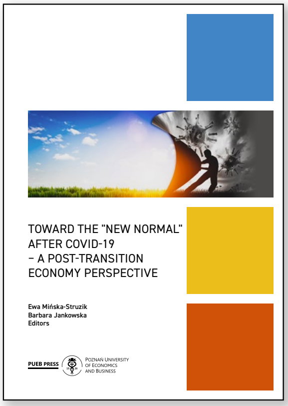

TOWARD THE "NEW NORMAL" AFTER COVID-19 – A POST-TRANSITION ECONOMY PERSPECTIVE

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Editors

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5. Challenges in currency derivatives management in the OTC market in Poland during the Covid-19 pandemic

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Abstract

Purpose: The aim of the chapter is to analyze the impact of the Covid-19 pandemic and market volatility increase on risk management in the OTC derivatives market in Poland.

Design/methodology/approach: The chapter describes the legal background of derivatives trading with non-financial enterprises, then identifies the main risks, and discusses possible actions of market participants. In this regard, the study conducts volatility analysis based on selected market data.

Findings: Due to volatility increase and the resulting negative valuation of non-matured currency derivatives by Polish exporters, margin call clauses were triggered, entailing the need to post additional collateral or prematurely close contracts. The described situation is particularly difficult when the pre-settlement limit is fully utilized on deal date, usually in the case of long-lasting large open exposures in non-flexible transactions.

Research implications: To determine market risk, studies often apply the VaR approach. In this way, the specific amount of risk is analyzed on a daily basis and used by banks both to determine the maximum amount of the contract and to control pre-settlement risk. Apart from many advantages of the VaR approach, there are some drawbacks, especially related to volatility estimation, which usually relies on historical market fluctuations. It may cause that the risk will not be properly valued under crisis conditions. In such situations, supplementary methods should be also implemented (stress tests).

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Practical implications: Under high market volatility, preventive actions should be prepared in advance, including treasury limit increase, additional funds for collaterals, or contracts modification (flexible products should be considered).

Originality and value: The study covers a challenge that banks face, which is rarely described in professional literature but very serious for bank management. Under normal market conditions, if the margin call clause appears and no additional collateral is posted, the transaction should be closed to limit the counterparty's loss. However, this type of action during the pandemic may impose the risk of force majeure. From the company perspective, using such instruments threatens their early settlement and the need to finance closeout amount.

Keywords: currency risk management, OTC derivatives, pre-settlement limits.

5.1. Introduction

The coronavirus outbreak resulted in volatility increase of financial instruments in many markets, including the currency market. The PLN value dropped sharply against main currencies in a short period of time thus complicating the market risk estimation even more, not to mention deepening the negative value of already concluded derivatives for the sale of foreign currencies[1] (applies to contracts performed by Polish exporters, mainly on the EUR/PLN currency pair). Due to negative derivatives valuation, the use of required collaterals in the OTC market increased. In many cases, margin call clauses were triggered, entailing the need to post additional collateral to supplement the required collateral. While the issue is quite well recognized in the literature on financial risk, it remains a practical challenge, especially in times of the pandemic.

The literature on market risk estimation indicates the shortcomings of various approaches based on historical fluctuations used to project future changes (such as VaR, see Best, 2000), hence some indicate the need to apply additional supplementary methods (such as stress testing, see e.g. Committee of European Banking Supervisors, 2009; Bank for International Settlements, 2010; European Banking Authority, 2018). Under normal market conditions when the treasury limits are fully utilized, the margin call clause appears and if additional collateral is not posted, the transaction should be prematurely closed and cleared. This action is aimed to limit the counterparty's loss from currency derivatives to the amount of the established treasury limit. However, this type of action during the pandemic may impose the risk of effective force majeure in a possible lawsuit for payment. In such a situation, management dilemmas emerge whether to close the transaction prematurely unilaterally and expose oneself to reputational risk – we consider here a public trust institution – and potential lawsuits or whether to risk a huge loss

[1] In line with the payoff diagram for short position in forward contract.

without closing the transaction in the event of further PLN weakening and deepening of the negative contracts value. How much is the institution able to accept when the market volatility increases even more? That also depends on the financial situation of the counterparty, transaction type, tenor, and complexity.

On the other hand, from the perspective of a company using the instruments in question to manage exchange rate risk, there is an increase in emotions due to the real threat of their early settlement in this situation and the need to immediately finance exchange rate differences (closeout amount). In crisis conditions, the company usually lacks funds for the day-to-day operations, not to mention resources for additional contracts collaterals. A financial institution is responsible for derivatives valuation notification, but a forced closing of the transaction is arbitrary and highly problematic for both parties, as it may initiate an enterprise bankruptcy process, and this is not what an institution bestowed with public trust is expected to do in crisis times.

The study discusses the issue in detail and presents selected activities undertaken by Polish commercial banks in this regard in the period of March to November 2020.

5.2. Pre-settlement and settlement risk

A financial institution allowing currency derivatives trading considers at least two risk types in risk management processes, namely pre-settlement and settlement risk (see Wybieralski, 2013). The key role in this distinction plays the timing when a specific type of risk arises. Thus, the pre-settlement risk is related to the period starting from the trade date (deal date) to the agreed settlement date (value date), while the settlement risk relates only to the cash flows at the contract maturity date. The settlement risk is defined as the possible loss that a given institution concluding currency derivatives is exposed to on a settlement day. This risk is mitigated by making the transaction settlement on value date conditional, namely the settlement depends on the provision of appropriate funds on the bank's client account in the first place; what applies here is the delivery vs. payment principle.[2] On the other hand, pre-settlement risk is defined as the potential loss of a financial institution over the lifetime of a certain contract. The loss results from a transaction value decline due to fluctuations in market exchange rates. This risk is usually managed by setting a collateral in different forms. It can be e.g. any securities or cash in the form of initial and variation margins. The bank can also grant a pre-settlement treasury limit (the same type as for regular credits: secured or unsecured

[2] The bank may also offer a settlement limit.

ones).[3] Market fluctuations affect the concluded forward contracts in positive or negative way. In the case of pre-settlement risk management, an unfavorable valuation scenario is primarily analyzed, very often using the VaR method. First, to assess the risk associated with a planned transaction, one must estimate the volatility range of underlying assets in a given time frame; in the period from the conclusion to the maturity date. In practice, financial institutions using various methods of estimating market volatility determine the margin rates[4] that reflect potential variability over time with a given confidence level (often 95–99%). We may notice that margin rates usually differ among individual institutions, which is mainly due to the different method of volatility estimation (see Figure 1).

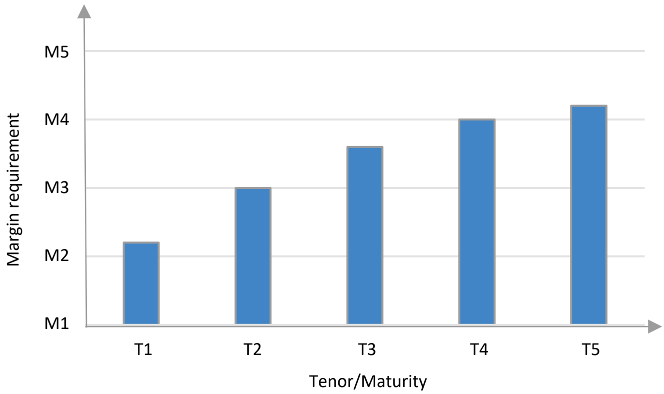

Figure 1. Margin requirement depending on contract's tenor
Source: Own elaboration.

Nevertheless, the margin rates usually increase for contracts with longer maturity (tenor), assuming that the volatility in longer time frames may be higher than in shorter ones. The multiplication of the notional contract value and margin rate determines the VaR amount. The VaR amount calculated this way uses (reduces) the amount of the granted treasury limit, therefore restricting the possibility of opening new exposures in derivatives at the same time. After conclusion, the contract's present value is constantly updated (Mark-to-Market). Moreover, market

[3] Bankers very often subtract the amount of default risk form client's total approved credit and grant so-called treasury limits to deal with this exposure (for more information on treasury limits see Rekomendacja A). Under the ISDA Master Agreement, a Credit Support Annex is signed that regulates and defines the credit support (collateral) for OTC derivatives. A threshold amount is indicated that is the reference value of the Mark-to-Market of contract above which collateral has to be posted. In other words, the threshold amount is the level of unsecured exposure each counterparty will allow the other before any margin call is made (Deloitte, 2018).

[4] Or risk factors or margin requirements or margin parameters.

valuation affects the treasury limit utilization positively or negatively. Therefore, both the potential loss (based on VaR approach) and the present value of all outstanding contracts jointly determine the value of pre-settlement risk, and they are reflected in the treasury limit utilization. Due to this mechanism, one may manage the nominal exposure of the transaction and the risk as well. Considering the free amount of treasury limit and appropriate margin rates, the maximum exposure in forward contract can be determined. On the other hand, the margin call clause should be triggered at the latest when the current valuation of all outstanding transactions reaches the level of the treasury limit amount.

5.3. General terms and conditions of the bank's cooperation on derivatives with a non-financial enterprise

A prerequisite for concluding a transaction usually means the opening by the bank's counterparty of a settlement account and signing the applicable master or individual agreement for cash and derivative transactions (along with familiarization with relevant documents, see Wybieralski, 2016). The transaction conclusion occurs when there is agreement on key parameters of the contract such as the type of transaction, base currency purchase/sale, base and non-base currency amounts, settlement day, and forward rate.[5] The payments resulting from the concluded transactions are settled by debiting or crediting the settlement account to which the bank is granted a relevant power of attorney. If there are insufficient funds on the settlement account on the settlement date, the bank may debit the current account causing overdraft (or make a deduction from the amount of the established collateral or settle it against the loan granted by a separate agreement). In order to calculate the transaction collateral or determine the compensation amount for non-matured liabilities as part of early termination of agreement or transaction, the bank valuates the net present value of the transaction portfolio based on the current market prices. The valuation amount is usually determined using one of the following methods: (i) net present value of all outstanding contracts (equal to the sum of discounted nominal values of receivables and liabilities arising from the transaction portfolio), or (ii) the value of reverse transactions concluded on the valuation date in order to close a position under the transaction portfolio, provided that such transactions may be concluded on the valuation date. In order to mitigate the risk resulting from transactions concluded with the client, the bank reserves the right to request the counterparty at

[5] The products availability is based on the result of suitability assessment questionnaire conducted in accordance with MIFID II (see Dyrektywa 2014/65/UE, Rozporządzenie 600/2014, Rozporządzenie 2017/565).

any time to establish appropriate collateral and to provide additional collateral up to the value of the required collateral. The required collateral amount is set in PLN and should cover both negative net present value of all outstanding contracts (MtM) and risk value indicated by the VaR amount. On the other hand, the pre-settlement limit amount reduces the required collateral. However, if the negative value of all outstanding transactions amounts to the pre-settlement limit amount and there is no additional collateral deposited, the transaction should be prematurely closed. The bank sets the treasury limit amount upon financial and legal analysis of client's situation. Usually, bank reserves itself the right to change the limit of the amount at any time in the event of a change in the financial and legal situation of the client. If the bank does not set a limit for the customer then for the purposes of calculating the collateral, it is assumed that the limit amount is zero. A customer who has at least one non-matured transaction receives a report on collaterals at least once a month, which contains the value of the customer's collateral in PLN.

5.4. Market volatility increase as a result of the Covid-19 pandemic and its consequences

The margin call clause execution is especially difficult during the pandemic because in most agreements and general terms describing both parties cooperation, there is often a point indicating possible actions under force majeure. In the event of force majeure in which the parties will be unable to perform obligations resulting from transactions concluded due to circumstances for which the parties are not responsible, the transaction becomes invalid or its execution would result in violation of law. The affected party usually has the right to withhold the settlement of mutual considerations arising from the transaction.

On March 20, 2020, an ordinance of the Polish Minister of Health on the announcement of the pandemic in Poland in connection with SARS-CoV-2 virus was published (Rozporządzenie, 2020).[6] On the financial market, the outbreak of the pandemic resulted in the weakening of the Polish zloty at that time, among others on the EUR/PLN currency pair, and an increase in market volatility (measured by Moving Standard Deviation or Average True Range). In the currency options, the market-implied volatility increased, which indicated specific expectations of market participants regarding future fluctuations (see Figure 2 and 3).

[6] This regulation introduced various types of restrictions and orders. The former concerned the way of moving, prohibiting the sale of certain items (i.e. masks, goggles), along with the functioning of certain institutions or workplaces, organizing shows, and other gatherings of people. The order concerned the provision of real estate and land provided for by anti-epidemic plans.

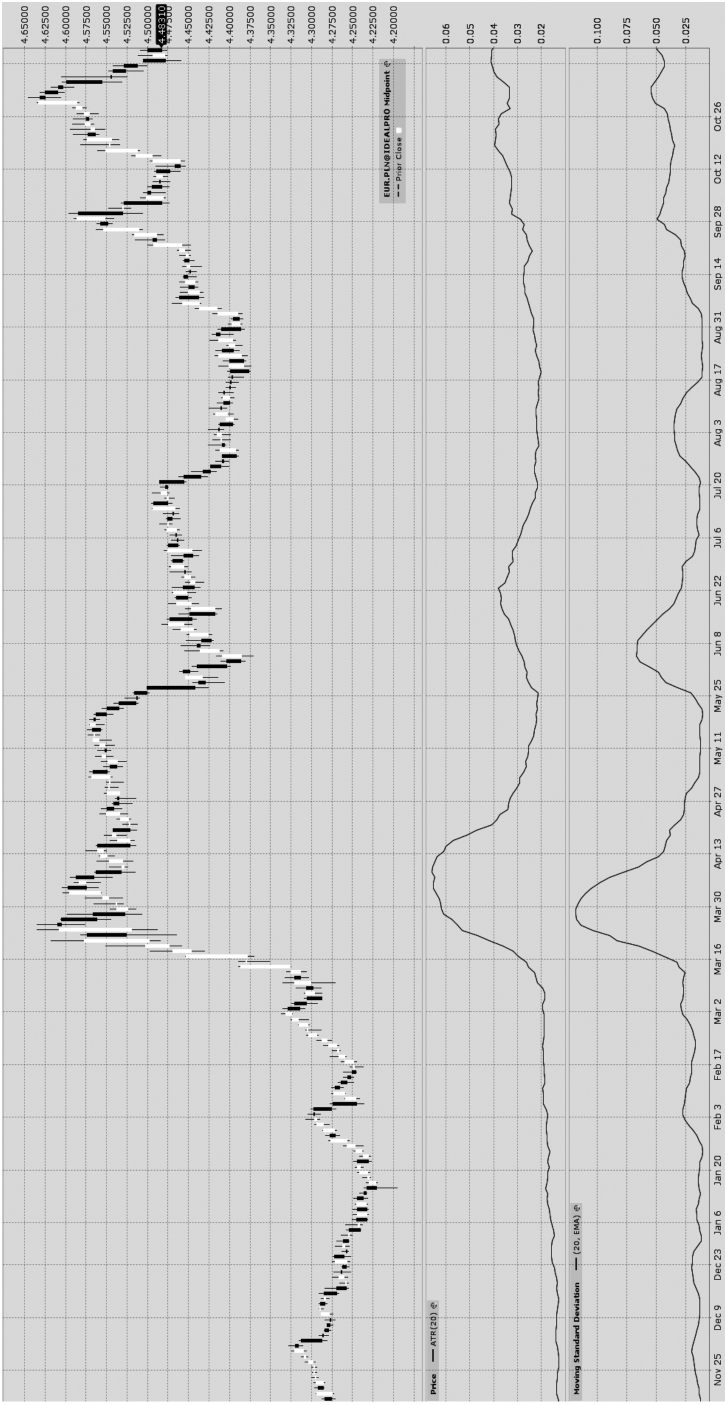

Figure 2. EUR/PLN, daily candlesticks, 2019/11/16–2020/11/16
Source: Own elaboration of data from interactivebrokers.com.

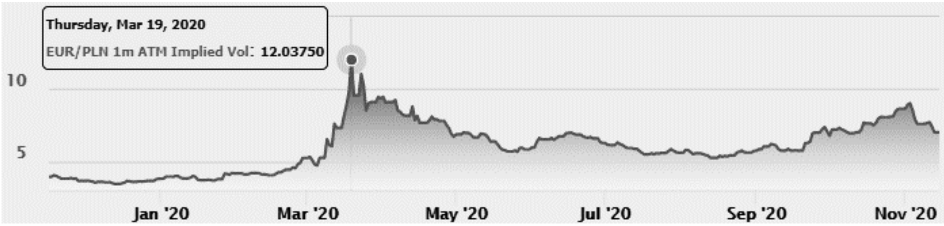

Figure 3. EUR/PLN 1M ATM Implied Volatility (2019/11/16–2020/11/16)
Source: Own elaboration of data from IPA Data Monitor (www.superderivatives.com).

A noticeable increase in market volatility as a result of the Covid-19 pandemic outbreak triggered the margin call clause for selected banks's clients. The mentioned issue concerns entrepreneurs selling foreign currency in forward contracts, i.e. Polish exporters, concluding especially long-term non-flexible transactions or involving asymmetric contracts. Due to the volatility increase in the FX market, the treasury limit was fully utilized in the case of selected customers of Polish banks. They received notifications on contracts valuation and reports on collaterals that pointed out the need to provide additional collateral and supplement the required collateral (margin call clause appears). This is a situation recognized in the literature but, in practice, it is always challenging. Similar problems appeared in the financial crisis of 2008–2009, but that crisis was derived from financial market and the current one stems from health endangerment (Sobański, 2020). However, the problem is the same, namely how to proceed in the case of no response to the margin call under a force majeure event. In financial institutions that enable currency risk management with derivatives under increased market volatility, additional measures have been taken, in particular:

- the suspension of decisions regarding the forced/early closure of transactions in the case of failure to deliver eligible collateral in time or no additional collateral posted;
- the daily notification of collaterals report;
- the acceptance of partial supplementation of the collateral required in cash;
- applying for the increase of the pre-settlement limit amount;
- the analysis of the client's financial situation based on current data;
- monitoring the method of transaction settlement (net/gross mode);
- allowing unsettled transactions to be postponed (roll over);
- conversion to flexible transactions (enabling participation in positive market developments).

The activities of a general nature also include updating the margin rates/risk factors that result in an increase in the higher requirements of collateral for new and existing transactions.

5.5. Conclusions

Foreign exchange risk management – both in banks and non-financial enterprises – is particularly important under increased/high market volatility, and it is additionally complicated in the longer time frame. Hence, it is important to remember about possible challenges and discuss the mechanisms that may arise in the OTC market, especially during the pandemic.

In order to determine the amount of pre-settlement risk related to concluded transactions, both estimated volatility and present value of non-matured contracts are taken into account. Calculated this way, the amount of risk is analyzed daily. The mechanism is used in banks both to set the maximum amount of the contract and to control pre-settlement risk. There are many advantages of discussed mechanism however there are also some drawbacks especially related to the estimation of future volatility. Usually the estimation of this parameter is based to some extent on historical data, assuming repetition in the future. This means that in crisis conditions characterized by higher volatility, the risk will probably not be properly valued. The described situation is particularly difficult when the pre-settlement limit is fully utilized on deal date; usually in the case of a long-lasting large open exposure in transactions with fixed prices. Hence, it is always worth carrying out an additional sensitive analysis in search for exchange rates at which the available treasury limit will be fully used and the margin call clause would appear. Then, different preventive actions can be prepared in advance, including the application for a treasury limit increase, the preparation of funds to provide additional collaterals, or the partial modification of already concluded contracts. Appropriate currency risk management in financial instruments selection is particularly important. In this context, flexible products – that allow for participation in positive market developments – characterized by a different risk profile and lower impact on treasury limit utilization should be particularly considered. While there is a provision in master agreements regarding additional collaterals posting when margin call appears, there is usually an exception concerning a force majeure event. This should be taken also into account, especially under crisis conditions such as a pandemic outbreak.

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