## **EXCHANGE RATE RISK INSURANCE**

International trade is a very dynamic business activity connected to all sorts of risks due to its transnational character. Doing business across national borders carries additional risks compared to a business that operates on a single national market. These additional risks include differences in legal regimes and business climate, different currencies, business language differences, cultural differences of businessmen, etc. That is why many business authors see internationalisation of a company as a big leap forward in its business development, but also connected to greater risks. But greater risks are almost always connected to greater profits, and that is the main stimulation of companies to do business abroad.

International businesses usually face two groups of risks: commercial risks and non-commercial risks. Commercial risks are connected to the economic factors of business operations and can include risks of lost payments, bankruptcy risks, foreign exchange rate risks, etc. All of these risks are a part of normal business activity, and companies are able to successfully deal with them. Non-commercial risks, in contrast, are based on non-economic factors like political, cultural, ecological, etc. These risks are more unpredictable and are not directly linked to a business activity, but their effects on international business activity can be significant. Many companies are not prepared and able to avoid and survive noncommercial risks, and the help of other institutions, like banks, is absent in the case of these risks. On certain occasions, states are prepared to help their companies deal with non-commercial risks. Examples of this help are financing and insurance of export credits by state export credit agencies.

But the greatest risk in international business comes from exchange rate flactuations that couses sevier risk. If a company earns a profit in international business in one currency, it can siverely decrease this profit, or even have a loss, in exchanging the profits to another currency, due to a high decrease of value of the first currency. We call this risk exchange rate risk.

In our chapter, we will define exchange rate risk and present the literature review on this subject. We will also describe macroeconomic, as well as microeconomic, instruments that can help companies to be insured against exchange rate risks in international trade.

### **1. EXCHANGE RATE RISKS IN INTERNATIONAL TRADE**

One of the risks associated with foreign trade is the uncertainty of future exchange rates. The relative values of the two currencies could change between the time the business deal is concluded and the time payment is received. If companies are not properly protected, a devaluation or depreciation of the foreign currency could cause them to lose money from this international business deal. The United States International Trade Administration defines foreign exchange risk as the exposure to potential financial losses due to depreciation of the foreign currency against the U.S. dollar.<sup>443</sup> Foreign exchange risk refers to events abroad that affect the net income of a domestic enterprise and can affect nearly all enterprises in a global economy. Foreign exchange risk is a wider term used to cover all the foreign transactions that can bring a risk to a company's operation overseas, for example, a recession in a foreign market that adversely affects sales of domestic vendors to foreign buyers.<sup>444</sup> But the main cause of this general risk is a change in the exchange rate of currencies.

Exchange rate risk refers to the risk that a company's operations and profitability may be affected by changes in the exchange rates between currencies. The notion of foreign exchange risk is limited here to financial transactions involving two or more currencies. The general definition of exchange rate risk is that it "relates to the effect of unexpected exchange rate changes on the value of the firm"<sup>445</sup>.

Exchange rate risk consists of several factors:

- Transaction exposure, which arises from the effect that exchange rate fluctuations have on a company's obligations to make or receive payments denominated in foreign currency, and this type of exposure is short-term to medium-term in nature;
- Translation exposure arises from the effect of currency fluctuations on a company's consolidated financial statements, particularly when it has foreign subsidiaries, and this type of exposure is medium-term to long-term;
- Economic (or operating) exposure is caused by the effect of unexpected currency fluctuations on a company's future cash flows and market value and is long-term in nature. The impact can be substantial, as unanticipated

<sup>443</sup> US International Trade Administration, www.trade.gov/foreign-exchange-risk

<sup>&</sup>lt;sup>444</sup> Mange, J. I. (2000). Measuring Foreign Exchange Risk in Insurance Transactions. North American Actuarial Journal, 4(2), pp. 88-100, doi: 10.1080/10920277.2000. 10595905

<sup>&</sup>lt;sup>445</sup> Madura, J. (1989). *International Financial Management*. 2<sup>nd</sup> ed., St. Paul, MN: West Publishing Company.

exchange rate changes can greatly affect a company's competitive position, even if it does not operate or sell overseas, but it imports its inputs.<sup>446</sup>

We can calculate exposure to exchange rate risk in several ways. One is using regression, where the value of a foreign asset or overseas cash flow fluctuates as the exchange rate changes. A regression analysis of the asset value (P) versus the spot exchange rate (S) should produce the following regression equation:

$$P = a + (b * S) + e,$$

where: P - Asset value, A – regression constant, B – regression coefficient, S – spot exchange rate and E – random error.

The regression coefficient b is a measure of economic exposure and measures the sensitivity of the asset's dollar value to the exchange rate.<sup>447</sup>

$$b = \frac{Cov(P,S)}{Var(S)}$$

Multinational firms are participants in currency markets by virtue of their international operations. To measure the impact of exchange rate movements on a firm that is engaged in foreign-currency denominated transactions, the other methodology is used - value-at-risk (VaR) from exchange rate moves.<sup>448</sup>

Goverment tend to create stable business environments in order to create jobs and draw foreign investment. In some countries they tend to adopt fixed exchange rates or even pay premiums to importers on the excange rate they receive. But all these measures require a lot of financial means that many countries lack. That is why many of them have turned to international organisations for help.

In order to decrease risks in international trade, countries have agreed to establish an international economic organisation as an important international legal instrument. In the area of international trade, the most significant international intergovernmental organisation is the World Trade Organisation (WTO). The basic principles of the WTO guarantee non-discrimination and predictability in

<sup>&</sup>lt;sup>446</sup> Picardo, E. (2023). Exchange Rate Risk: Economic Exposure. *Investopedia.com*, August 16, <u>https://www.investopedia.com/articles/forex/021114/exchange-rate-risk-economic-exposure.asp</u>.

<sup>447</sup> Ibid.

<sup>&</sup>lt;sup>448</sup> Hakala, J., & Wystup, U. (2002). Foreign Exchange Risk: Models, Instruments, and Strategies. London: Risk Publications.

trade relations of WTO member countries. The WTO agreements establish the legal framework for international trading, and these agreements have been put in place to decrease the risks of unpredictable acts of WTO member governments. But the most important achievement of the WTO is the consolidation of tariff rates and the elimination of risks from tariff escalations. Risk analysis is embedded in WTO regulations since some WTO agreements require scientific proof to be acquired when introducing border measures in international trade.<sup>449</sup> But the achievements of the WTO in the area of exchange risk limitations were limited.

The other international organisation, founded in 1944 to manage convertibility of currencies and fix exchange rates, was the International Monetary Fund (IMF). The main function of the IMF at the beginning was to secure a system of international payments that would enable smooth international trade. The root of the IMF's mandate primarily lies in Article I of the Agreement establishing the IMF, which specifies that one purpose of the IMF is "to facilitate the expansion and balanced growth of international trade…".<sup>450</sup> Monetary cooperation that countries have established in framework of IMF would lead to stable exchange rates and this will lead to a significant decrease in exchange rate risk for businesses operatin in international trade.

The demise of the Bretton-Woods world of quasi-fixed exchange rates in 1973 and the advent of increasingly volatile exchange rates has further compounded the task of effectively controlling for exchange risk, specially in international insurance and re-insurance treaties.<sup>451</sup> Foreign exchange risk arises naturally in insurance products when premiums are remitted in one currency but benefits are denominated in another. Demonetisation of the gold in 1973 and changes in the Bretton-Woods system of international payments and exchange rate coordination have put back the uncertainty in international business and raised the exchange rate risks.

In Europe, regional cooperation was developed, but not only in liberalising intraregional trade but also in monetary affairs. The countries of Europe have

<sup>&</sup>lt;sup>449</sup> Bjelić, P. (2012). World Trade Organization and the Global Risks. In: *Better Business Regulation in a Risk Society*, Alemano, A. et al. (eds.), New York: Springer Science+Business Media, pp. 193-206.

<sup>&</sup>lt;sup>450</sup> International Monetary Fund (2023). Review of the Role of Trade in the Work of the Fund, *IMF Policy Paper*, Washington, DC: IMF.

<sup>&</sup>lt;sup>451</sup> Cozzolino, J. M., & Jacque, L. L. (1987). Foreign Exchange Risk in International Insurance and Reinsurance. *Managerial Finance*, 13(1), pp. 18-22. <u>https://doi.org/10.1108/eb013577</u>

realised that trade cannot be developed without convertible national currencies and stable exchange rates. Upon recovery after the Second World War, most European countries were able to re-establish the convertibility of their currencies. Until this was achieved, they engaged in several agreements, like the Agreement on Intra-European Payments and Compensations. This payment system, established in 1948, sought to facilitate the distribution of American aid and to improve intra-European trade by balancing the balance of payments through deficit elimination. The system was based on predictions of bilateral European trade and meant that countries with a predicted balance of payments surplus would place their surplus in European countries with a deficit, while in return. they would receive aid from the USA if the surplus exceeded a certain level. Countries with a deficit received both aid from the US and aid from European countries, with a projected surplus in the currencies of those countries. This system, based on compensation agreements, was ineffective and misdirected funds due to erroneous forecasts. That is why it was abandoned and replaced by another agreement, the European Payment Union (EPU).

In 1950 seventeen countries of the Organization for European Economic Cooperation (OEEC), which was set up to distribute american aid throught the Marshall Plan, that included Austria, Belgium, Greece, Denmark, Iceland, Ireland, Italy, Luxembourg, Germany (representatives of the Allied administration), Norway, Portugal, Sweden, Switzerland, the Netherlands, the United Kingdom, Turkey and France, founded the European Payments Union (EPU). The Union replaced the Agreement on Intra-European Payments and Compensation and marked the transition from bilateral cooperation to multilateralism. EPU dealt with multilateral clearing between members because, at that time, European currencies were still not convertible. The United States did not support this Union but advocated the establishment of convertibility as soon as possible (assuming obligations under Article VIII of the IMF Statute). That's why EPU was also important as a self-born European initiative. At that time, this Union was a necessity and influenced the increase in the volume of exchange between European countries and their further convergence, by decreasing exchange rate risks in intra-European trade. The Union included a mechanism of automatic credit lines for member countries with a balance of payments deficit, in a certain percentage of the quota, usually 20-25% of the quota. Mutual claims were settled once a month, and the agent of the EPU was the Bank for International Settlements (BIS) from Basel, Switzerland.

When most European currencies achieved convertibility, as defined in Article VIII of the IMF Statute, Western European countries established in 1958 the European Monetary Agreement (EMA - European Monetary Agreement). This agreement regulates the method of calculating mutual debts and claims in

payments between member countries under the conditions of convertibility, and members were most of the European countries. Compensation (clearing) of the balance of payments was carried out, but all settlements were made in gold or convertible currencies. The agreement established the European Fund for financing temporary balance of payments deficits of member countries. Countries with a balance of payments deficit were granted loans for two years, but not automatically. The goal of EMA is to encourage and develop trade between members and the convertibility of their national currencies.

#### Figure 1. European currency "snake"



Source: Authors' representation on provisional data

EMA and the European Fund ceased to operate on December 31, 1972 and were replaced by the European Monetary System (EMS - European Monetary System). EMS as a form of monetary cooperation of the European Community (EC, now European Union), was preceded by the Agreement on the so-called European currency "snake", concluded in 1972 in Basel. All countries have switched to floating exchange rates, but within the limits of  $\pm -2.25\%$ , with the exchange rates being currency changes in relation to other currencies in the agreement. This was the first step towards a monetary union, the ideal of which is a common currency. The agreement is known as the "snake in the tunnel", but since 1973, the snake has been swimming against the dollar. Namely, in March 1973, the EEC countries made a decision on the common floating of their currencies in relation to the dollar. Now the group as a whole is regulated against the dollar, with a permissible variation of +/-4.45%. The members of the agreement were 12 countries of the European Communities - Belgium, Denmark, the Netherlands, West Germany, Great Britain, Italy and France, and countries outside the Community - Norway and Sweden. Other European countries successively became members of this agreement.

An important part of EMS was the Exchange Rate Mechanism (ERM). This mechanism implies that each national currency in the system is assigned a value in European Currency Unit (ECU), as an accounting monetary unit in EC, the so-

called central rate ("central rate"), and then the parity grid is applied. The parity grid is a table showing the relative exchange values in eki for each pair of currencies. The values obtained in this way are compared with the market values of currencies, and the changes are kept within the limits of +/- 2.25%, with the intervention starting when the change reaches 75% of the allowed limit. The stabilisation of exchange rates of European countries contributed to the faster development of intraregional trade and stabilisation of the common market. Joint floating of all national European currencies against the U.S. dollar was another factor that promotes intraregional trade rather than intercontinental trade, since the fixed relations between exchange rates in Europe have eliminated exchange rate risk in intraregional trade of European companies. The ERM stabilised European currencies, and they floated together against the dollar and yen, and this is considered the beginning of monetary integration in Europe.

But the most important monetary arrangement in the European Union was the establishment of the Monetary Union (so-called Economic and Monetary Union – EMU) and the introduction of the single currency – EURO. Back in 1969, at the Summit in The Hague, the possibility of creating an EC monetary union was examined. Improving business conditions through the stabilisation of currencies embodied in various monetary agreements was not enough. At the European Council held in June 1988, it tasked the committee chaired by Jacques Delors, then President of the Commission, to prepare a report on the creation of a monetary union. As a result of the work of this committee, the Delors report followed, which predicted the creation of a monetary union in three stages.

The first phase of the establishment of the monetary union began on July 1, 1990, and included: removal of remaining restrictions on the movement of capital, increasing coordination in the area of economic policies of member states and intensive cooperation between the central banks of member countries. The second stage began on January 1, 1994, with the establishment of the European Monetary Institute (EMI). The EMI led to monetary integration, but it had no competence in conducting monetary policy in the EU. His main tasks were strengthening the cooperation of central banks and the coordination of monetary policies, and making preparations for the creation of the European System of Central Banks (ESCB). The final, third stage of the establishment of the monetary union began on January 1, 1999, when the exchange rates of the currencies of the eurozone countries for the euro were irreversibly fixed. The euro was introduced into payment transactions, and the European Central Bank (ECB) started to manage a unified monetary policy in the eurozone.

The benefits of EMU included, firstly, the elimination of exchange rate risk in intra-European trade and an increase in economic growth, but also an increase in

price stability and transparency, a reduction of interest rates in some countries, an increase in employment, and a reduction of inflation rates, especially import inflation. This all lead to significant increase in intra regional european trade, inside the EU block but also the euro become an important world currency since EU is most important trading power in the world.

## 2. LITERATURE REVIEW

Foreign exchange risk, also known as currency risk or exchange rate risk, arises from fluctuations in currency exchange rates that can significantly affect the financial performance of companies engaged in international transactions or operations. With the global shift from fixed to floating exchange rate regimes since the collapse of the Bretton Woods system in 1973, this risk has become a critical concern for all companies, insurers, and financial institutions. For the insurance industry, exchange rate risk is of significant importance, particularly for multinational companies - insurers, reinsurers, and trading businesses that operate across borders. Foreign exchange risk insurance is a critical component of financial risk management, particularly for insurers operating in international markets. Foreign exchange risk insurance, encompassing financial instruments and strategies such as hedging, derivatives, and reinsurance, is employed to mitigate these risks. The literature review is focused on academic research on foreign exchange risk insurance, focusing on its mechanisms, applications in the insurance industry, and challenges, in developed and to some extent in developing or emerging markets. The review draws on theoretical studies and empirical analyses to provide a comprehensive understanding of the topic.

One of the first studies that explored the "intersection" of two "research sets", namely, reinsurance and foreign exchange risk management, was presented by Cozzolino & Laurent (1987). These two areas of academic endeavours have developed along independent paths, with the risk and insurance profession mainly concerned with the selection of the "best share" of an insurance risk and the international financial management profession investigating the management of deterministic transaction and translation exposures to exchange risks. Yet international reinsurance decisions which require the assessment of exposures to two statistically independent sources of risk may well result in loss of catastrophic proportions. A conceptually sound yet operationally manageable framework based upon the expected utility theory was developed, allowing the firm to integrate explicitly the foreign exchange risk variable in international reinsurance decisions. Specifically two questions were answered in this paper: (i) given the a-priori decision of reinsuring a foreign risk, what amount of this foreign currency-denominated stochastic transaction exposure should be covered through a forward contract and (ii) given the opportunity of reinsuring alternative

"layers" of foreign insurance risk, which one should be selected after allowing for stochastic exchange rates.<sup>452</sup>

Seeing significant growth opportunities, many insurers are considering entering and/or expanding their presence in foreign markets. The models developed by Mange (2000) could help them quantify the magnitude of their potential foreign exchange exposure, better enabling these insurers to judge their approach to their chosen markets. The models developed do not reflect the risk associated with exchange rate regimes that are not credible. Lack of credibility exposes the insurer to a potentially highly volatile exchange rate environment, in which timing, and not spread of risk, would be the key to success. If an insurer chooses to operate in such an environment, it should establish processes to closely monitor and manage foreign exchange exposures in order to limit losses and/or capitalize on opportunities presented. The numerical examples suggest that incremental foreign exchange risk may be small in the context of shorter-term insurance risks and very large in relation to longer-term products such as whole life and annuities. Caution should be exercised before applying these results directly to specific business situations.<sup>453</sup>

Empirical studies on foreign exchange (FX) risk insurance can employ diverse methodologies. Cash flow-based approaches focus on transaction exposure by modelling the interplay of exchange rates with economic variables. Capital market approaches, reviewed by Akkaş (2016), quantify exposure by examining the impact of exchange rate changes on firm value, often using stock price data. Survey-based studies explore corporate hedging practices, revealing discrepancies between theoretical prescriptions and actual practices.

Qualitative case studies, like the one by Dnanani (2003) on a UK multinational in the mining industry, provide insights into the "how" and "why" of FX risk management, emphasising industry-specific factors. These studies highlight the importance of firm-level analyses to avoid aggregation biases that obscure operational and managerial differences. Using a case study approach, this paper reviews the corporate exchange risk management practices of a single large UK multinational company. The research results shed new light on the management of economic exchange rate risk and also have implications for the effects of movements in exchange rates in the context of the translation process. More generally, these results indicate that instances in which corporate practices deviate from normative prescriptions do not necessarily imply sub-optimal behaviour, although some companies may benefit from the reconsideration of

<sup>&</sup>lt;sup>452</sup> Cozzolino & Jacque (1987), op. cit., pp. 18-22.

<sup>&</sup>lt;sup>453</sup> Mange (2000), op. cit., pp. 88-100.

their exchange risk management policies. Finally, they highlight new areas of research and also emphasise the role of qualitative research in accounting and finance.<sup>454</sup>

The theoretical foundation for managing FX risk is rooted in financial risk management literature, which emphasises the use of hedging to reduce volatility in cash flows and firm value. Akkaş provides a literature review focusing on the foreign exchange rate exposure, which is the impact of foreign exchange risk on companies' assets and liabilities. Firstly, the study tries to clarify the concept of foreign exchange exposure, and then the different models in the context of the capital markets approach to the measurement of foreign exchange rate exposure were examined in detail. Secondly, determinants of foreign exchange exposure were reviewed in general. Thirdly, the relationship between foreign exchange risk management and foreign exchange exposure is summarised.<sup>455</sup>

The insurance industry, particularly in the United States, has been a focal point for studies on foreign exchange risk due to its significant international operations. Research by Li et al. (2009) highlights that U.S. insurers, both life and non-life, face similar FX risk profiles, with no systematic differences in their exposure to currency fluctuations. This similarity suggests comparable risk management strategies driven by shared functions in risk pooling and financial intermediation. Empirical evidence indicates that many U.S. insurers are exposed to exchange rate movements, particularly with major trading partners such as the U.K., Japan, and Canada. The study employs a cash flow-based methodology, adapted from Martin and Mauer (2003), to measure transaction exposure, revealing operational and size effects that correlate with increased hedging activity.<sup>456</sup> Martin and Mauer originally use a cash flow-oriented framework to assess the transaction and economic exposures over 1989–1998 for 107 U.S.-based MNCs, which have substantial international business in Europe. Mean absolute response coefficients (MARCs) are introduced as a measure of responsiveness for short-term and longer-term lags, as proxies for transaction and economic exposures. Their results

<sup>&</sup>lt;sup>454</sup> Dhanani, A. (2003). Foreign exchange risk management: a case in the mining industry. *The British Accounting Review*, 35(1), pp. 35-63.

<sup>&</sup>lt;sup>455</sup> Akkaş, M. E. (2016). A Literature Review on the Quantification of Foreign Exchange Exposure of Non-Financial Firms Using Capital Market Approach. *Business and Economics Research Journal*, 7(1), pp. 71-87.

<sup>&</sup>lt;sup>456</sup> Li, D., Moshirian, F., Wee, T., & Wu, E. (2009). Foreign exchange exposure: Evidence from the U.S. insurance industry, *Journal of International Financial Markets*, *Institutions and Money*, 19(2), pp. 306-320.

indicate that cash flow effects are greater for long-term lags than for short-term lags in exchange rate movements for the currencies examined.<sup>457</sup>

In emerging markets, foreign exchange risk management in insurance is constrained by limited access to sophisticated financial instruments. A study on Egyptian insurance companies by Nada & Ibrahim(2017) claim that exchange rate fluctuations generate high risk for the insurance companies in Egypt, such as bankruptcy and liquidity. The study aims to measure the foreign exchange exposure (FXE) for the life insurance companies in Egypt during the period from 2000-2016. After that, the study measures the determinants of this exposure. The problem of the study is concerned with the fluctuations of the foreign exchange rate in Egypt, which have a great effect on the financial performance. The results of the study show that the life insurance companies in Egypt were significant to the FXE; the results are robust to the choice of model design.<sup>458</sup>

Hedging is a cornerstone of FX risk insurance, with firms employing both financial and operational strategies. Financial hedging involves derivatives such as forward contracts, futures, options, and swaps, which allow firms to lock in exchange rates or cap potential losses. Al Mansoori et al. (2024) review 20 high-rated journal articles, finding that derivatives are widely used to mitigate FX risk, though their effectiveness varies based on firm size, financial leverage, and exposure levels. Operational hedging, including netting (offsetting receivables and payables in the same currency) and matching (aligning assets and liabilities in the same currency), is also prevalent, particularly when derivative markets are underdeveloped.<sup>459</sup>

<sup>&</sup>lt;sup>457</sup> Martin, A. D., & Mauer, L. (2003). Transaction versus economic exposure: which has greater cash flow consequences? *International Review of Economics & Finance*, 12(4), pp. 437-449.

<sup>&</sup>lt;sup>458</sup> Nada, M. S. I., & Ibrahim, R. E. E. M. (2017). The determinants of the Foreign Exchange Exposure in the Life Insurance Companies in Egypt: An Applied Study. *International Journal of Accounting and Financial Reporting*, 7(2), Macrothink Institute.

<sup>&</sup>lt;sup>459</sup> Al Mansoori, G. H., Al Sharafi, E. A., Al Mheiri, S. M., & Nobanee, H. (2024). Foreign Exchange Risk Management: A Comprehensive Literature Review and Mitigation Strategies in Floating Exchange Rate Regimes, SSRN, <u>https://papers.ssrn.com/sol3/papers.cfm?abstract\_id=4979859</u>

# **3. FOREIGN EXCHANGE RISK INSURANCE FOR EXPORTING AND IMPORTING ENTERPRISES**

Many trading enterprises globally face the challenge and need for more intensive expansion of their businesses in international markets as a symbol of the progression of their business development. However, new opportunities in foreign trade are accompanied by many risks. One of them is an FX risk.

Non-transferable risks can affect both financiers and users of financial resources. They are provoked by changes in the foreign exchange rate or, alternatively, by changes in national exchange regulations. This is caused by the international character of foreign trade operations. Namely, enterprises originating from different countries are faced with the need to make contracts for a joint business whose financial component would be accompanied by payment in the agreed currency. Enterprises involved in developing business with international partners often come from countries with different local currencies. Many of them are not even convertible. Their first challenge is to determine the currency in which the payment will be completed. This challenge is followed by determining the method for protecting stakeholders' interests, if they expect changes in the exchange rates, whether the stakeholder is the exporter or the importer. Currency conversions may initiate losses, too. If one enterprise, exporter or importer comes from a country with a non-convertible currency and the other partner comes from a country with a convertible currency, the first partner bears greater risk. The risk also increases if the payment is planned to be realised in some future period compared to the date of concluding the contract.

The risk is dual in nature, for the exporter and the importer. Exporter from the country with a nonconvertible currency invoices goods in convertible currency, USD, or EUR and has a strong intention to avoid the loss. This exporter has obvious fear of losing money because of currency fluctuations. That is the Currency risk, or Foreign Exchange Risk.

The financial instruments that offer the possibility of transferring the risk and the so-called financial hedging are derivatives such as forward contracts, foreign exchange futures, swaps and FX options. These derivatives are predominantly seen as foreign exchange (FX) risk mitigation tools, not as speculative instruments.<sup>460</sup> Their role is not focused only on decreasing FX volatility, but also on decreasing enterprises` exposures to interest rate fluctuations, as well as to

<sup>&</sup>lt;sup>460</sup> Ogundu, P. G. (2025). The strategic implications of financial derivatives in hedging corporate exposure to global economic volatility. *World Journal of Advanced Research and Reviews*, 25(2), p. 1218, <u>https://doi.org/10.30574/wjarr.2025.25.2.0482</u>

commodity price risks.<sup>461</sup> Using these instruments, trade enterprises are allowed to determine the exchange rates today that will be used in the future moment when the actual cross-border payment occurs, and by doing so, can mitigate FX risks.

At the beginning of the new century, cross-country analyses, for the case of Chile, showed that the FX derivatives market plays an important role in decreasing the aggregate exposure to fluctuations in the FX rate.<sup>462</sup>

Some US analyses for their enterprises have shown the relation that exists between the size of the enterprise and the use of derivative instruments in hedging its exchange rate risk. The larger the enterprise is, the greater the orientation towards derivative instruments exists.<sup>463</sup>

Currency value fluctuations are caused by several factors. First of all, we can point out the constant presence of inflation in countries of exporters or importers, besides the constant changes in currency markets and some interventions of the central banks. As a consequence of these changes, exporters could receive the increased amount in future, but reduce their own profit margin. On the other side, importers could find themselves in a situation where they need more money to buy foreign currency risks is based on locking the current exchange rate for future transactions.<sup>464</sup>

This risk could be overcome, according to some opinions, in two ways:

- 1. Entering proper forward contract position by exporter, with fixed, forward rate, if the exporter is expecting depreciation or appreciation of the domestic currency.
- 2. Opening a special Foreign Currency Account, where he could deposit foreign currencies obtained from export operations, and that currency could be used

<sup>&</sup>lt;sup>461</sup> Ibid, p. 1231.

<sup>&</sup>lt;sup>462</sup> Jadresic, E., & Selaive, J. (2005). Is the FX Derivatives Market Effective and Efficient in Reducing Currency Risk? *Central Bank of Chile Working Paper*, No. 325, Central Bank of Chile, p. 32.

<sup>&</sup>lt;sup>463</sup> Papaioannou, M. (2006). Exchange Rate Risk Measurement and Management: Issues and Approaches for Firms. *IMF Working Paper*, 06(255), p. 14, doi: 10.5089/97814 51865158.001.

<sup>&</sup>lt;sup>464</sup> BPIFRANCE, International trade: the 5 key export risks to monitor and possible solutions, <u>https://www.bpifrance.com/export-credit-agency/</u> (11.04.2025)

only for the payment of imports by the same enterprise. The only condition is double character of that enterprise's activities, exporting and importing.<sup>465</sup>

Protection possibilities through special transactions in the case of exchange rate changes, for exporters and importers, are numerous. The main types of transactions performed on the foreign exchange market are spot transactions and forward transactions.

In the case of a *spot* foreign exchange rate, this rate is formed through transactions on the spot foreign exchange market, where the currency is delivered immediately, almost immediately, after the transaction. In addition to numerous prompt transactions that can serve as sources of protection against foreign exchange risks, the issue of invoicing in domestic, convertible currency stands out.

Modern participants in international business often conclude forward contracts. *Forward* foreign exchange transactions are performed on the forward foreign exchange market and include transactions for the delivery of currency on a precisely determined date in the future, according to the exchange rate specified at the time of concluding that transaction. Often, the maturities of the forward contracts that are OTC instruments are three months, or six months, or some other agreed-upon period and on the maturity day, the contracted transaction will be finally executed. It is mostly about shorter deadlines, up to a year.

*Swap* transactions are realised by combining spot and forward transactions. These transactions imply one contract for the combined purchase and sale of currency, so with this contract, currency is bought on the spot and sold on the forward market and *vice versa*.

*Foreign exchange futures* differ from forward contracts that are not standardised in their structure, precisely because they are standardised contracts. These contracts are similarly used to regulate payment for traded goods in foreign currency, which will be realised at a specified date in the future, at a price which is fixed and specified according to the exchange rate valid on the purchase day. This is a useful instrument to lock in an exchange rate for some period of time,

<sup>&</sup>lt;sup>465</sup> Bhatia, R., Types of Risks faced by the Exporter and how to mitigate such risks, <u>https://www.linkedin.com/pulse/types-risks-faced-exporter-how-mitigate-ravi-bhatia--32flf/</u> (10.04.2025)

usually a short period, not longer than a year, especially usable in trade and for multinational companies. That way, they hedge foreign currency fluctuations.<sup>466</sup>

It is often used by both stakeholders in international trade, exporters as well as importers. Importers with the obligation to pay for goods bought abroad in the future need to obtain foreign currency at a future point in time. Instead of buying foreign currency at that time, they decided to use foreign exchange futures. That brings them to the position of a protected side concerning the possible volatility of the exchange rate. At the time, they need to pay in foreign currency; in the future, they will get a guaranteed exchange rate based on the FX futures contract.

Exporters, expecting the cash inflow after concluding a trade agreement and goods delivery in the future, could be found in a position of endangered interests if the exchange rate changes. That is the situation for futures to protect the value they will receive. An export enterprise in that situation will take a short position in foreign exchange futures to avoid the possible volatility of the exchange rate.

Among standardised contracts for the protection against FX risks, such as FX futures, Foreign Exchange Options could also be observed, as another sort of standardised contract. Options are derivatives, often standardised contracts like FX futures. Options give the right to buy or sell foreign currency on a specific day in the future, the expiration day, at a so-called strike price. That price is an exchange rate for the realisation of the option. But they do not represent an obligation to do so when the time comes. The stakeholder could give up the purchase or sale.

While the exporter agrees to sell the foreign currency, the importer agrees to purchase foreign currency. Options are standardised contracts used by exporters to sell foreign currency at a specific future date, but they could choose not to execute that sale. They have a right to sell, but not the obligation. The same applies to the importers' purchase of foreign currency. Depending on whether foreign currency has been sold or bought, that is, whether it is an exporter or an importer, options could be puts and calls. These options should be exercised until the expiration date or on that date. After that date, the option is not valid any more. The decision to sell or buy foreign currency at the strike price will be determined based on the exchange rate when the option expires.<sup>467</sup>

<sup>&</sup>lt;sup>466</sup> Hayes, A., Scott, G., & Courage, A. (2022). What Are Currency Futures? How They Work in Trade and Investing? *Investopedia.com*, May 24, <u>https://www.investopedia. com/terms/c/currencyfuture.asp</u> (10.04.2025)

<sup>&</sup>lt;sup>467</sup> Kozomara, J. (2019). *Finansiranje međunarodnog poslovanja*. Belgrade: University of Belgrade, Faculty of Economics and Business, pp. 117-119.

Selling or buying a certain amount of currency should be realized according to a fixed exchange rate on the expiration or maturity date. That is the main rule for European options. In addition to this group of options, there are two more: American and Bermuda options.

Both American and European options are present on the stock exchanges. They differ from each other depending on whether they must be exercised by a certain date, or exactly on that day called the expiration date. If they must be exercised exactly on an expiration day, they are European options, and if they are allowed to be exercised on any day up to and including the expiration date, they are American options. European options give less flexibility in handling options, compared to American options. Concerning that factor, European options are considered less valuable than similar American options.<sup>468</sup>

There is also a middle solution for options between European and American options. These are Bermuda options, whose contract allows exercise usually on a few specific days before the expiration of an option. During these days, the buyer is allowed to buy, or the seller to sell, the underlying asset of his option. These days are very close to the expiration date of an option. That position gives more flexibility for traders to exercise their options compared to European options, but it is less flexible compared to American options.

One of the main solutions for overcoming the foreign exchange currency risk is to engage in forward stock or OTC market transactions. The use of forward contracts, swaps, FX futures, and options provides greater security and protection for participants in foreign trade transactions and thus motivates their more dynamic involvement in international trade.

<sup>&</sup>lt;sup>468</sup> Corporate Finance Institute, American vs European vs Bermudan Options, <u>https://corporatefinanceinstitute.com/resources/derivatives/american-vs-european-vs-bermudan-options/</u> (11.04.2025)