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THE POSSIBILITIES OF CURRENCY RISK MANAGEMENT

MOGUĆNOSTI UPRAVLJANJA VALUTNIM RIZIKOM

ABSTRACT

By doing business with foreign partners, every company - regardless of its size, activity and location, is faced with the existence of the currency risk. The company's awareness of the exposure to currency risk is of immense importance, as its negative effects could be treated by applying appropriate business policies and instruments. International business relations of Croatian real sector companies are becoming more and more important, especially after the Croatian accession to the European Union. As this trend is also present in eastern Croatia, there is a growing need to understand the possible consequences of currency risk exposure.

Therefore, the aim of this paper is to explore the availability of various financial instruments for managing currency risk in Croatia, as well as to determine the level of their application in the eastern Croatian companies. Large companies from five Slavonian counties which operate also on the international market have been observed. The paper will analyze companies' approach to the currency risk problem, their awareness of the existing management instruments and the degree of their implementation. The paper will present in detail the forms of currency risk, such as transaction, translation and economic exposure, as well as the appropriate methods for its managing. The two major groups of these methods - internal and external, differ substantially in their availability - internal methods are available to each company naturally, while external ones depend on the development of the financial system. Analysis of exposure types and available instruments will be carried out by using comparative and descriptive methods while the situation in the companies will be examined by conducting a survey. Due to undeveloped Croatian financial system and lack of information on different instruments for currency risk management, it is necessary to raise companies' awareness of the currency risk exposure to properly manage it.

Key words: *currency risk, eastern Croatia, risk management, exposure types, financial instruments*

SAŽETAK

Poslovanjem s inozemnim partnerima, svako je poduzeće - bez obzira na svoju veličinu, djelatnost i lokaciju, suočeno s postojanjem valutnog rizika. Neizmjerna je važnost osviještenosti poduzeća o izloženosti valutnom riziku, čije je negativne utjecaje na poslovni rezultat moguće tretirati primjenom adekvatne poslovne politike, odnosno upotrebom odgovarajućih instrumenata. Međunarodno poslovanje hrvatskih poduzeća u realnom sektoru sve je značajnije, posebice nakon pristupanja Republike Hrvatske Europskoj uniji. S obzirom na prisutnost ovog trenda i u istočnoj Hrvatskoj, raste potreba za razumijevanjem mogućih posljedica izloženosti valutnom riziku.

Stoga, cilj ovoga rada jest istražiti dostupnost različitih financijskih instrumenata za upravljanje valutnim rizikom u Hrvatskoj, kao i utvrditi stupanj primjene istih u poduzećima istočne Hrvatske. Promatrana su velika poduzeća s područja pet slavonskih županija koja posluju i na međunarodnom tržištu. Radom se želi analizirati na koji način poduzeća promatraju problem valutnog rizika, jesu li svjesna postojećih mogućnosti upravljanja navedenim rizikom te koliki je stupanj primjene pojedinih metoda. U radu će detaljno biti prikazani oblici izloženosti valutnom riziku, poput transakcijske, računovodstvene i ekonomske izloženosti, kao i odgovarajuće metode za njegovo pokrivanje. Osnovna razlika između dviju glavnih skupina spomenutih metoda – unutarnjih i vanjskih, leži u dostupnosti istih – unutarnje su metode dostupne svakom poduzeću same po sebi, dok vanjske pak ovise o razvijenosti financijskog sustava pojedine zemlje. Analiza oblika izloženosti i dostupnih instrumenata će biti provedena korištenjem komparativne i deskriptivne metode dok će se stanje u poduzećima ispitati anketnim istraživanjem. Obzirom na relativnu nerazvijenost hrvatskog financijskog sustava i slabu informiranost o različitim mogućnostima upravljanja valutnim rizikom, nužno je upoznati poduzeća s problemom izloženosti valutnom riziku kako bi njime mogla primjereno upravljati.

Ključne riječi: *valutni rizik, istočna Hrvatska, upravljanje rizikom, oblici izloženosti, financijski instrumenti*

1. Introduction

Currency risk, foreign exchange risk or exchange-rate risk arises because of uncertainty about the exchange rate prevailing in the future. It refers to the variability of the base currency value of assets, liabilities and cash flows resulting from the variability of the exchange rate. Therefore foreign exchange risk arises when a firm indulges in international operations involving currencies other than the base currency, including importing, exporting, investing and financing. As a result, the firm will be exposed to assets, liabilities and cash flows denominated in currencies other than the base currency (Moosa, 2003). A firm is exposed to currency risk whenever its payables and receivables in foreign currencies are not matching in terms of amount and settlement (Tuškan, 2009). Free floating regimes of the main world currencies are cause of existence of this currency risk. Up to 1973, when the Bretton Woods Agreement was abandoned, exchange rates for majority of world's industrialized countries' currencies were relatively stable. Fluctuations were rare and of small magnitude making business transactions in foreign currency safe in terms of the currency risk. However, introduction of fluctuating exchange rates leaded to strong increase in exchange rates volatility.

As it is said before, every business operation in a currency different than domicile, necessarily means that the firm is exposed to currency risk. The Croatian companies are exposed to these same problems, especially after the Croatian accession to the European Union. This increased currency risk exposure is the reason why this paper aimed to explore the availability of various financial instruments for managing currency risk in Croatia and to determine the level of their application in

the eastern Croatian companies. Large companies from five Slavonian counties which operate also on the international market have been observed. The paper includes three chapters. The first chapter deals with the theoretical background of the observed problem as it is necessary to gain an insight into main characteristics of the currency risk if one is to understand the possible solutions. Therefore, the first chapter will present in detail the forms of currency risk, such as transaction, translation and economic exposure, as well as the appropriate methods for its managing. The two major groups of these methods - internal and external, differ substantially in their availability. The second chapter gives an overview of the previous researches concerning the problem of currency risk management. This literature is numerous both in Croatia and in the world. The main findings are described to enable comparison with the case of the eastern Croatian companies. Finally, in the third chapter of this paper companies' approach to the currency risk problem, their awareness of the existing management instruments and the degree of their implementation is analyzed. The analysis of the exposure types and the available instruments is carried out by using comparative and descriptive methods while the situation in the companies is examined by conducting an interview survey.

2. Theoretical background

After giving the definition of the currency risk, it is necessary to gain an insight into the main characteristics of the observed problem. The firm's very first step in this process of managing the currency risk is to determine the specific type of current risk exposure. After that, it should determine the hedging strategy and the available instruments to deal with these currency risks. The three main types of currency risk exposures are transaction exposure, translation exposure and economic exposure (Papaioannou, 2006). Transaction exposure is basically cash flow risk and deals with the effect of exchange rate moves on transactional account exposure related to receivables (export contracts), payables (import contracts) or repatriation of dividends. An exchange rate change in the currency of denomination of any such contract will result in a direct transaction exchange rate risk to the firm. Translation exposure is basically balance sheet currency risk and relates exchange rate moves to the valuation of a foreign subsidiary and to the consolidation of a foreign subsidiary to the parent company's balance sheet. In consolidating financial statements, the translation could be done either at the end-of-the-period exchange rate or at the average exchange rate of the period, depending on the accounting regulations affecting the parent company. Income statements are usually translated at the average exchange rate over the period while balance sheet exposures are often translated at the prevailing current exchange rate at the time of consolidation. Finally, economic exposure reflects basically the risk to the firm's present value of future operating cash flows from exchange rate movements. In essence, economic risk concerns the effect of exchange rate changes on revenues (domestic sales and exports) and operating expenses (cost of domestic inputs and imports) (Papaioannou, 2006). According to same author, economic exposure is usually applied to the present value of future cash flow operations of a firm's parent company and foreign subsidiaries. Identification of the various types of currency risk, along with their measurement, is essential to develop a strategy for managing currency risk.

After defining the types of exchange rate risk that a firm is exposed to, next step is the measurement of these risks. Measuring currency risk, especially translation and economic ones, could be difficult. At present, a widely used method is the value-at-risk (VaR) model where value at risk is defined as the maximum loss for a given exposure over a given time horizon with z% confidence. The VaR methodology can be used to measure a variety of types of risk, helping firms in their risk management. (Papaioannou, 2006)

After identifying the types of currency risk and measuring the associated risk exposure, a firm needs to decide whether to hedge (manage) or not these risks. In practice corporate treasurers have used various currency risk management strategies depending on the type of risk and the size of the firm

(Papaioannou, 2006). There are two main groups of techniques available for the currency risk management - internal and external ones. The internal techniques are those used in firms by themselves while the external ones are offered by financial system. As currency hedging is often costly, a firm should first consider internal techniques also called “natural” hedging. The easiest way, although not very likely to happen, is to insist that all foreign customers pay in company’s home currency and that company pays for all imports in its’ home currency. Second technique - matching - is possible if a company has receipts and payments in the same foreign currency due at the same time. In such case, a company can simply match them against each other. However, company needs to deal on the forex markets for the unmatched portion of the total transactions. Netting as an internal technique involves the consolidated settlement of receivables, payables and debt among the subsidiaries of a firm (Tuškan, 2009). Multinational firms often use a strategy called ‘leading and lagging’. This strategy involves a company bringing forward or delaying payments or receipts of foreign currency with its subsidiaries or business partners to offset the currency risks associated with other foreign currency transactions. This may be achieved by agreement or by exceeding credit terms. If an importer expects that the currency it is due to pay will depreciate, it may attempt to delay payment. If an exporter expects that the currency it is due to receive will depreciate over the next three months it may try to obtain payment immediately (Tuškan, 2009). Some firms are also able to achieve a partial natural hedge through the correlation between the price of the goods they produce and the exchange rate. Firms may also manage currency risk exposure by having sufficient currency diversification across their costs and revenues, or assets and liabilities. Diversification should reduce aggregate currency exposure, at least to a level below the sum of all individual exposures (Becker, Fabbro, 2006). This technique is also referred to as ‘pooling’.

Currency risk management includes also the external methods which are actually application of the various hedging instruments. The available hedging instruments are numerous, varying in complexity. This variety is caused by the dramatic increase in the specific hedging needs of the modern firm. These instruments include both OTC and exchange-traded products (Papaioannou, 2006). However, one of the possible currency risk management strategies is taking position (long or short) opposite to one currently exposed to currency risk. According to Tuškan (2009), this technique enables management of the complete currency risk of some position with low costs. Among the most used hedging instruments on the OTC market are currency forwards and cross currency swaps. Currency forwards are defined as buying a currency contract for future delivery at a price set today. The two most common types of forwards contracts are outright forwards, which involve the physical delivery of currencies and non-deliverable forwards which are settled on a net cash basis. With forwards, the firm is fully hedged. However, the high cost of forward contracts and the risk of the exchange rate moving in the opposite direction are serious disadvantages (Papaioannou, 2006). The two broadly used cross-currency swaps are the cross-currency coupon swap and the cross-currency basis swaps. The cross-currency coupon swap is defined as buying a currency swap and at the same time pay fixed and receive floating interest payments. Its advantage is that it allows firms to manage their foreign exchange rate and interest rate risks, as they wish, but the firm that buys this instrument is vulnerable to both currency and interest rate risk. Cross-currency basis swap is defined as buying a currency swap and at the same time pay floating interest in a currency and receive floating in another currency. However, Papaioannou (2006) points out that the major disadvantage is that the primary risk for the firm is interest rate risk rather than currency risk.

When it comes to exchange-traded hedging instruments, the two main instruments are currency futures and currency options, both derivatives. By using these instruments, firms take position opposite to one exposed to currency risk. Currency futures are exchange-traded contracts specifying a standard volume of a particular currency to be exchanged on a specific settlement date (Papaioannou, 2006). The main advantage of using currency futures for currency risk hedging,

compared to the previous methods, is fact that firm does not need to engage funds equal to position exposed to the currency risk. It is necessary only to pay initial margin defined as an percentage of underlaying contract value (Tuškan, 2009). These currency futures are similar to forward contracts as both allow a firm to fix the price to be paid for a given currency at a future point in time. However, there are also significant differences both in terms of the available traded currencies and the typical (quarterly) settlement dates. If a firm holding currency futures contract decides before the settlement date that it no longer wants to maintain such a position, it can close out its position by selling an identical futures contract. This can not be done with forward contracts (Papaioannou, 2006). It could be said that the main disadvantage of the currency futures is the previously mentioned fact that they are standardized which leads to only partial protection from currency risk (Tuškan, 2009). On the other side, a currency option is a right, but not an obligation, to buy or sell a currency at an exercise price on a future date. Facing a favourable movement in exchange rates, the company will simply be allowed to leave the option to lapse and to take advantage of this favourable movement. The right will only be exercised to protect against an adverse movement. A call option gives the holder the right to buy while a put option gives the holder the right to sell the underlying currency. Their main advantages are their simplicity, lower cost than the forward contracts and the predicted maximum loss which is the premium paid to obtain currency option. Papaioannou (2006) also states that the cost of a currency option is higher than other sophisticated options structures like call spreads.

3. Previous researches

The problem of the currency risk exposure management has been the subject of many foreign and domestic research papers. Various aspects of this problem have been observed. However, in Croatia this subject was often studied in a wider context of risk management. For instance, Miloš Sprčić (2007) analysed financial risk management practices and derivative usage in large Croatian and Slovenian non-financial companies. She concluded that forwards and swaps are by far the most important derivative instruments in both countries. Futures are more important for the Slovenian than for the Croatian companies, while exchange-traded and OTC options are unimportant means of financial risk management in both countries. Slovenian companies use all types of derivatives more intensively than Croatian companies. Miloš Sprčić et al. (2008) analysed corporate risk management practices in the large Croatian non-financial companies. They have discovered that commercial banks are the most important in providing risk management instruments and the primary source for derivatives transactions. Tuškan (2009) pointed out a problem of insufficient usage of existing financial derivatives in market risk management by domestic financial and business subjects which have been using only basic derivatives, foreign exchange swaps and forwards. However, it should be emphasized that even such low level of the derivatives usage represented particular advancement on the domestic financial market as there was no derivatives at all up to 2004. Banks' financial reports were only source of data for keeping track on development of that new, modest sector of the financial market.

Sučić et al. (2011) explored exposure of large Croatian non-financial companies to different financial risks and their risk management practices. They revealed that 93% of the analysed companies use some form of financial risk management and manage at least one financial risk. Companies are exposed mainly to commodity price risk and the exchange-rate risk. In fact, there was no analysed company claiming not to be exposed to exchange-rate risk. The authors also discovered that Croatian non-financial companies mainly use simple risk management instruments like natural hedging. Forwards and swaps are most used derivatives but 42.5% of the analysed companies do not use derivatives at all. When it comes to exchange-rate risk, the most used technique is managing of the assets and liabilities' currency structure. It is followed by using forwards and swaps. International diversification of targeted market should also be mentioned. Managers' inadequate knowledge and insufficient supply of risk management instruments on

domestic market have been seen as main reasons for the lack of using more sophisticated risk management techniques. These results are almost the same as results presented by Miloš Sprčić et al. (2008).

On the other hand, there are numerous foreign research papers dealing only with the currency risk exposure management. Chow et al. (1997) found that the exchange rate exposure of individual firms increases with the return horizon. The differences in the magnitude of exposure of individual firms are significantly related to firm size but not to the relative portion of foreign sales to total sales. The empirical evidence was consistent with the hypothesis that hedging activities exhibit economies of scale so the magnitude of economic exposure is less for larger firms than for smaller ones. Bodnar and Gebhardt (1999) made comparative study on derivative usage among US and German non-financial firms. They found that 78% of German firms used derivatives compared to 57% of US firms. In both countries, foreign currency derivative usage is most common, followed closely by interest rate derivatives. Firms in the two countries differ notably on issues like the primary goal of hedging, their choice of instruments and the influence of their market view when taking derivative positions. These differences could be driven by the greater importance of financial accounting statements in Germany than the US and stricter German corporate policies of control over derivative activities within the firm. Loderer and Pichler (2000) surveyed the currency risk management practices of Swiss industrial corporations finding that they do not quantify their currency risk exposure. One of the possible reasons is that firms do not think they need to know their exposure because they use on-balance-sheet instruments to protect themselves before and after currency rates reach troublesome levels. It is puzzling that firms use currency derivatives to hedge/insure individual short-term transactions, without apparently trying to estimate aggregate transaction exposure.

Hagelin and Pramborg (2004) used a sample of Swedish firms and investigated the risk reducing effect of foreign exchange exposure hedging, obtained by different hedging instruments. They found that firms' foreign exchange exposure is increasing with the level of inherent exposure, measured as the difference between revenues and costs denominated in foreign currency, and that it is decreasing with firm size. They also found a significant reduction in foreign exchange exposure from the use of financial hedges. Muller and Verschoor (2005) empirically found that exchange risk exposure is time-varying, horizon-dependent and non-linear in nature. One year later, Muller and Verschoor (2006) found that about 13% of analysed 817 European multinational firms experienced economically significant exposure effects to the Japanese yen, 14% to the US dollar and 22% to the UK pound. They discovered that a depreciating euro against foreign currencies has a net negative impact on European stock returns. Short-term exposure seems to be relatively well hedged. Finally, foreign exposure is found to increase with firm size. Papaioannou (2006) used the U.S. data and found that larger firms use derivative instruments in hedging its currency risk exposure. U.S. firms use hedging primarily to minimize the variability in their cash flow and earning accounts while the most used derivatives are OTC currency forwards (over 50% of all foreign exchange derivatives used), OTC currency options (20%) and OTC currency swaps (10%). Bartram (2007) estimated the foreign exchange rate exposure of 6,917 U.S. nonfinancial firms on the basis of stock prices and corporate cash flows. Several firms seemed to be significantly exposed to exchange rate of either Canadian dollar, Japanese yen and euro.

Bodnár (2009) examined the exchange rate exposure of Hungarian enterprises from a financial stability perspective. To collect company-level data, two surveys were carried out on exchange rate exposure and exchange rate risk management practices. The first survey carried out in 2005 showed that the majority of small and medium-sized enterprises are exposed to exchange rate depreciation, but that exchange rate risk management techniques are almost unknown to them. Based on the results of the 2007 survey, the main motive for raising debt in foreign currency is lower interest rates, while at large enterprises natural hedging also appears as a factor. The main reason for

ignoring currency risk is that its management tools are thought to be expensive, complicated or ineffective. The majority of enterprises think there are no suitable tools to manage currency risk or they expect external solutions, such as the introduction of the euro to decrease their exposure. This idea have support in findings of Bartram and Karolyi (2004) who found that the introduction of Euro led to a net absolute decrease in the foreign exchange rate exposure of nonfinancial firms in countries now using euro. Bartram et al. (2013) studied the currency risk exposures of a sample of firms that undertake large acquisitions of foreign companies. They examined how the exposures change from before to after the acquisition finding that they generally lead to reduced currency exposure reflecting the fact that most of the firms already have business in the target's country and the mergers serve as operational hedges.

4. Results of the interview survey

As the aim of this paper is to determine current state of currency risk management in eastern Croatian companies, the interview survey was taken. Observed companies were several large companies (more than 100 employees on average) based in eastern Croatia and operating on domestic market, with majority of them operating also on markets of both EU and non-EU countries. Companies' approach to the currency risk exposure, their awareness of the existing management instruments and the degree of their implementation were questioned and analyzed. First analyzed aspect was currency risk exposure through financing activities. All observed companies stated that they currently use financing through the bank loans. Half of the observed companies have debt in domestic currency prevailing in structure of liabilities while for the second half, debt denominated in foreign currencies is more significant. The euro is the most common currency used. The analysis of the reasons behind financing through loans in foreign currency reveals that majority of them find such loans more affordable in overall terms while some companies stated that it was only loan they could get. The most important factors when deciding on taking bank loan are the purpose for which the funds will be used, the interest rate, predictability of repayment and the exchange rate, respectively. Overall, observed companies find loans in foreign currency cheaper and equally risky compared to the loans in domestic currency. When it comes to currency risk exposure through business operations, all observed companies have contracts with domestic partners, either customers or suppliers, where price or payment is contracted in a foreign currency. Majority of them (75%) claimed that the 10% depreciation of domestic currency would have negative effects on them. Introduction of the euro as a currency in Croatia and more affordable loans in domestic currency are seen as the most possible solutions for a fewer currency risk exposure. Natural hedging, larger price margin (giving flexibility), cash-pooling and financial derivatives are known as currency risk management instruments for most of the observed companies. In addition, 75% of observed companies use some of the following currency risk management instruments - larger price margin, cash-pooling and natural hedging. Those companies which do not manage their currency risk exposure state that either they will not be affected by exchange rate volatility or they do not predict any serious exchange rate movements. Some companies also stated that the currency risk exposure management is under control of a parent company.

5. Conclusion

Results of the interview survey showed that larger eastern Croatian companies are aware of currency risk exposure to some extent. Similar to previous domestic researches, it is obvious that companies do not use even all currency risk management techniques that they know and there are some they are not even aware of. This unsatisfying state is not so much caused by undeveloped Croatian financial system as much as by lack of information on different instruments for currency risk management. That is the reason why it is necessary to raise companies' awareness of the currency risk exposure. Managers can not properly manage it without sufficient information and

knowledge. The survey carried out for this paper revealed the significance of this problem. However, further analysis should follow which will analyze larger number of companies, including smaller ones as well, and which will give deeper insight of the unawareness of currency risk exposure by theeastern Croatian companies.

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