NBP Narodowy Bank Polski

September 2013

Turnover in the domestic Foreign Exchange and OTC Derivatives Markets in April 2013

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Financial System Department

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. 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 markets. The Bank for International Settlements defines the scope of data reporting and the uniform methodology of data collection. At national level, the survey is coordinated by central banks. In 2013, central banks and monetary authorities of 53 countries participated in the survey. These institutions collected data from around 1,300 entities – the most active financial institutions in the foreign exchange and OTC derivatives markets. The preliminary results of the survey on global turnover in the foreign exchange and OTC derivatives markets have been published by the Bank for International Settlements and are available at its website: http://www.bis.org/publ/rpfx13.htm. Links to studies prepared by other central banks, where the results of the survey for their national markets are presented, can be found at: www.bis.org/statistics/triennialrep/national.htm.

Methodological remarks

In 2013, Poland took part in the Triennial Central Bank Survey of Foreign Exchange and OTC Derivatives Market Activity in its full scope for the fourth time, collecting data concerning all market segments according to the methodology of the Bank for International Settlements. The presented results are fully comparable with the results of the study conducted by Narodowy Bank Polski (NBP) in 2004, 2007 and 2010 (they are available at: http://www.nbp.pl/homen.aspx?f=/en/systemfinansowy/obroty.html). The data collected in the surveys served as the basis for analyses of changes in the volume and structure of the foreign exchange and OTC derivatives markets in Poland in the last three years.

Eighteen most active banks and branches of credit institutions operating in Poland participated in the survey conducted in 2013 (listed in Appendix 1). They provided data concerning the value of transactions concluded in April 2013, in accordance with the reporting forms and guidelines specified by the Bank for International Settlements.[1] The accuracy of the reports provided by banks with the methodology presented in Appendix 2 was verified by the NBP. The aggregates for Poland calculated by the NBP were sent to the Bank for International Settlements and have been included in the global results.

Data for Poland for the years 2013 and 2010 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, fx swaps, CIRS and currency options. The **OTC interest rate derivatives market** includes forward rate agreements (FRAs), interest rate swaps (IRSs, including overnight index swaps – OISs) and interest rate options.

The data on **net turnover** include only those transactions in which one of the parties was a bank or branch of a credit institution operating in Poland, having the reporting dealer status. The term "net turnover" means that the data represent the nominal value of transactions, **adjusted 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 concluded between non-residents** (the instruments denominated in the Polish zloty are traded in the offshore market, mainly in London). The value of turnover for all transactions involving the Polish zloty in detailed breakdowns will be published in a report by the BIS in

[1] The reporting forms used in Poland have been slightly modified by the NBP. Overnight index swap transactions were distinguished. In addition, questions were added relating to the standard transaction sizes in individual segments of the foreign exchange market and the OTC derivatives market.

December 2013. Then, the NBP will also provide the results of the survey in more detailed breakdowns.

The presented data are not adjusted for gaps in reporting. Narodowy Bank Polski estimates that the value of transactions reported by 18 banks and branches of credit institutions represents approximately 92% of the total turnover in the domestic foreign exchange market and 97% in the domestic OTC interest rate derivatives market. Average daily turnover has been calculated according to the number of business days – **in April 2013, there were 21 business days in Poland**.[2] All data are presented **in USD million**, which is consistent with the standard adopted in the survey.

[2] In April 2010, there were also 21 business days in Poland.

Turnover in the foreign exchange market

According to the BIS methodology, the foreign exchange market comprises the spot market, outright-forwards, fx swaps, CIRS and currency options. In April 2013, average daily net turnover in the domestic foreign exchange market amounted to USD 7,564 million and was 4% lower (at current exchange rates) than the value of transactions concluded in April 2010.[3] Transactions that involved the Polish zloty were prevailing in the domestic foreign exchange market. Their average daily value in April 2013 amounted to USD 5,446 million. Over 85% of net turnover in this market were transactions with financial entities. The transactions of banks operating in Poland concluded with affiliated firms constituted at least 25% of the net turnover and at least 33% of operations with non-residents. In April 2013, none of the reporting dealers provided prime brokerage services in the meaning of the BIS survey methodology.

Table 1. Average daily net turnover in the domestic foreign exchange market in April 2010 and April 2013 (in USD million)

	2010	2013	Percentage change (at current exchange rates)	Percentage change (at a constant exchange rate)
Foreign exchange market	**7 848**	**7 564**	**-4**	**0**
Spot transactions	1 955	2 324	19	25
Outright-forwards	318	464	46	54
Fx swaps	5 368	4 581	-15	-11
CIRS	79	125	59	65
Currency options	128	70	-45	-42

Table 2. Average daily net turnover in segments of the domestic foreign exchange market in April 2013 (in USD million)

	Foreign currencies/ PLN	Foreign currencies/ Foreign currencies	TOTAL
Foreign exchange market	**5 446**	**2 118**	**7 564**
Spot transactions	1 730	594	2 324
Outright-forwards	452	12	464
Fx swaps	3 088	1 493	4 581
CIRS	110	15	125
Currency options	66	4	70

[3] Due to a limited impact of changes in exchange rates on the value of turnover; the figures in this document mainly refer to turnover changes at current exchange rates. For informational purposes, the changes in turnover at fixed exchange rates are given in tables 1 and 4 (calculated according to the methodology described in Appendix 2).

Table 3. Turnover in the domestic foreign exchange market by counterparty (average daily net turnover in April 2013, in USD million)

	Resident	Non-resident	TOTAL
Foreign exchange market	**2 230**	**5 334**	**7 564**
with financial institutions	**1 182**	**5 322**	**6 504**
with non-financial institutions	**1 048**	**12**	**1 060**
Spot transactions	1 086	1 238	2 324
with financial institutions	398	1227	1 625
with non-financial institutions	688	11	699
Outright-forwards	451	13	464
with financial institutions	157	12	169
with non-financial institutions	294	1	295
Fx swaps	666	3 915	4 581
with financial institutions	621	3 914	4 535
with non-financial institutions	45	1	46
CIRS	0	125	125
with financial institutions	0	125	125
with non-financial institutions	0	0	0
Currency options	26	44	70
with financial institutions	6	44	50
with non-financial institutions	20	0	20

1. Spot market

The average daily net turnover in the spot market increased by nearly 19% as compared to the previous edition of the survey and in April 2013 amounted to USD 2,324 million, of which USD 1,625 million were transactions with financial institutions, mainly non-residents. The average daily value of the Polish zloty turnover amounted to USD 1,730 million and was higher, by approximately 23%, than in April 2010. There was a surge by nearly 50%, up to PLN 688 million, in the value of transactions in the spot market with non-financial institutions. This was mainly due to an increase in foreign trade over the last three years.[4] Moreover, the development of electronic trading platforms dedicated to corporates and high net worth individuals (private banking clients) may have been conducive to the rise in turnover in this market. A significant increase in transactions with domestic financial entities was also observed (by around 35%) – institutional investors (the category comprising, inter alia, investment funds) had the largest share in the turnover in this market segment. In April 2013, the average daily value of trades

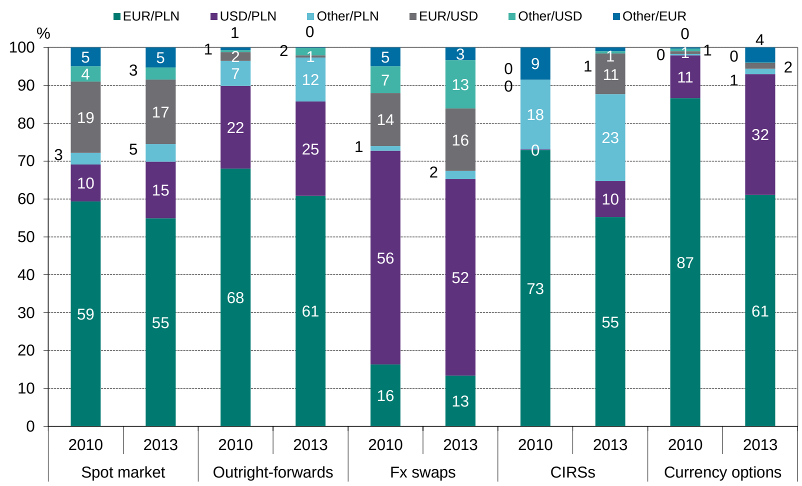
[4] In April 2013, the value of goods and services exports expressed in the US dollar was higher by over 30% than the corresponding April 2010 figure.

initiated by individual clients for speculative or investing purposes (retail-driven transactions) amounted to over USD 20 million. However, in accordance with the survey methodology the data do not include transactions that were concluded by retail investors directly with non-residents or with domestic non-financial institutions not participating in the survey, who were hedging exposures resulting from these operations with non-residents. In the domestic spot market, no transactions were concluded with entities using algorithms to generate buy and sell orders (algorithmic trading).

As regards the currency composition of spot transactions, the share of EUR/PLN slightly decreased (from 59% to 55%). This currency pair remained the prevailing one in the interbank market, and one that conveyed most information on the Polish zloty's intrinsic value. Average daily net turnover in the EUR/USD market amounted to USD 366 million, which represented 17% of the value of operations in the domestic spot market.

The EUR/PLN currency pair prevailed in operations between financial institutions (average daily net turnover in April 2013 amounted to USD 826 million, which was approximately 78% of the spot transactions that involved the Polish zloty). However, there was a significant increase in USD/PLN transactions (from 6.3% in April 2010 to 17.9% in April 2013). 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 to the European Union economy, and the euro area countries in particular, were the most likely reason behind the EUR/PLN currency pair's prevalence (approximately 66% of the Polish zloty spot transactions in the customer market). The USD/PLN transactions' share in the customer market amounted to approximately 23%.

Figure 1. Turnover in the domestic foreign exchange market by currency pairs in April 2010 and April 2013 (%)



Note: the share of the remaining currency pairs amounted to less than 0.02%.

Transactions concluded with the use of electronic conversational systems and by phone constituted around half of gross turnover in the spot market. The share of transactions executed via automated order matching systems (electronic broking systems) amounted to around 30% of gross turnover in the spot market. The last three years witnessed a further increase in the use of single bank proprietary electronic trading platforms by corporates and high net worth individual clients (private banking clients). In April 2013, approximately 16% of all domestic spot transactions were concluded on such platforms, compared to 13% in April 2010. Spot transactions were also executed via voice brokers (4%). The standard value of transactions concluded by domestic banks in the Polish zloty market amounted to EUR 2 million or USD 2 million, for EUR/PLN and USD/PLN currency pairs, respectively.

2. Outright-forward market

Since the previous survey, the average daily net turnover in the outright-forward market increased by approximately half (by 54% when the impact of exchange rate changes is taken into account) and amounted to USD 464 million in April 2013. The increase was driven by a greater demand for these instruments among domestic entrepreneurs (this was the only segment of the domestic foreign exchange market where transactions with domestic non-financial entities prevailed with over 60% of net turnover), and among domestic non-bank financial institutions. As in previous years, banks rarely concluded outright-forward transactions with one another, as they preferred synthetic forwards in the form of spot transactions and fx swaps, executed in more liquid segments of the foreign exchange market.

Operations with maturities of over one week prevailed (nearly 80% of gross turnover). They were primarily used for hedging against the risk of exchange rate changes. Transactions with maturities of one week or less were principally used as short-term speculation instruments. The currency structure of turnover was closely tied to the currency structure of payments for tradable goods. The EUR/PLN transactions were prevalent in the outright-forward market, constituting 61% of net turnover in the domestic outright-forward market (63% of the turnover in the domestic forward market for the Polish zloty). The share of USD/PLN operations in net turnover amounted to 25%.

The majority of all outright forwards (nearly 77%) was executed via electronic conversational systems and by phone. The share of operations concluded on single-bank proprietary trading platforms accounted for approximately 23% of the gross turnover in the domestic forward market. These platforms were mainly dedicated to institutional investors.

In April 2013, the average daily turnover in the domestic market for cash-settled forward transactions (non-deliverable forwards – NDFs, contracts for differences – CFDs) amounted to

USD 21 million. The development of services facilitating retail clients' access to internet-based trading platforms via which they could use such transactions to speculate on foreign exchange rate changes has been observed since the previous edition of the survey. In April 2013, the average daily value of transactions initiated by retail clients for investing and speculative (retail-driven deals) amounted to approximately USD 3 million. However, this amount comprises only those forwards in which a reporting dealer from Poland was formally a party 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). Based on the information collected together with the data for the survey in Poland, it can be estimated that domestic retail clients concluded CFDs of an average daily nominal value (significantly higher than the value of actually involved margin deposits[5]) of at least USD 500 million. These transactions were also concluded directly with non-residents or on platforms operated by domestic entities not participating in the survey which would hedge exposures to the resulting risk either using forward transactions with non-residents or domestic entities not participating in the survey, or using spot transactions.

The low entry threshold in the CFD market in the form of a relatively small initial margin deposit and diverse forms of often very intensive and not fully reliable advertising of investment opportunities by domestic investment firms in this market led to a significant increase in demand for these instruments among retail clients who typically had moderate knowledge of finance and were not fully aware of the investment risk. The foreign exchange market is characterised by high exchange rate volatility and investments in this market are very risky, which is exacerbated by the financial leverage used in CFD transactions. Leverage enables clients with even very low funds to execute speculative transactions. At the same time, due to the leverage effect, potential losses on CFD investments may be higher than the initial deposit. Both domestic and European financial supervision authorities have pointed out the risk taken by retail clients active in the CFD market and to the problem of misselling.[6]

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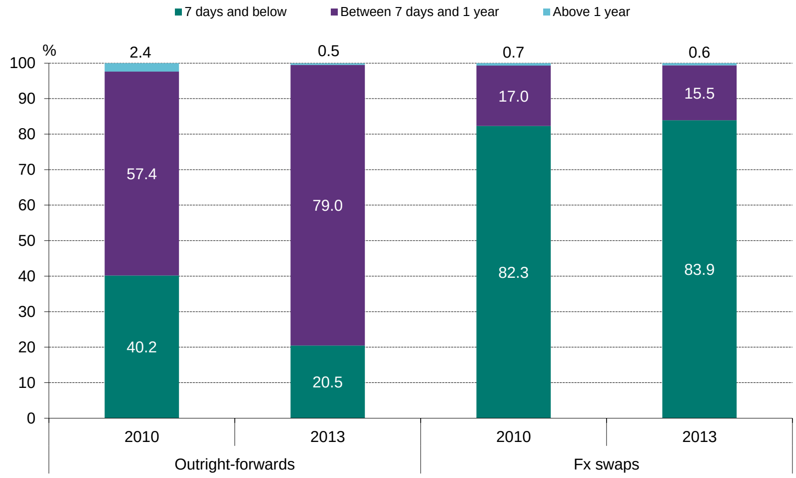
[5] A standard margin deposit in CFD transactions is merely approximately 1-4% of the contract's nominal value (typically 10,000 units of the base currency).

[6] Information of the Office of the Polish Financial Supervision Authority (UKNF) for clients of investment firms on the risk underlying transactions in the forex market, published on 22 June 2011, available (in Polish) at http://www.knf.gov.pl/Images/KNF_CFDs_22-06-11_tcm75-26793.pdf.
Investor warning of 5 December 2011 on trading in foreign exchange (forex), issued by the European Securities and Markets Authority (ESMA), available at http://www.esma.europa.eu/news/Investing-foreign-exchange-forex.
A Communication of 6 March 2012 of the Polish Financial Supervision Authority (KNF) for clients of investment firms on the diversity of financial instruments in the forex market, available at http://www.knf.gov.pl/Images/instrumenty_na_rynku_forex_tcm75-29721.pdf.

Retail clients who use CFD transactions should take account of the fact that there is sever 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, inter alia, hedge funds) monitor flows generated by their clients and take speculative positions, using the arising informational advantage. Retail clients do not have access to such information, which already at the inception puts them at a disadvantage, and, consequently, translates into a significantly smaller probability of generating a profit on an investment in this market.[7]

Figure 2. Turnover in the domestic *outright-forward* and *fx swap* markets by maturities in April 2010 and 2013 (%)



3. Fx swap market

Fx swaps remained the most liquid instrument in the domestic foreign exchange market. High liquidity of the fx swap market vis-á-vis other domestic foreign exchange market segments was mainly due to the various possibilities of using these instruments. Foreign banks used them, inter alia, to manage liquidity in the Polish zloty and for financing their exposures in the PLN-

Investor warning of 28 February 2013 on Contracts for difference (CFDs), issued by ESMA and the European Banking Authority (EBA), available at: http://www.esma.europa.eu/system/files/2013-267.pdf.
Position of 17 July 2013 of the UKNF on the activities of investment firms in the forex market, available (in Polish) at http://www.knf.gov.pl/Images/stanowisko_Forex_tcm75-35192.pdf.

[7] This is confirmed by the results of the survey conducted by the UKNF. They show that only 19% of users of internet-based trading platforms recorded a profit in 2012. Communication of 2 July 2013 of the UKNF on investor performance in the forex market, available (in Polish) at: http://www.knf.gov.pl/Images/KNF_forex_2_07_2013_tcm75-35006.pdf.

denominated Treasury bond market.[8] For this purpose foreign banks borrowed the Polish zloty in the interbank fx swap market, mainly rolling over T/N transactions. Domestic banks used fx swap transactions for, inter alia, hedging currency exposures resulting from foreign currency-denominated housing loans. In addition, financial institutions, including, inter alia, foreign non-bank financial institutions, used these transactions to speculate on interest rate changes in money markets and in strategies aimed at taking currency positions.

In April 2013, the average daily net turnover in the domestic fx swap market amounted to USD 4,581 million (a 15% decrease compared to April 2010), of which USD 3,088 million represented transactions involving the Polish zloty. Due to the increased demand for the Polish zloty that continued in the first half of 2013, as reflected in a relatively high cost of financing with the use of fx swaps, some foreign investors preferred to acquire the Polish zloty in spot transactions, which may have reduced turnover in the domestic fx swap market. The decrease in liquidity in the domestic fx swap market was also driven by a shift in domestic banks' preference relating to currency risk hedging strategies. In order to mitigate the currency mismatch of assets and liabilities they more and more often used long-term EUR/PLN and CHF/PLN CIRS-basis transactions, instead of fx swaps.

In April 2013, the share of USD/PLN trades between financial institutions in the Polish zloty fx swap market amounted to approximately 77% and the share of EUR/PLN transactions – to approximately 19%. CHF/PLN transactions were also concluded; they represented 2.5% of net turnover in this market segment. The dominant role of the US dollar resulted from the fx swap transaction standard which has been used in the global foreign exchange market for years. Domestic banks executed EUR/PLN transactions, mainly with euro area entities from the same capital groups, to avoid additional EUR/USD operations usually executed to obtain the euro necessary to hedge against the currency risk.

The standard transaction size in the domestic fx swap market was USD 40-50 million (or EUR 40-50 million). Most fx swaps were concluded using electronic conversational systems and by phone (approximately 60% of the gross turnover in the domestic fx swap market). The share of transactions executed by voice brokers amounted to less than 30% of fx swaps in April 2013. Banks operating in Poland also used electronic broking systems and mutli-bank dealing systems (approximately 8% of the gross turnover).

[8] According to the Ministry of Finance data, at the end of April 2013 foreign banks held Treasury bonds denominated in the Polish zloty with the value of PLN 33 billion. Their share in the investor structure of those securities amounted to approximately 6%.

4. Cross-currency Interest Rate Swap (CIRS) market

In April 2013, the average daily turnover in the CIRS market amounted to USD 125 million and was higher by approximately 60% compared to April 2010. Thus, the CIRS market saw the strongest increase in turnover compared to turnover recorded in the previous edition of the survey. This resulted from a rise in the number of transactions concluded by domestic banks for the purpose of hedging against currency risk arising from the mismatch of assets and liabilities (associated chiefly with housing loans portfolios denominated in foreign currencies, mainly the Swiss franc and the euro). The strategy of using CIRS transactions, enabled the banks to limit the risk arising from being unable to roll over short-term fx swap hedging transactions during periods of turmoil in the global financial markets or having to renew them at very unfavourable terms. The observed development of this market segment was largely driven by the use of Credit Support Annexes by a larger number of domestic banks in business with foreign banks. Those agreements allowed parties to establish collateral, mostly in cash or Treasury debt securities, for counterparty credit exposures resulting from all derivatives transactions under such an agreement. Domestic banks also used CIRS transactions whose terms had been negotiated even several months in advance (forward-starting swaps).

Nearly all turnover in the domestic CIRS market were trades in the interbank market with foreign banks. The above mentioned currency mismatch of banks' assets and liabilities implied the currency structure of turnover which was dominated by EUR/PLN (approximately 55% of all transactions) and CHF/PLN (23%) currency pairs. EUR/USD (11% of net turnover) and USD/PLN (10%) transactions were also concluded quite often. Over 90% of CIRS deals were concluded via voice brokers or with the use of electronic conversational systems.

5. Currency options market

A further decrease in the average daily net turnover in the currency options market was observed. In April 2013, it amounted to USD 70 million, hence was 45% lower compared to April 2010 and 80% lower than in April 2007. Financial losses on option strategies incurred by some non-financial companies in 2008-2009 led to a sustainable decline in interest in these instruments used as one of the ways to mitigate currency risk. Only several domestic banks continue to offer currency options to non-financial clients, but requirements for potential clients regarding their creditworthiness and collateral are much tighter than in 2008. At the same time, these instruments are only occasionally offered for speculative purposes.

In 2013, only several banks operating in Poland actively managed an option portfolio (using delta-hedging). The majority of domestic banks hedged against the currency risk resulting from option transactions executed with domestic non-financial clients by concluding opposite transactions in the interbank market (hedge back-to-back). Thus, the majority of turnover with financial entities were transactions with foreign banks (approximately 90% of net turnover), including with parent companies of banks operating in Poland.

EUR/PLN transactions continued to dominate the currency structure of turnover. In April 2013, these transactions represented over 60% of the net turnover in the Polish zloty options market. At the same time, there was an increase in the share of USD/PLN options to 32% from 11% in 2010. The standard value of an at-the-money straddle option strategy in the domestic market amounted to EUR 10 million (or USD 10 million). Transactions executed by phone and via electronic conversational systems constituted approximately 80%. Around 8% of currency option transactions were executed via voice brokers.

Turnover in the OTC interest rate derivatives market

According to the BIS methodology, the OTC interest rate derivatives market comprises forward rate agreements (FRAs), interest rate swaps (IRSs) including overnight index swaps (OISs) and interest rate options. In April 2013, the average daily net turnover in these instruments amounted to USD 3,038 million and were almost twice as high as in April 2010. Such a significant increase in demand for interest rate derivatives resulted mainly from market participants' expectations of NBP interest rate changes, as well as a wide variety of these expectations regarding the timing and scale of those changes. Market participants used primarily FRAs to speculate on reference rate changes in the Polish interbank money market.

Interbank transactions constituted over 99% of net turnover, of which over 70% were transactions with non-residents. Some of them were cleared by foreign-based central counterparties (CCPs) – the average daily value of transactions cleared by CCPs amounted to USD 474 million. In April 2013, transactions executed by domestic banks with parties from the same capital groups constituted approximately 10% of transactions in the OTC interest rate derivatives market and approximately 15% of transactions with foreign entities.

Table 4. Average daily net turnover in the domestic OTC interest rate derivatives market in April 2010 and April 2013 (in USD million)

	2010	2013	Percentage change (at current exchange rates)	Percentage change (at a constant exchange rate)
Interest rate derivatives	**1 561**	**3 038**	**95**	**113**
FRA	775	2 036	163	189
IRS	786	992	26	38
of which OIS	260	317	22	32
Interest rate options	0	10	-	-

Table 5. Average daily net turnover in segments of the domestic OTC interest rate derivatives market in April 2013 (in USD million)

	PLN	Foreign currencies	TOTAL
Interest rate derivatives	**2 916**	**122**	**3 038**
FRA	2 023	13	2 036
IRS	893	99	992
of which OIS	236	81	317
Interest rate options	0	10	10

Table 6. Turnover in the domestic OTC interest rate derivatives market by counterparty (average daily net turnover in April 2013, in USD million)

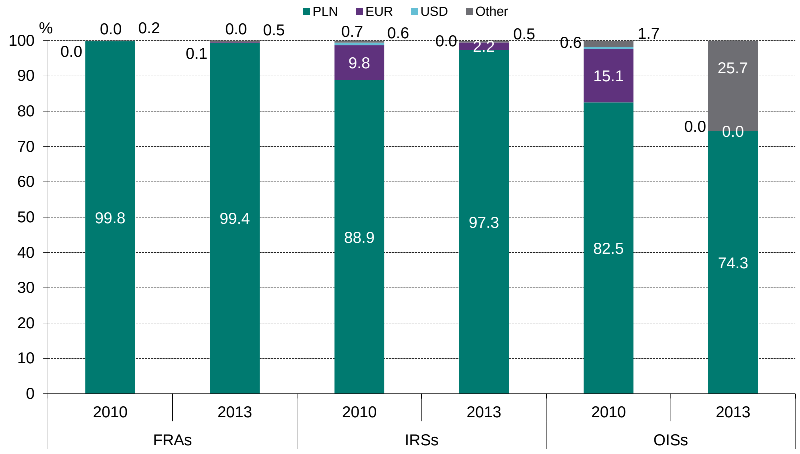
	Resident	Non-resident	TOTAL
Interest rate derivatives	**899**	**2 139**	**3 038**
with financial institutions	873	2 139	3 012
with non-financial institutions	26	0	26
FRA	**494**	**1 542**	**2 036**
with financial institutions	494	1 542	2 036
with non-financial institutions	0	0	0
IRS	**399**	**593**	**992**
with financial institutions	379	593	972
with non-financial institutions	20	0	20
in which OIS	**118**	**199**	**317**
with financial institutions	118	199	317
with non-financial institutions	0	0	0
Interest rate options	**6**	**4**	**10**
with financial institutions	0	4	4
with non-financial institutions	6	0	6

1. Forward Rate Agreement market

The average daily net turnover in the FRA market in April 2013 amounted to USD 2,036 million (a 163% increase compared to April 2010), all of which were transactions between financial entities. The increase in turnover in this market was mainly the result of an increase in speculative transactions, driven by strong expectations of NBP interest rate changes. Liquidity of this market segment depended mainly on the activity of foreign banks whose share in net turnover amounted to 76% in April 2013 (60% in April 2010). The average daily value of transactions executed between domestic banks increased to USD 494 million in April 2013 from USD 307 million in April 2010, which, apart from the above mentioned factors, was due to an increase in mutual credit limits of domestic banks.

Almost all (over 99%) transactions were on reference rates of the Polish interbank money market, since market expectations of NBP interest rate changes, reflected in FRA transactions, were significantly stronger than those relating to interest rates in the United States or the euro area. The standard sizes of FRA trades concluded by domestic banks amounted, as in April 2010, to PLN 500 million for transactions based on WIBOR 1M, PLN 250 million for transactions based on WIBOR 3M and PLN 200 million for transactions based on WIBOR 6M.

Figure 3. Turnover in the domestic OTC interest rate derivatives market by currencies in April 2013 (%)



2. Interest Rate Swap market

The average daily net turnover in the IRS market (including OISs) in April 2013 amounted to USD 992 million (a 26% increase compared to April 2010). Approximately 90% of the value of transactions were interest rate swaps denominated in the Polish zloty. An even higher share of PLN-denominated operations was observed for IRSs other than OISs (97% of net turnover), whose daily average value amounted to PLN 675 million (an increase of 28% compared to April 2010). The demand for these instruments rose in the last three years, as banks used it both for speculative purposes, and to change exposure to interest rate risk arising from balance sheet positions (i.e. mainly Treasury debt securities portfolios).

Transactions with foreign financial entities prevailed. Their share in net turnover in the IRS (without OIS) domestic market amounted to 58%. As in the case of other OTC interest rate derivatives, the demand for interest rate swaps among non-financial clients was small. Trades with domestic non-financial entities represented approximately 2% of net turnover in the domestic IRS (without OIS) market. The standard nominal value of a 1Y IRS transaction based on the reference rate of the Polish interbank money market, executed by domestic banks, amounted to PLN 100-200 million. For operations with longer maturities, it was PLN 50-100 million (2Y IRSs) or PLN 25-50 million (5-10Y IRSs).

In April 2013, OIS transactions, which were used by banks mainly for speculating on the O/N rate fluctuations and hedging against changes in the cost of financing in this market constituted almost 24% of all interest rate swaps. Transactions denominated in the Polish zloty prevailed in the currency structure of OIS trades (a 74% share in the turnover registered in April 2013). Transactions denominated in the Swiss franc were also concluded. The average daily net turnover in the overnight index swaps for which POLONIA was the reference rate amounted to USD 236 million and was higher by approximately 10% compared to April 2010.

The liquidity of this market continued to be limited by the relatively small number of its participants and depended, to a much larger extent than in the previous survey, on the activity of foreign banks – transactions executed with non-residents represented nearly 63% of net turnover (36% in April 2010). No OIS transactions with non-financial institutions were concluded in April 2013. The standard value of a swap with maturity of up to one week amounted to PLN 500 million.

3. Interest rate options market

The interest rate options market remained the least developed segment of the domestic OTC interest rate derivatives market. In April 2013, the average daily net turnover in this market segment amounted to USD 10 million, with only five domestic reporting banks executing transactions in these instruments. Operations with domestic non-financial clients were usually accompanied by opposite transactions concluded with foreign banks for market risk hedging purposes (back-to-back hedging).

Appendix 1

REPORTING DEALERS IN POLAND[9]

	Name	SWIFT code
1.	Alior Bank SA	ALBPPLPW
2.	Bank BPH SA	BPHKPLPK
3.	Bank Gospodarki Żywnościowej SA	GOPZPLPW
4.	Bank Gospodarstwa Krajowego	GOSKPLPW
5.	Bank Handlowy w Warszawie SA	CITIPLPX
6.	Bank Millennium SA	BIGBPLPW
7.	Bank Polska Kasa Opieki SA	PKOPPLPW
8.	Bank Zachodni WBK SA	WBKPPLPP
9.	BNP Paribas SA Oddział w Polsce	BNPAPLPX
10.	BRE Bank SA	BREXPLPW
11.	Deutsche Bank Polska SA	DEUTPLPX
12.	Getin Noble Bank SA	GBGCPLPK
13.	ING Bank Śląski SA	INGBPLPW
14.	Nordea Bank Polska SA	NDEAPLP2
15.	Powszechna Kasa Oszczędności Bank Polski SA	BPKOPLPW
16.	Raiffeisen Bank Polska SA	RCBWPLPW
17.	RBS Bank (Polska) SA	ABNAPLPW
18.	Société Générale SA Oddział w Polsce	SOGEPLPW

[9] Institutions operating in Poland which participated in the turnover part of the survey in 2013 (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 consitency 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. Survey coverage

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 – only operations with a negotiated exchange rate are included in the statistics.

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

- spot transactions,
- outright-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 – OISs,
- 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 brokered transactions[10] and deals executed by individual clients

[10] Prime brokerage services enable the bank's client to conduct trades in the foreign exchange markets, using credit lines of the bank that acts as a prime broker. The bank facilitates trades for their clients in the bank's name with a group of predetermined counterparties. Under this service, the operation

for speculative or investing purposes (retail-driven transactions),[11] including on internet-based trading platforms, as well as the share of transactions cleared by central counterparties (CCPs) and executed with institutions using automated systems of placing orders (algorithmic and high-frequency trading).

2. Reporting rules

Turnover is defined as the gross nominal or notional principal amount of all transactions concluded in April 2013, 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 krones via the euro market – first, the sale of USD 6 million against the euro, and then the purchase of the Danish krones 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 operating in Poland or by its head office abroad.

The data include transactions of reporting dealers concluded with affiliated firms (parent enitities, 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

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 the counterparty to both transactions mentioned above.

[11] 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).

between dealers within the given reporting institution, unless they were conducted solely to facilitate internal book-keeping and 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

Tunover 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 corporate clients. 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 1,300 reporting dealers from 53 countries, including 18 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. In this edition of the survey, 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.).

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

4. Maturities

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 currency pairs. Compared to the previous editions of the survey, the list of currency pairs subject to mandatory reporting by all reporting dealers participating in the survey worldwide has been expanded. In addition to the major world currencies, USD/PLN and EUR/PLN pairs have been added to this group. According to the BIS methodology, 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. Data 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 2010 to April 2013, the Polish zloty depreciated by over 10% vis-á-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 2010. Next, the two amounts were re-calculated into US dollars at the average exchange rate of April 2013. The value of turnover at the constant exchange rate of 2013 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 cash-settled forwards (NDFs, CFDs). 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 that gives 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 specific 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 contract, giving the right to pay or receive a certain fixed rate.

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