users of internet-based trading platforms record profits on investments in foreign exchange instruments traded on such platforms.⁷

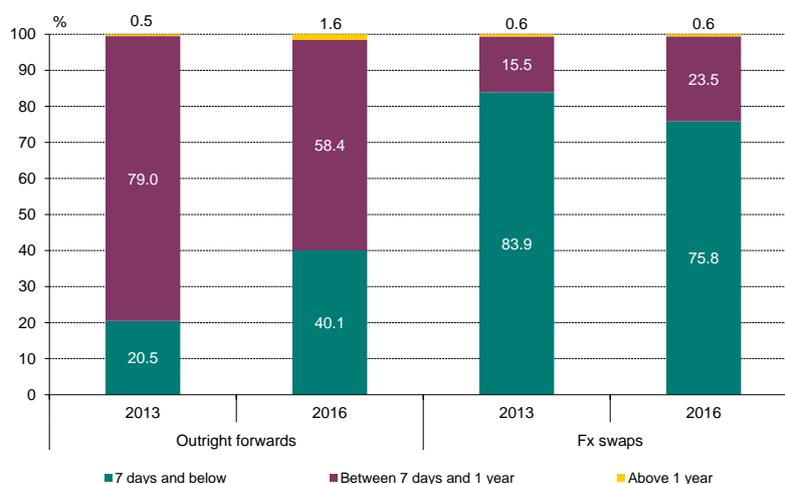
Both Polish and European financial supervisory authorities point to the risk taken by retail clients who are active in the market of these instruments, as well as to irregularities in offering CFDs. In May 2016, the Polish Financial Supervision Authority released guidelines concerning the provision of services by domestic investment firms to clients active in the OTC derivatives market, including the CFD market.⁸

⁶ On 16 July 2015, an amendment to the Act on Trading in Financial Instruments came into force. The amendment set at 1% the minimum margin required from the retail client by an investment firm to execute his or her buy and sell orders for derivatives which are not cleared by a CCP. Thereby, the maximum leverage used by investment firms' clients on internet-based trading platforms was limited to 1:100. However, the maximum level of leverage remains relatively high and risky. Besides, the Act does not apply to foreign investment firms that provide services to some domestic retail investors.

⁷ Communications of 18 April 2012, 2 July 2013 and 8 October 2014 of the UKNF (available on the website) concerning investor performance in the forex market.

⁸ *Wytyczne dotyczące świadczenia usług maklerskich na rynku OTC instrumentów pochodnych*, Polish Financial Supervision Authority, Warsaw 2016, http://www.knf.gov.pl/Images/wytyczne%20OTC_24.05.2016_tcm75-43962.pdf.

Figure 2. Term structure of turnover in the domestic outright forward and fx swap markets in April 2013 and April 2016 (in %)



3. Fx swap market

Fx swaps remained the most liquid instrument in the domestic foreign exchange market, which was mainly owing to their various applications. In April 2016, the average daily net turnover in the domestic fx swap market amounted to USD 5,958 million (an around 30% increase on the April 2013 figure), of which USD 3,714 million were transactions involving the Polish zloty. The turnover growth in the Polish zloty fx swap transactions market may have been driven, among others, by the low cost of funding in currencies of some developed economies (the euro in particular) and a relatively high interest rates' disparity between Poland and these economies. This encouraged non-residents to acquire the Polish zloty in carry trade strategies. Moreover, the historical volatilities of EUR/PLN and USD/PLN exchange rates were greater than in April 2013, which made foreign banks investing in the domestic capital market, including in the domestic Treasury bond market⁹, more inclined towards using fx swaps in strategies reducing currency risk arising from investment denominated in the Polish zloty.

USD/PLN was the main currency pair in the domestic fx swap market. In April 2016, the share of such trades in the market's turnover amounted to around 43% (compared to 52% in April 2013). The significant role of the US dollar resulted from the standard of concluding fx swap transactions which has been used in the global foreign exchange market for years. According to the standard, foreign entities exchange low interest currencies for US dollars, and only then use them to buy local currencies. EUR/PLN and EUR/USD trades accounted for 18% and 27%, respectively, of the turnover in the domestic fx swap market. This was related to, among others, acquiring the euro in fx swaps directly in EUR/PLN transactions or indirectly through a

⁹ The value of domestic Treasury bonds held by foreign banks at the end of April 2016 amounted to PLN 12.4 billion.

combination of USD/PLN and EUR/USD transactions by domestic banks. The growing importance of fx swaps involving the euro in the currency structure of the turnover may have resulted from the low cost of funding for this currency in the euro area money market, which was associated with the ECB asset purchase programme implemented in March 2015.

Transactions with shortest maturities (up to 7 days) prevailed in the domestic fx swap market; they accounted for almost 76% of the market's turnover in April 2016. Such term structure of the transactions stemmed from liquidity management strategies used by market participants. Foreign entities that used fx swaps, among others, to finance their positions in Polish zloty-denominated securities, preferred to roll over short-term fx swaps (mainly T/N and S/W transactions) on a regular basis. Compared to the previous survey, there was a significant increase in the share of transactions with maturities of over 7 days in the turnover in the domestic fx swap market (from 16% in April 2013 to 24% in April 2016). Domestic banks that used the transactions in strategies aimed at mitigating currency risk arising from foreign currency-denominated loans, and foreign entities that applied carry trade strategies were both interested in concluding fx swaps with longer maturities. Furthermore, fx swaps with maturities exceeding 1 month were used for speculation on changes in interest rates or exchange rates, and in strategies aimed at mitigating currency exposures arising from outright forwards concluded with non-bank entities.

The standard size of a transaction executed in the domestic interbank fx swap market amounted to around USD 50 million or around EUR 50 million. Most fx swaps were concluded using electronic conversational systems (46% of turnover in the domestic fx swap market) and over the phone (over 19%). The importance of electronic broking systems automatically matching buy and sell orders, as well as multi-bank dealing systems, significantly increased in the domestic fx swap market: over 17% of net turnover in April 2016 (compared to 8% in April 2013) were transactions concluded with the use of those systems. At the same time, the share of transactions whose terms were agreed by voice brokers decreased in the domestic fx swap market – in April 2016 it was less than 14% of the value of fx swap transactions (compared to 30% in April 2013).

4. Cross-currency interest rate swap market

In April 2016, the average daily turnover in the CIRS market amounted to USD 160 million and was higher by approximately 28% than in April 2013. The domestic banks' continued demand for such transactions resulted from their widespread use of those instruments for hedging against market risk arising from the mismatch of assets and liabilities. Banks were exposed to this risk because of, among others, their portfolios of housing loans denominated in foreign currencies (mainly in the Swiss franc and the euro). Applying hedging strategies which involved long-term CIRS transactions (including forward-starting CIRS) allowed banks to reduce the risk arising from being unable to roll over hedging transactions or having to renew them on very unfavourable terms in the event of turmoil in the global financial markets. Such risk is higher with respect to hedging strategies that involve transactions with significantly shorter maturities, such as fx swaps.

In April 2016, almost all CIRS transactions of domestic banks were concluded with other banks, mostly foreign, or with public sector non-financial entities. Domestic banks active in the CIRS market commonly used Credit Support Annexes in business with foreign banks. Such agreements allowed parties to transactions to establish collateral, mostly in cash or Treasury debt securities denominated in foreign currencies, against counterparty credit risk resulting from all derivatives transactions under such agreements. Therefore, CIRS transactions executed by domestic banks put a much smaller burden on the credit limits imposed on them by their counterparties. The EUR/USD (51% of all transactions), CHF/PLN (28%) and EUR/PLN (18%) currency pairs prevailed in the currency structure of turnover. Less than two thirds (62% of net turnover) of CIRS transactions were concluded over the phone, and around one fourth (26% of net turnover) with the use of electronic conversational systems.

5. Currency option market

In April 2016, as in April 2013, the average daily net turnover in the domestic currency options market amounted to USD 70 million. Activity in the customer market was primarily related to option strategies offered (by almost all of the reporting dealers in Poland) to non-financial enterprises which used them to mitigate currency risk. Activity in the interbank market was mainly associated with opposite transactions (back-to-back hedging) concluded by domestic banks with non-residents to mitigate market risk. The risk arose from the transactions in options concluded with domestic non-financial clients mentioned earlier, and from investment products with embedded options (not covered by the survey) offered to retail clients. Due to the above-mentioned back-to-back hedging strategies, over 95% of all trades with financial institutions were transactions with foreign banks, mainly parent banks of the reporting dealers in Poland. Only few banks were actively managing currency option portfolios (using delta-hedging).

EUR/PLN transactions continued to dominate the currency structure of turnover. In April 2016, EUR/PLN transactions accounted for 58% of net turnover in the Polish zloty options market (61% in April 2013). At the same time, the share of USD/PLN transactions fell from 32% to 29%. The standard size of the at-the-money straddle option strategy in the domestic interbank market amounted to USD 5-10 million or EUR 5-10 million. Slightly over half of the transactions (in terms of value) in currency options were executed with the use of electronic conversational systems, and the terms of almost 40% of the value of net turnover in currency options were agreed over the phone.

Turnover in the OTC interest rate derivatives market

According to the BIS methodology, the OTC interest rate derivatives comprise FRAs, IRSs (including OISs) and interest rate options. In April 2016, the average daily net turnover in these instruments totalled USD 1,558 million and was only half as high as in April 2013. Instruments denominated in the Polish zloty prevailed – in April 2016, the value of transactions in derivatives on the Polish interbank money market rates amounted to USD 1,481 million.

Such a significant decrease in demand for OTC interest rate derivatives resulted mainly from market participants' much weaker and less diverse expectations of NBP interest rate changes in the short and medium term, than in 2013. Speculation on changes of the Polish interbank money market rates was the main determinant of the scale of activity in the market for OTC interest rate derivatives denominated in the Polish zloty, primarily FRA transactions. The fact that the value of trades in those instruments (expressed in US dollars) fell by half was also related to the depreciation of the Polish zloty against the US dollar.

Table 4. Average daily net turnover in the domestic OTC interest rate derivatives market in April 2013 and April 2016 (in USD million)

	2013	2016	Percentage change (at current exchange rates)	Percentage change (at constant exchange rates)
Interest rate derivatives	3 038	1 558	-49	-39
FRA	2 035	836	-59	-51
IRS	992	711	-28	-16
<i>of which OIS</i>	317	31	-90	-89
Interest rate options	10	11	3	17

Note: in some rows or columns, the values of categories may be slightly different from the sums of values in sub-categories due to rounding.

Table 5. Average daily net turnover in individual segments of the domestic OTC interest rate derivatives market in April 2016 (in USD million)

	PLN	Foreign currencies	TOTAL
Interest rate derivatives	1 481	77	1 558
FRAs	836	0	836
IRSs	639	72	711
<i>of which OISs</i>	26	5	31
Interest rate options	6	5	11

The average daily value of transactions with financial entities in the domestic OTC interest rate derivatives market in April 2016 amounted to USD 1,445 million, which was almost 93% of net

turnover in this market. Transactions concluded with non-residents were of high significance, as they accounted for over 82% of net turnover in the market of the above mentioned instruments.

The average daily value of transactions in OTC interest rate derivatives which were concluded in April 2016 and cleared by local and foreign-based CCPs amounted to USD 1,315 million, i.e. around 75% of the gross turnover in those instruments. In April 2016, related party trades of domestic banks accounted for over 20% of the gross turnover and around 26% of the value of transactions with non-residents.

Table 6. Average daily net turnover in the domestic OTC interest rate derivatives market by counterparty in April 2016 (in USD million)

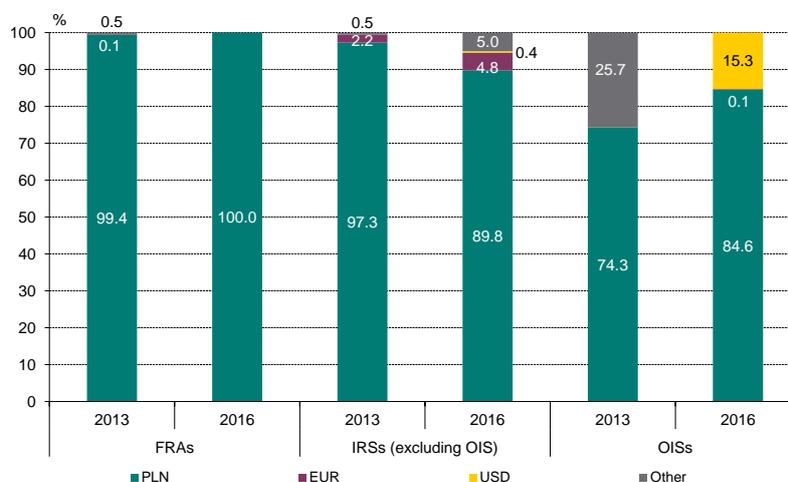
	Resident	Non-resident	TOTAL
Interest rate derivatives	275	1 283	1 558
with financial institutions	239	1 206	1 445
with non-financial entities	36	77	113
FRAs	76	760	836
with financial institutions	76	722	798
with non-financial entities	0	38	38
IRSs	194	517	711
with financial institutions	162	478	640
with non-financial entities	32	39	71
<i>of which OISs</i>	<i>26</i>	<i>5</i>	<i>31</i>
with financial institutions	26	5	31
with non-financial entities	0	0	0
Interest rate options	5	6	11
with financial institutions	1	6	7
with non-financial entities	4	0	4

1. Forward rate agreement market

In April 2016, the average daily net turnover in the FRA market amounted to USD 836 million (a 59% decrease compared to April 2013), and FRAs were almost entirely traded between financial entities. The fall in the turnover was primarily driven by a significant reduction of speculative activity. Few market participants expected the NBP interest rates to be changed in the short and medium term, and these expectations were predominantly relatively weak. The liquidity of this market segment depended largely on the activity of foreign banks whose share in net turnover was 86% (76% in the previous edition of the survey). The average daily value of transactions between domestic banks fell from USD 494 million in April 2013 to merely USD 67 million in April 2016.

In April 2016, domestic banks only concluded FRA transactions on the Polish interbank money market rates. The standard sizes of FRAs were PLN 250 million for transactions based on WIBOR 1M and WIBOR 3M, and PLN 150 million for transactions based on WIBOR 6M.

Figure 3. Currency breakdown of turnover in the domestic OTC interest rate derivatives market in April 2013 and April 2016 (in %)



2. Interest rate swap market

In April 2016, the average daily net turnover in the IRS market amounted to USD 711 million (a 28% decrease compared to April 2013); only a small fraction of that Treasury (less than 5%) were OIS transactions. Almost 90% of the value of all the transactions in this market were instruments denominated in the Polish zloty.

In April 2016, as in April 2013, domestic banks concluded IRSs (excluding OISs) of the average daily value of USD 680 million. The reason behind the continued demand from domestic banks for those instruments was the fact that banks used them both for speculative purposes and to reduce exposures to interest rate risk arising from balance-sheet positions (i.e. mainly Treasury bond portfolios). Transactions with foreign entities prevailed in the domestic market for IRSs (excluding OISs); their share in the net turnover was 75%. As in the case of other OTC interest rate derivatives, the demand of non-financial enterprises for interest rate swaps was insignificant. Trades with domestic non-financial institutions represented less than 5% of net turnover in the domestic market for those instruments. In the currency structure of IRSs (excluding OISs), transactions denominated in the Polish zloty prevailed (90% of the value of transactions registered in April 2016). The standard sizes of 1Y IRSs based on the Polish interbank money market rates executed by domestic banks amounted to PLN 100 million. For operations with longer maturities, it was PLN 50 million (2Y IRSs) or PLN 25 million (5-10Y IRS). In the domestic market, banks also concluded IRSs (excluding (OISs) denominated in CZK, EUR and USD.

Transactions denominated in the Polish zloty were prevalent in the currency structure of OIS trades (85% of the turnover in April 2016). They were used by domestic banks primarily for speculation on the volatility of the O/N rate in the domestic interbank unsecured deposit market or for hedging against changes in the cost of funding in this market. Fine-tuning open market operations used by the central bank led to a significant reduction in the volatility of the

POLONIA rate (in April 2016, it was almost 2.5 times lower than in April 2013), which was the reference instrument for OIS transactions denominated in the Polish zloty. In addition to that, as mentioned earlier, the market participants' expectations of changes in the NBP reference rate were relatively weak. In such an environment, banks (operations between domestic banks prevailed: 85% of net turnover in April 2016) showed little interest in OIS transactions. As the number of the domestic OIS market participants was limited (in this survey, OIS transactions were concluded exclusively in the interbank market, by only four domestic banks), the average daily net turnover in April 2016 amounted to merely USD 31 million, i.e. over 90% less than in April 2013. The standard sizes of OISs with maturity of up to three months was PLN 200-250 million, and of OISs with longer maturities – PLN 100 million.

3. Interest rate option market

The interest rate options market remained the least developed segment of the domestic OTC interest rate derivatives market. In April 2016, the average daily net turnover in interest rate options amounted to USD 11 million, with only six of the surveyed domestic banks reporting trading in those instruments. All transactions in the domestic interbank OTC interest rate options market were executed with non-residents. Exposures to market risk arising from transactions with domestic non-financial clients, and also from options embedded in structured products offered to retail clients (not included in the survey), were mitigated by domestic banks using opposite transactions concluded with foreign banks (back-to-back hedging).

Appendix 1

REPORTING DEALERS IN POLAND¹⁰

1. Alior Bank SA
2. Bank BGŻ BNP Paribas SA
3. Bank BPH SA
4. Bank Gospodarstwa Krajowego
5. Bank Handlowy w Warszawie SA
6. Bank Millennium SA
7. Bank Polska Kasa Opieki SA
8. Bank Zachodni WBK SA
9. BNP Paribas SA Oddział w Polsce
10. Deutsche Bank Polska SA
11. Getin Noble Bank SA
12. ING Bank Śląski SA
13. mBank SA
14. Powszechna Kasa Oszczędności Bank Polski SA
15. Raiffeisen Bank Polska SA
16. Société Générale SA Oddział w Polsce

¹⁰ Institutions operating in Poland which participated in the turnover part of the survey in 2016 (they were referred to as the reporting dealers). The listed banks and branches of credit institutions reported the data on their transactions to Narodowy Bank Polski, which has verified the consistency of the data with the BIS reporting guidelines. On the basis of the data received from these banks, the NBP has calculated the aggregated values of the turnover in the foreign exchange and OTC derivatives markets in Poland. The aggregates for Poland have been reported to the Bank for International Settlements and included in the global results of the survey.

Appendix 2

Reporting guidelines for the survey of the turnover in the foreign exchange and OTC derivatives market consistent with the Bank for International Settlements methodology

1. The scope of the survey

The survey covers all transactions concluded in the foreign exchange and the OTC derivatives markets in Poland. The data reflect transactions in both the interbank, and the customer market (operations with non-bank institutions). Retail transactions with non-financial customers executed in exchanges offices on banks' premises have been excluded from the reporting – included in the statistics are only operations with a negotiated exchange rate and transactions on electronic trading platforms (including forex platforms) or in internet-based currency exchange offices to which access is granted by the reporting institutions, provided that the exchange rates at which clients conclude transactions are directly linked to fluctuations of exchange rates in the wholesale market (and that the exchange rates at which clients conclude transactions are updated with high frequency). Derivatives embedded in securities and banking products fall outside the scope of the survey. The value of bought and sold securities, granted loans and accepted deposits with embedded derivatives has been excluded from the reported data.

According to the Bank for International Settlements methodology, the **foreign exchange market** covers the following types of transactions:

- spot transactions,
- outright forwards, including non-delivery forwards,
- fx swaps,
- cross-currency interest rate swaps (CIRSs),
- currency options (sold and bought, reported separately).

All derivatives with exposure to more than one currency are classified as foreign exchange transactions.

The **OTC interest rate derivatives market** comprises:

- forward rate agreements (FRAs),
- interest rate swaps (IRSs), including overnight index swaps (OIS),
- interest rate options (sold and bought, reported separately).

The survey also covered execution methods applied to conduct trades in the foreign exchange market, focusing in particular on electronic trading systems. Furthermore, the survey included additional information on:

- prime brokerage¹¹,
- deals executed by individual clients for speculative or investing purposes (retail-driven transactions)¹², including on internet-based trading platforms (forex platforms) and in internet-based currency exchange offices,
- the scale of related party trades and transactions executed with institutions using automated systems of placing orders (algorithmic and high-frequency trading),
- the value of transactions which were concluded in April 2016 and cleared by central counterparties (CCPs).

2. Reporting rules

Turnover is defined as the **gross nominal or notional principal amount of all transactions concluded in April 2016, regardless of their clearing or settlement date**. The term “gross” means that each transaction was reported separately. Gross turnover is defined as the absolute total value of all deals contracted. No netting was made between sales and purchases (i.e. the purchase of USD 5 million against the PLN and the sale of USD 3 million against the PLN by the same reporting institution amount to the turnover of USD 8 million). The data on turnover were broken down by currency pairs (e.g. the sale of USD 1 million against PLN 4 million was classified as a transaction in the USD/PLN market with the value of USD 1 million). Cross-currency transactions involving a vehicle currency were reported as two separate deals (e.g. the sale of the US dollars and the purchase of the Danish kroner via the euro market – first, the sale of USD 6 million against the euro, and then the purchase of the Danish kroner against the euro amount in total to the turnover of USD 12 million). Transactions with variable nominal or notional amounts were reported according to the value of the amount as of the trade date.

According to the methodology of this survey, the basis for the reporting was the location of the dealer. This means that the data presented by the NBP include all transactions concluded by dealers operating in Poland, regardless of whether the transactions were booked by a bank

¹¹ See footnote 5.

¹² Such transactions may be executed directly with the client (via the reporting dealer’s internet-based trading platforms or by phone) or through entities specialising in providing services to such clients (in Poland e.g. reporting dealer’s operations with brokerage houses that offer their clients access to internet-based trading platforms organised by them). Data on retail-driven transactions do not include operations executed by retail clients directly with non-residents or with local financial institutions other than the reporting dealers hedging back-to-back with non-residents the market risk resulting from such transactions.

operating in Poland or by its head office abroad (with respect to branches of foreign credit institutions – by its head office abroad).

The data include transactions of reporting dealers concluded with both directly and indirectly affiliated firms (parent entities, subsidiaries, branches), regardless of the jurisdiction where the entity is registered and regardless of the purpose of the transaction (inter alia, they include transactions executed by reporting dealers aimed at mitigating exposure to market risk originating from transactions concluded with their clients – back-to-back hedging). The survey also covers transactions between dealers within the given reporting institution, unless they were conducted solely to facilitate internal book-keeping or facilitate internal risk management.

The turnover values are expressed in USD million. The value of transactions which involved currencies other than the US dollar was converted into US dollars at the trade date exchange rate, e.g. the average NBP rate on the day of transaction or another rate not significantly different from the market rate.

3. Counterparties

Turnover values provided by reporting dealers were broken down for each instrument by counterparty as follows:

- reporting dealers
 - residents
 - non-residents
- other financial institutions
 - residents
 - non-residents
- non-financial customers
 - residents
 - non-residents.

The distinction between transactions with residents and non-residents is made on the basis of the location of the counterparty (i.e. the location from which the counterparty concludes deals with the reporting dealer), and not its nationality.

Reporting dealers were financial institutions that actively participate in both local and global foreign exchange and OTC derivatives markets and/or had active business with non-financial customers. The distinction of the “reporting dealers” category was aimed at the elimination of double counting which arises because transactions between two reporting dealers are recorded and reported by each of them. Around 1,200 reporting dealers from 52 countries, including 16

banks and branches of credit institutions operating in Poland, participated in the survey. The list of the reporting dealers in Poland (banks that provided data on their transactions to the NBP and via the NBP to the BIS) is presented in Appendix 1.

The “other financial institutions” category covers all financial institutions that were not classified as reporting dealers. Transactions concluded in the foreign exchange market with other financial institutions are additionally broken down into:

- Non-reporting banks: commercial, cooperative, investment and state banks and branches of credit institutions not participating in the survey.
- Institutional investors: entities such as investment and pension funds, insurance companies and reinsurance companies.
- Hedge funds and proprietary trading firms: asset management entities that follow a broad range of investment strategies that are not subject to borrowing and leverage restrictions, that often have a different regulatory mandate or are subject to different regulations than “institutional investors” who typically cater to institutions and high net worth individual clients; they simultaneously hold long and short positions in various markets, asset classes and frequently use derivatives for speculative purposes, as well as proprietary trading firms that invest and speculate for their own account (inter alia, specialised firms that employ high-speed algorithmic trading strategies, including high-frequency trading).
- Official sector financial institutions: central banks, sovereign wealth funds, international financial institutions of the public sector (BIS, IMF etc.), development banks (for example, EBRD, EIB) and agencies.
- Other: all financial institutions that cannot be classified as any of the sub-categories above (e.g. leasing companies, factoring companies etc.).

Transactions cleared by CCPs are classified according to original counterparties’ categories (before novation or open offer). A CCP is not treated as a counterparty for the purpose of the survey.

The “non-financial entities” category covers all other counterparties. These are mainly manufacturing corporations or service providers and retail customers.

4. Term structure

The following maturities are distinguished for outright forwards and fx swaps:

- up to seven days (up to one week),
- over one week and up to one year (365 days),
- over one year.

The maturity for outright forwards was calculated as the difference between the date of the initiation of the contract and the delivery date. The initial maturity of fx swaps is calculated on the same basis, i.e. the difference between the trade date of the execution of the deal and the settlement date of the long leg.

5. Currency breakdown

Data on transactions in the foreign exchange market were reported by major currency pairs. This included USD/PLN and EUR/PLN deals, which were reported by all institutions participating in the survey. According to the BIS methodology, foreign exchange transactions involving the Polish zloty, the US dollar, the Euro and the Japanese yen were reported separately in Poland. For single-currency interest rate derivatives, such currencies as, inter alia, the Polish zloty, the Euro, the US dollar, the Japanese yen, the Swiss franc, Pound sterling, the Czech koruna, the Hungarian forint, were distinguished.

6. Execution methods

For the purpose of the survey, the transactions in the foreign exchange market were divided into the following categories of execution methods:

- *Voice Direct* – transactions negotiated over the phone directly between counterparties regardless of the subsequent execution method, not intermediated by a third party,
- *Voice Indirect* – transactions negotiated via a voice broker (e.g. over the phone), intermediated by a third party, regardless of the subsequent execution method,
- *Electronic Direct* – transactions not intermediated by a third party, executed over an electronic communication system or a trading platform (including single-bank proprietary trading systems and electronic communication systems),
- *Electronic Indirect* – transactions executed via electronic broking systems which automatically match buy and sell offers (Reuters Matching/EBS) or trading platforms operated by an entity or entities other than the counterparties (multi-bank dealing systems).

7. Turnover at constant exchange rates

In order to ensure intertemporal comparability of data, the impact of exchange rate movements needs to be eliminated (e.g. from April 2013 to April 2016, the Polish zloty depreciated by approximately 20% vis-à-vis the US dollar). To this end, the data for the previous reporting period have been re-calculated for the estimation of the rate of change of average daily net turnover in relation to the value presented in the previous edition of the survey. For transactions concluded in the foreign exchange market, for both currencies involved in each transaction the value of turnover reported in US dollars was converted into the original currency at the average exchange rate of April 2013. Next, the two amounts were re-calculated into US dollars at the average exchange rate of April 2016. The value of turnover at the constant exchange rate of 2016 was obtained by adding the amounts calculated separately for both currencies of the transaction and dividing the sum by two. A similar procedure was applied for transactions involving single-currency interest rate derivatives.

8. Instruments

The data were collected for the following types of derivatives:

- forwards – in a forward contract, one party is obliged to sell and the other party to buy an underlying instrument at a specified date in the future, at a price agreed on the trade date; forwards are not traded in organised exchanges and their contractual terms do not have to be standardised,
- swaps – in a swap, both parties undertake to periodically exchange financial flows whose value is calculated on the basis of a specified principal amount in accordance with the rules set on the trade date,
- options – transactions that give the right or obliges (depending on whether the reporting dealer is a buyer or seller of the option, respectively) to buy or sell an underlying instrument at a specified date at a rate agreed on the trade date; information on options sold or bought are reported separately; options embedded in securities or credit products were excluded from the survey.

If a transaction consisted of several components – basic derivatives, each component was reported separately. If it was not feasible to separate basic derivatives, then a derivative was classified into an appropriate category according to the type of risk the reporting dealer was most exposed to. All derivatives with exposure to more than one currency were classified as foreign exchange transactions. If a complex derivative had an embedded option, then such a transaction was classified as an option.

Foreign exchange transactions that are the subject of the survey are defined as follows:

Spot transaction

Single outright transaction involving the exchange of two currencies, at a rate agreed on the date of the contract, whose settlement is within two business days. Neither the short leg, nor the long leg of foreign exchange swaps are included in this category, even if their settlement falls within two business days (e.g. T/N fx swap).

Outright forward

Transaction involving the exchange of two currencies on a forward rate agreed on the trade date and settled at some time in the future (later than within two business days). The category also includes non-deliverable forwards – NDFs, which include contracts for differences – CFDs, even if they are closed before the second business day. The long leg of the fx swap transaction, regardless of the booking method, is excluded from this category.

Foreign exchange swap

Contract which obliges its parties to the exchange of two currencies at a specific date at an agreed rate (the short leg) and to a reverse exchange of the same two currencies on a date further in the future (other than the settlement of the short leg) at a rate agreed on the trade date (typically different from the rate applied to the short leg). The amount payable by one party to the other in the long leg is denominated in the same currency as the amount received in the first leg. This category includes both spot/forward and forward/forward fx swaps. All fx swaps (including T/N fx swaps), regardless of the booking method, are reported in this category. This means that the turnover in the fx swap market represents the nominal value of fx swaps, and not the value of settlement flows. According to the reporting guidelines, only the long leg is presented in the turnover statistics. The short leg is not reported at all, i.e. neither as spot nor as fx swap transactions.

Cross currency interest rate swap (CIRS)

Contract which obliges both parties to exchange periodic streams of interest payments (calculated on a specified principal amount) within an agreed period of time which may be accompanied by an exchange of the principal amount (at a previously agreed rate) on the maturity date. Interest payments are in different currencies and are calculated at interest rates specified separately for each of the currencies.

Currency option

Option contract that gives the buyer the right to buy or sell a currency at a previously agreed rate during a specified period of time, obliging the seller (writer) to sell or buy, respectively, the currency from the buyer. This category includes European and American options, as well as all exotic options. Each option being part of an option strategy (e.g. straddle, strangle, butterfly, risk reversal) was reported separately.

Single-currency interest rate derivatives that are the subject of the survey are defined as follows:

Forward rate agreement (FRA)

Contract that obliges both parties to pay interest on an agreed principal amount for a set period of time, beginning in the future. The interest is calculated at rates agreed on the day of the initiation of the contract. In practice, the counterparties settle only the difference between the FRA rate (forward rate set on the trade day) and the reference rate fixed two business days before the settlement date, proportional to the principal amount of the contract.

Single-currency interest rate swap (IRS)

Contract that obliges both parties to swap periodic streams of interest payments (calculated on a specified nominal amount) for an agreed period of time. The interest payments are related to interest rates in one currency (e.g. one rate may be fixed and the other floating, or both may be floating, but based on different reference rates). This category also includes overnight index swaps (OISs), as well as swaps whose principal changes over time (amortising and drawdown swaps).

Overnight index swap (OIS)

A transaction in which the parties agree to swap the difference between the interest payments accrued at a fixed and floating rate. The interest is calculated on an agreed notional amount. The floating rate is tied to a daily overnight reference rate. Net settlement (without the exchange of the notional OIS amount) is effective on the working day following the maturity date.

Interest rate option

Option contract giving the buyer the right to pay or receive a specific interest on an agreed principal for a set period of time, obliging the seller to receive or pay, respectively, this interest.

Interest rate cap

An OTC option that pays the difference between a floating interest rate and the cap rate.

Interest rate floor

An OTC option that pays the difference between the floor rate and a floating interest rate.

Interest rate collar

A combination of cap and floor.

Interest rate swaption

An OTC option to enter into an interest rate swap, giving the right to pay or receive a fixed rate.

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