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DETERMINATION OF EXPORT VOLUME AND HEDGING STRATEGY: A SURVEY OF EXPORTER'S TRANSACTION AT THE MAKASSAR INDUSTRIAL ESTATE (KIMA)

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ABSTRACT

The study aims to determine factors which influence the export volume of leading commodities in South Sulawesi and investigate which hedging strategy has been implemented by the exporters. The survey was undertaken for 13 managers arranging 250 sales contracts in thirteen companies. They were asked to describe what type of hedging strategy was implemented in protecting their revenue with US dollar as denominated currency to their contract. Several literatures suggested that hedging strategy needs to consist of hedging theory, but in South Sulawesi, the international traders' belief is in pragmatism way by relying on money market instrument especially for interest rate orientation. Although export import activities for cocoa, cement, lobster, seaweed, box and marbles used US$ for denomination, the respondents were aware of Rupiah fluctuation to foreign currency which also bears transaction exposure. Multiple regression analysis was used to determine variables which affected the volume and export, while hedging strategy was identified using qualitative approach. It was found that the increase on cost of hedging, inflation references and interest rate references affected significantly the increase of the export volume, while the increase of US$ spot rate to Indonesian Rupiah did not significantly affect in reducing export volume. Most of exporters rely on hedging in money market, long forward contract to protect their transactions.

Key words: *Hedging, Inflation, Interest Rate, Spot Rate, Volume of Export.*

PENENTUAN VOLUME EKSPOR DAN STRATEGI *HEDGING*: SURVEI TRANSAKSI EKSPORTER KAWASAN INDUSTRI MAKASSAR (KIMA)

ABSTRAK

Penelitian bertujuan mengetahui faktor-faktor yang mempengaruhi volume ekspor komoditas unggulan di Sulawesi Selatan dan menentukan strategi hedging yang telah dilakukan oleh eksportir. Survei ini dilakukan pada 13 manajer dengan 250 kontrak penjualan di tiga belas perusahaan. Mereka diminta menjelaskan jenis strategi hedging apa yang diimplementasikan untuk melindungi pendapatan mereka dengan mata uang dolar AS sebagai mata uang kontrak mereka. Beberapa literatur menyarankan bahwa strategi hedging sesuai dengan teori hedging, namun di Sulawesi Selatan, kepercayaan pedagang internasional secara pragmatis mengandalkan instrumen pasar uang terutama berorientasi pada suku bunga. Meskipun kegiatan ekspor impor kakao, semen, udang, rumput laut, peti dan marmer menggunakan US $, responden menyadari perubahan nilai tukar Rupiah terhadap mata uang asing juga menghambat nilai transaksi. Analisis regresi berganda digunakan untuk menentukan variabel yang mempengaruhi volume ekspor, sementara strategi hedging diidentifikasi menggunakan pendekatan kualitatif. Ditemukan bahwa peningkatan biaya hedging, inflasi, dan referensi tingkat bunga berpengaruh secara signifikan pada peningkatan volume ekspor, sementara kenaikan kurs US $ terhadap Rupiah tidak secara signifikan mempengaruhi turunnya volume ekspor. Sebagian besar eksportir mengandalkan nilai hedging di pasar uang, kontrak panjang ke depan untuk melindungi transaksi mereka.

Kata Kunci: *Hedging, Inflasi, Tingkat Suku Bunga, Spot Rate, Volume Ekspor.*

INTRODUCTION

The research aims to determine what factors that affect the export volume of leading commodities such as cocoa, cement, lobster, seaweed, box and marbles in South Sulawesi. These commodities contributed to South Sulawesi economy during the 1997 crisis. Although exporters enjoyed fortunate condition during the crisis, they received more rupiahs than ever before for their existing sales contract. The sales contract bore risks of appreciation of US dollar, which the exporters may face loss for currency fluctuation. Exporters could prevent more loss by taking a position in determine quote rupiah to US dollar thorough hedging strategy. Exporters could receive a precise range of quote rupiah to US dollar which will give fixed cash flow and the risks of currency could be reduced. The exporters could choose forward contract as part of hedging strategy. As Czinkota et al. (1998) emphasized that forward contracts serve a variety of purposes, but their primary purpose is to allow firms to lock in a rate of exchange of funds that will be required in the future. In this way, business firms can avoid a potential loss on foreign exchange in the event that the currencies involved change in value between the date the contract was entered into and the date when the merchandise or services were delivered.

Indonesia has experienced with currency turbulence during the period 1997 the US dollar was traded for more than Rp14 000 and importers faced fragile currency because more rupiah should be changed to get certain amount of US dollar. However, exporter faced fortunate condition because from export activities, they were able to receive more rupiah than ever before. Export activities became more attractive than import activities, especially for leading commodity such as cocoa, lobster and manufacturing product such as cement and nickel in South Sulawesi. Most of leading commodities are exported through Makassar airport or seaport. Although the exporters were quite enjoyed to take opportunity during the crisis, the situation was not appropriate to achieve sustainable economic development as more business people were kicked out from their business (Tambunan 2000). In South Sulawesi case, several companies faced crisis by restructuring their financial system and exporters have to reduce the number of staff. Exporter companies were redesigned their financial strategy to prevent more exposure in transactions.

Several researches have been done to investigate the effect of export-import activities and hedging strategy in protecting from transaction exposure and economic exposure (Adami 2008; Ahmed 2004; Dieter 1998; Huang 2010). These researchers concluded the majority of traders implemented strategy of hedging by forward contract, money market or even unhedging. However, the researchers sample need to explore more detail based on the short time transaction such as weekly or monthly bases to find out the detailed effect and hedging strategy to be implemented. In this research, the researcher emphases on transaction base due to investigate how exporters become more sensitive in formulating hedging and action to be taken. In other words, the researcher wants to find out a variety action should be taken in handling exporter's risks or how exporters could react to fluctuated foreign currency to reduce uncertainty of cash flow for their transactions.

This research analyzes the effect of cost hedging, spot rate of Indonesian Rupiah, inflation rate references, interest rate references to the volume of export. The research also would investigate type hedging strategy which was implemented by the traders on sales contract base or transaction base. The traders represents by manager in charge for export administration in chosen leading firms which producing and selling leading commodities in South Sulawesi.

THEORETICAL FRAMEWORK

Diversified capital market would help international investors to reduce currency risk, which is essential to be considered in identi-

fying average cost of capital. Eiteman et al. (2004) described that market segmentation is a financial market imperfection caused mainly by government constraints, institutional practices and investor perception. Analysis in market currency gave the exporters or importers chance to react based on the Fisher theory and purchasing power parity theory and interest rate parity. These issues were investigated by Baker (1997) and Shapiro (1999) that in order to aware of variables which affected the volume of exports, it is important to consider inflation rate, currency spot rate, interest rate and cost of hedging. Country would react to foreign currency based on the ability of the country in macroeconomic indicators such as inflation rate, growth of GDP, growth of foreign investment, interest rate and other economic indicators such as balance of payment and the government financial policy. In 2006, Indonesian's economy had shown the size of GDP 0.8% of GDP of the world (Thimann 2008).

Indonesia has experienced in protecting from global economic crisis by implementing the appropriate economic policy during the 2007 and maintaining a sustainable economic growth and suitable reserved. Indonesia has become a country with stable economic condition with low inflation and low rate in the Indonesian Central Bank (Certificate of deposits - SBI). Although the government implemented an appropriate economic policy, the Indonesian competitive advantage position stay far behind compared to other South East Asia Nations as Goeltom (2008) said that a more open economy reduces the degree of monetary economy effectiveness. Indonesia needed a specific financial policy, more suitable touch in international trade and maintaining good position on balance of payment such as providing low interest rate for exporters, the government must provide cost of hedging for exporters.

The Indonesian economy has shown remarkable experiences in handling economic crisis in 1997. It was difficult condition having high inflation rate, in which Indonesia adopted a managed floating exchange rate system, the central bank kept the value of rupiah with in "an intervention band" round the central rate was pegged to a basket of major currencies (Nasution 2000). The country could escape from the crisis through tight money policy and the government used the funds for urgent need and top list priority in order to achieve better financial condition. Indonesia has passed the turbulence economy by implementing economic reform ordered by the International Monetary Fund (IMF) known as Letter of Intention (LOI) including encourage devaluation of rupiah went to far without real solution. IMF proposed stronger proposition by arguing that the market would provide solution in a time when the markets clearly undervaluing currencies thereby deepening the crisis (Dieter 1998).

Indonesia believed that market mechanism will work, but in reality Indonesia has faced long experience in financial problems by implementing trial policy and it was full of risks. This became expensive exercise in monetary policy as Indonesia has facing substantial amount in foreign debt and country expenditure heavy using to pay the principal and interest for foreign debt. It is advisable to recommend to the government of Indonesia to stop seeking foreign debt and explore the possibility to increase the use of domestic funds by asking Indonesian participation through mutual funds, obligation or society gift to the government.

Hedging and Invoicing to Reduce Exchange Rate Exposure

Hedging could be used to reduce risk on foreign exchange exposure for exporter due to the volatility of foreign currency quotation. Exporter could expect fixed amount of cash flow for the transaction through hedging activities by asking the third party to ensure that the expected cash flow would be available for them for the period of time. Although the exporters have participated in hedging activities, it is not automatically that

the cash flow would not bear risk from uncertainty future cash flow. Nevertheless, the exporter will feel secure when they undertaken hedging activities (Baker 1997; Shapiro 1999)

Hedging protects the owner of existing assets from loss, because the amount of cash flow to be received could be determined. Eiteman et al. (2004) explained that hedging is a taking a position, acquiring a cash flow, an asset or a contract (including a forward contract) that will rise (fall) in value and offset a fall (rise) in the value of an existing position. Each country has a specific type hedging instrument to protect contract, the study by Huang (2010) addressed the issue of price inertia phenomenon to exchange rate change. The study found that parties to the contract can not delay or accelerate payment to deal with exchange rate changes and there will be a large exchange rate pass trough, as price respond to actual exchange rate movement. In this phenomenon would support existing theoretical framework in arguing why should hedge or why not hedge, due to the effectiveness of hedging activities. It is up the exporter to decide what types of hedging instruments are needed.

A study undertaken in Europe and USA, found that European firm are generally more likely to use derivatives hedges than their US counterparts (Dohring 2008). The researcher described that Euro invoicing effectively shifts transaction risk to the foreign importers. Close to 50% of euro-area exports to countries outside the EU are invoiced in euro, and the share of the euro is higher in exports to other EU countries. As suggested by the literature on the optimal choice of invoicing currency, domestic-currency invoicing of euro-area exports increased with the introduction of the euro. At the same time, invoicing in US dollar continues to play a much larger role than the share of euro-area exports to the US would suggest.

Another research undertaken by Fornes and Cardoza (2009) for Spanish companies which has operated in Latin America indicated unexpected fluctuations in the value of the currencies in emerging markets affect different areas within the company. The effective way to deal with this challenge is done by assessing the foreign exchange the functional areas, and that giving more autonomy to subsidiaries operating in changing environments to make decision and implement initiatives against foreign exchange. This seems to be effective in dealing with this risk.

Variation of strategy implemented cross country around the world gave the idea to the author that the possibility to find out how the exporters in South Sulawesi could handle transaction exposure for leading commodities in order to protect their interest from currency risks. In few cases, the exporters tried to implement spot rate currency to handling transaction, but the reality indicated that forward rate was believed to be popular for exporters if due date not exceed three month. Nevertheless, the previous research (Adami 2008) found that three commodities in South Sulawesi, such as chocolate, lobster and seaweed could be hedged with long forward and short forward method, whereas marble and cement could be hedged by long forward and currency swap.

To solve the problem of agreeing on a value underlying parameter, (Moosa 2006) suggested the introduction of a hybrid operational hedging technique which requires the conversion of the cash flows at exchange rates calculated as some sort of a weighted average of the exchange rates used for the same purpose under a risk sharing arrangement and a currency collar. It is demonstrated that by using equal weights, the hybrid arrangement reduces, the sensitivity of the value of the converted cash flows to the value of the risk sharing threshold parameter.

Hypothesis 1 *"The increase in cost of hedging would affect the increase on volume of export"*

Foreign Exchange Rate

Rate of quotation between domestic currency and foreign currency will affect the

ability of the country to participate in international market. It has been known that foreign exchange market could affect inflation rate and interest rate for country. If local currency appreciates to foreign currency such as US dollar, or Euro, the purchasing power will increase because the amount of local currency to be changed with foreign currency would be less than it used to be.

The foreign exchange market is the mechanism by which participants transfer purchasing power between countries, obtain or provide credit for international trade transaction, and minimize exposure to risks of exchange rate changes (Eitemen et al. 2004). In South Sulawesi, exporters tended to protect from risk exchange rate changes only for lobster, seaweed, marble, cement, cocoa and original chocolate for short period of time due to ensure that expected sales will not bear more risks (Adami 2008). This research found that spot rate and forward rate has significant impact to the nominal dollar will be received by exporter, however the different between amount of US dollar payments and sales contract could be eliminated when hedging undertaken for short period. In contrast the exporters have faced transaction exposure when period of forward contract exceed 3 months.

Exporters in South Sulawesi were very conscious in dealing with risk of exchange rate changes, due to global economic crisis in 2007 and 2009 some of exporters applied wait and see strategy which was mentored by Chocolate Exporter Association, the leading association for chocolate exporters. The exporters must follow association's strategy in order to protect the members from being affected by instability of rupiah that made the exporters faced loss in transaction. In other words, the exporters need to observe the fluctuation of US dollar and the price of commodity to determine the price of raw chocolate in local market. It is advisable to keep updating the latest foreign currency quote in order to prevent transaction exposure or economic exposure. The exporters must observe and aware fluctuation of currency to prevent risk because it effect production plan as the consequence of increasing in US$ currency would be followed by the increase for raw material (Tanjung 2011).

Indonesian experience for Asian Crisis in 1998 with exchange rate to US dollar was Rp 14 750 which tended to hit Indonesia economy because rupiah was devaluated 83.5% against US dollar (Dieter 1998). It was fragile condition for foreign exchange rate. Nevertheless, the Indonesian government work very hard to improve the economy through monetary policy. In the year 2009, Indonesia was able to manage global economy crisis when other countries have faced difficulties in organizing serious economy attack. Many researchers believed that Indonesia economy must be handled by well policy in the real economy. The real economy is believed to be more effective than stock exchange in order to achieve economy growth.

Voss and Willard (2009) noted that the real and nominal exchange rate appear to be disconnected from the real economy. Here, the researchers show that the related result that the real economy seems disconnected from the exchange rate. Their empirical model did not allow them to say anything specific about the possible explanations for this aspect of exchange rate behavior. Yet, it is suggestive of a possible line of inquiry and that is again the role of domestic monetary policy in response to these and other innovations that generates exchange rate volatility. If it were not for the induced variation in domestic interest rates, these exchange rate innovations might well have a greater role to play in explaining variation in domestic output and prices. Indeed the empirical evidence shown that the economy needs to have government intervention to protect local currency.

Other research (Neely 2008) explained that despite the small sample size, exchange rate regime and national income sometimes significantly explain the attitudes and beliefs of authorities on intervention. For example,

per capita GDP significantly explains whether a responding authority believes that substantial resources are important for the success of intervention. Floating rate authorities consider the size of intervention to be more likely to raise the probability of a successful intervention. And fixers are more likely to believe that coordination increases the probability that the market will detect secret interventions.

Indonesia gained good experience in protecting rupiah after the crisis in 1997, because after 1998 rupiah remain in stable position due to role of central bank to observe thoroughly any condition which may cause rupiah becoming devaluated. Intervention by the authorities need to be sure that rupiah would be sustained in the stable position as long as other macroeconomic indicators such inflation, interest rate, sustainable GDP could contribute to foreign currency exposure.

Hypothesis 2 *"The increase of US$ spot rate would decrease on the volume of export."*

Effect of Inflation to Export Performances

Each country tends to keep low inflation rate in order to achieve appropriate export performances. Inflation rate would affect decrease on purchasing power for individual or firms. The country with a high inflation rate would be less competitive in international market because cost of goods sold will be higher than similar product in other countries. The product from country with high inflation rate will more expensive therefore the price will not be competitive. Therefore the government emphasis is to keep low inflation rate and to prevent increasing in price for leading export commodities. Although inflation becoming obstacle in economy development, none of countries could avoid having an inflation, because the government could not prevent business people to implement price increase when the price of factor of production were also increase. The government only could implement market intervention by selling the product at reasonable price in order to prevent the price going faster.

It is Bank Indonesia's role to prevent hyperinflation and inflation brought under control. It was also Bank Indonesia's position that stabilizing price would subsequently strengthen the value of rupiah again other currencies (Goeltom 2007). Inflation would make the price become unpredictable and plan of export become unclear and exporters would bear risks of export. The government intervention directly to maintain price for product by market operation is one example to prevent inflation. However market operation do not guarantee that the price will stay longer because the government only control nine basic need product especially for consumption product.

The government was not involved directly in the business. The business people will be more effective to control inflation because they participate actively to decide the right price for product. The government is only able to persuade business people not to increase the price but not all traders would like to obey the government rules due to profit reason. Therefore, the government will not be able to prevent the increase of price because majority of participants in the market do not follow the government wish and market mechanism will control the price.

Inflation rate could be used as reference to exporters in order to test price elasticity for export commodity due to predict the condition of future cash flow. High inflation could make cash flow become uncertain because change in price would create low competitive advantage and export commodity will be less competitive.

Hypothesis 3 *"The increase in inflation rate would decrease in volume of export"*

The Effect of Interest Rate to Volume of Export

Interest rate represents cost of funds for debts which reduce the profit for the firms which used debt to their businesses. The volume of export could increase if interest

rate for use of debt by exporters was suitable to the business risk. Whereas for account holders, interest rate reflects the rewards of funds. Interest rate will affect cost funds of the firms. The lower the interest rate the lower the cost of funds would be. Nevertheless, it is very important for the firm to consider the degree of leverage because if the firm is in the position over leverage (more debt than equity in place assets), the business risk will concentrate to shareholders and debt holders did not bear risk on business risk (Brigham and Ehrhardt 2002).

Moreover, Baker (1997) described the theory of interest rate parity (IRP) pointed out that differences in nominal interest rates between currencies determine the premium or discounts on currencies in the forward foreign exchange market. In other words, the differences in national interest rate for securities of similar risk and maturity should be equal to, but opposite in sign to, the forward exchange rate discount or premium for the foreign currency, assuming away transactions costs and taxes on any gains.

For Indonesian exporters, the government policy is to maintain low interest rate for debt in export – import activities, and it is essential to increase the nation competitiveness and encouraging more businesses people participated internationally. In other words, reasonable interest rate would help exporters and importers become more competitive and efficient to participate in international market. Therefore to support exporters and importers competitiveness, the Indonesian government must subsidize the export-import credit and reduce export tax rate in order to let new exporter or importers survive in highly competitive market.

A research undertaken by Ahmed (2004) has investigated export barrier and firm internationalization of Lebanese entrepreneur; found that Lebanese entrepreneurs perceived the lack of government assistance to be a significantly important barrier to exporting. It is clear that Lebanese entrepreneurs continue to believe that their survival depends on assistance and protection. Lebanese entrepreneurs perceived competition from foreign firms to be a significantly important barrier as well. This clearly showed that international assistance programs should be targeted towards educating the Lebanese entrepreneur on how to compete in the global market. For the case of Indonesia, the entrepreneurs also seek government assistance to pursue the international market through implementation of export-import credit in which bank offers low interest rate and tax holiday to those industries that operate for international market.

The experience for Indonesia to handle an extremely high interest rate during the crisis in 1997, gave a good learning experience to keep BI rate at reasonable due to prevent another crisis with very high interest rate. It was vulnerable business growth especially for small enterprises after the crisis as many firms repaid bank debt, though belatedly despite the apparent willingness of many banks to reschedule debt (Tambunan 2000)

Hypothesis 4 *"Interest rate would affect decrease in volume of export"*

RESEARCH METHOD

The research was undertaken to 13 companies, the leading exporters for major leading product for South Sulawesi's industry, in June to December 2011, at the Makassar Industrial Estate (KIMA). The managers in duty for export activities who represented the firm in this survey were asked to explain which strategy and actions must be taken in dealing with the appreciation and depreciation (the fluctuation of Indonesian currency- rupiah) to prevent loss because of currency risks. The participants were asked to check whether or not they have implemented hedging strategy to protect their transaction from the rise or drop the US dollar quotation to rupiah. The participant also provided report from export activities during the period 2009 – 2011 made up 250 transactions for all active companies which exported cement, seaweed, box, cocoa, lobster and marbles. Thirteen managers in duty explained the hedging strategy was implemented for 250 transactions.

Table 1
Respondent's Company Profile of Leading Commodities in South Sulawesi

No	Firm Identity	Transaction	Denomination	Leading product	Country
1	PT SB	25	US$, RM	Cement	Malaysia
2	PT MKS	15	US$, ¥	Lobster	Japan
3	PT MKI	8	US$, ¥	Box	Japan
4	PT CMW	25	US$	Lobster	South Korea
5	PT MMT	28	US$, £	Cocoa powder	Singapore, Europe
6	PT HSG	24	US$.	Seaweed	South Korea
7	PT SLJ	35	US$, ¥	Lobster	Japan
8	PT MMM	15	US$, £	Marble	Japan, Europe
9	PT BSM	12	¥, US$	Marble	Japan
10	PT HKU	15	US$	Lobster	Japan
11	PT CM	22	US$, £	Cocoa	Europe, Singapore
12	PT BMI	18	¥ US$	Seaweed	South Korea
13	PT PU	8	US$	Cocoa	Japan

Source: Companies' annual report 2009-2011.

The questionnaires were designed based on the preliminary research to 30 export transactions for 5 companies undertaken in January to May 2011 for leading export commodities in South Sulawesi. The tested questionnaires were identified that exporters tended to choose the forward contract, hedging in money market (relying on interest from bank account) and not hedging for their transaction. The hedging instrument available to exporters gave them chance to protect transaction to prevent transaction exposure which caused loss for changing in foreign currency.

The in-depth interview was done to 13 managers in charge of export; all active exporters in KIMA were undertaken in June until December 2011, to verify the hedging strategy for 250 transaction for cement, cocoa, lobster, seaweed and marble and box. The period of export transactions in this research was transaction for 13 exporter companies during the period January 2009 until December 2011. There were 13 out of 20 exporters participated in the survey made up the response rate became 65 percent. The respondent (managers and directors) were asked to explain types of hedging strategy to deal with the fluctuation of Rupiah to US$, spot rate reference, interest rate reference and inflation reference used. Spot rate reference is the currency of US$ to Indonesian Rupiah in contract. Interest rate reference is the interest rate for cost of debt for exporter, while inflation reference the reference for the increase cost of factor production in domestic market combined with the increase in price of commodities in foreign market.

DATA ANALYSIS AND DISCUSSION

Respondent Profile

Table 1 shows characteristic of respondents, which describe firm identity, number of transaction, currency used, leading product and country trading partners.

Table 1 indicates thirteen firm exporters participated in the survey, 250 transactions were observed to find out what hedging strategy were implemented to protect currency used. Most of firms transaction with US$, Yen Japan, and Pound Sterling for six leading commodities exported to USA, Japan, Singapore, South Korea Europe and Malaysia. Thirteen companies use US$ for their transactions, five exporters use Japanese ¥, three exporters traded for British Pound (£) and only one use Malaysian Ringgit (RM).

The Table 2 below shown the variables covered in this research, these variables are inflation reference, cost of hedging, spot rate reference (Rupiah to US$) and the volume

of export in dollar (US$).

The data in Table 2 shows thirteen firms participated in the survey for three years period with 250 transactions observed. The table indicated three top biggest exporters PT BS, PT MMT and PT CM have big volume of export. PT MMT has volume for three years in average of US$ 7 085 733.33 followed by PT CM with the volume of US$ 6 894 232.33 and PT BS with US$ 6 717 542.33

Table 2 also shows that PT MKI has volume of export for three years in average of US$1 202,753.3 per year and PT BMI with volume of export for three years in average of US$ 1,444,442.7 for year. The variety cost of hedging was based on the volume of export. PT MMT also the highest cost of hedging among the samples. Spot rate of references range from Rp 8,691 to Rp 9,450; inflation reference range from 7% to 13 % and interest rate reference range from 11% to 15%.

Regression of Variables

Table 3 indicated that cost of hedging (CH), Inflation reference (IR) and Interest Rate Reference (IRR) contributed significantly to volume of export (Y), whereas US$ Spot Reference (SR) did not affect significantly volume of export. Based on the table, the regression could be expressed as the following

Y = -148244.09 + 36.56 CH - .011 SR + 5289.12 IR+ 7711.04 IRR

Where:

Y : the volume of export in US$.
CH : Cost of hedging in US$.
SR : Spot Rate in Indonesian Rupiah to US$.
IR : Inflation references in per cent.
IRR : Interest Rate references in per cent.

Firstly, if cost of hedging increased, the volume of export also will increased as shown the regression coefficient for CH is 36.56. This result supported the proposed hypothesis 1. Most of exporters spent around 2 – 3 percent from sales for taking hedging position. This result consists of what found in Fornes and Cardoza (2009:20) and Eiteman et al. (2004:199) which was hoped to take position to prevent foreign exchange risks. Exporters believed that costs of hedging were thought as compulsory and it is important to increase the volume of export because hedging could prevent big loss as the consequence transaction exposure.

Secondly, the result for US$ spot rate variable observed indicated that if spot rate reference is high the volume of export will decrease. In other words if US$ were appreciated to Rupiah, or Rupiah were devaluated (Rupiah were under value) the volume of export were decreased. This seems to be consists with Eiteman et al. (2004) and Tanjung (2011). The result supported the proposed hypothesis 2. Although result shown the decrease of sales volume of export but the probability were not affect significantly.

The researcher argues that most of exporters was not affected by the rise of US$ currency because the leading commodities such as cement, seaweed, lobster, cocoa and marble, have high competitiveness because the margin of sales were very high. The effect of fluctuation on currency was still be coped by gaining more profit from export activities. Exporters were able to protect their transaction by adding the volume of export thorough market expansion and finding new customer in the same country target. Although this research found that spot rate rupiah to US dollar was not significant, in reality many transactions in this survey were protected through hedging, the exporters were very conservative to the currency change. Therefore the spot rate variable plays important sign to exporters to decide the sales contract, this result similar to the theory developed by Baker (1997) and Shapiro (1999).

Thirdly, in terms inflation rate reference, it is observable that the increase of the price of raw materials, wages and other production cost combined with the increase of price the commodity in foreign market, were still able to increase volume of export of commodities. It is surprising to find that inflation

Table 2
Summaries of Companies References in for Export Transaction in South Sulawesi

No.	Firm Identity	Year	Cost of Hedging (US$)	Spot Rate Ref. (Rp)	Interest Rate Ref (%)	Inflation Ref.	Volume of Export (US$)	Vol. of Export Average (US$)
1	PT SB	2009	209,652	9,054	14.0%	10.56%	6,988,433	
		2010	118,013	9,200	12.0%	6%	4,800,676	
		2011	209,087	8,791	14.5%	7%	8,363,518	6,717,542.33
2	PT MKS	2009	87,516	9,125	13.5%	9.12%	3,500,645	
		2010	32,427	9,090	12.0%	7.9%	1,080,900	
		2011	120,317	8,965	15.0%	8.1%	4,010,589	2,864,044.70
3	PT MKI	2009	27,775	9,230	13.4%	10%	957,760	
		2010	28,417	9,050	14.5%	8.3%	1,052,500	
		2011	39,950	8,965	15.0%	9%	1,598,000	1,202,753.30
4	PT CMW	2009	95,756	9,407	14.0%	11%	3,830,250	
		2010	47,260	9,065	13.0%	9%	1,750,400	
		2011	95,044	8,930	15.0%	7%	3,960,200	3,180,283.30
5	PT MMT	2009	231,187	9,280	13.0%	12%	8,256,700	
		2010	158,340	9,090	13.0%	9.75%	5,460,000	
		2011	226,215	9,245	15.0%	8.2%	7,540,500	7,085,733.33
6	PT HSG	2009	59,766	9,350	13.7%	13%	2,060,900	
		2010	36,359	9,225	14.0%	10.15%	1,346,640	
		2011	57,450	9,095	14.5%	8.7%	1,915,000	1,774,180.00
7	PT SLJ	2009	42,914	9,358	13.0%	9.8%	1,430,488	
		2010	54,709	9,164	12.0%	8.2	2,026,286	
		2011	35,718	8,983	14.0%	7.5%	1,231,657	1,562,810.30
8	PT MMM	2009	59,091	9,450	14.0%	10%	1,969,700	
		2010	45,775	9,005	13.8%	8%	1,831,000	
		2011	46,953	8,750	15.0%	9%	1,739,000	1,856,566.70
9	PT BSM	2009	81,167	9,215	14.7%	12.5%	3,006,200	
		2010	86,056	9,135	15.0%	10.3%	2,967,450	
		2011	24,315	8,970	15.0%	9.75%	1,057,200	2,343,616.70
10	PT HKU	2009	27,852	9,450	11.0%	8%	960,400	
		2010	66,763	9,190	13.0%	10.5%	2,670,500	
		2011	51,011	8,950	12.0%	7.6%	1,759,000	1,796,500.00
11	PT CM	2009	225,392	9,241	14.7%	12%	7,513,059	
		2010	179,970	9,064	15.0%	9.5%	7,198,800	
		2011	173,154	8,691	12.0%	10%	5,970,838	6,894,232.33
12	PT BMI	2009	34,333	9,175	13.1%	10.5%	1,492,760	
		2010	43,403	8,960	14.0%	8.5%	1,496,650	
		2011	33,673	8,750	15.0%	7.5%	1,346,918	1,445,442.70
13	PT PU	2009	178,559	9,107	12.0%	12%	5,951,968	
		2010	182,160	8,987	11.0%	9%	6,281,381	
		2011	93,471	8,890	14.0%	7%	4,063,969	5,432,439.30

Source: Companies' annual reports 2009-2011.

did not reduce the volume of export. The proposed hypothesis 3 rejected. Although inflation reference tended to have positive effect to volume of export, the exporters believed that the increase of raw material, wages and other cost of production were still be captured by the increase in price for foreign market. Therefore exporters were very keen to keep sending the commodities to foreign market. This result also consists of result found Ahmed (2004) even though government intervention is lacking and con-

Table 3
Regression of Variables of Export Leading Commodities South Sulawesi

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-148244.095	47959.989		-3.091	.002
	Cost of Hedging	36.564	.570	.974	64.155	.000
	US Spot	-.011	.542	.000	-.021	.984
	Inflation Ref	5289.120	2146.303	.035	2.464	.014
	Interest	7711.046	3231.686	.026	2.386	.018

Source: Developed for this research.

Table 4
Hedging Strategy of Exporters in South Sulawesi

No.	Firm Id.	Hedging Implemented				
		Buying long Forward	Buying short Forward	Hedging in money market	Currency Swap	Unhedging
1	PT SB	√		√		
2	PT MKS		√			
3	PT MKI					√
4	PT CMW			√		
5	PT MMT		√		√	
6	PT HSG				√	
7	PT SLJ		√	√		
8	PT MMM	√		√		
9	PT BSM	√			√	
10	PT HKU			√		
11	PT CM	√				
12	PT BMI			√		
13	PT PU					√

Source: Indepth interview to managers 2011.

tradict to result found in (Goeltom 2007) which inflation became export obstacles. However this research also contradicts what concept was developed by Baker (1997) and Shapiro (1999), these authors believe that inflation rate could become export barrier and inflation affected negative to the volume of export.

Finally, the increase of interest rate reference also makes the increase in volume of export. This result indicated that interest rate reference used by exporters were still in moderate, even though interest rate references increased, the exporters were able to maintain volume of export. The result rejected the proposed hypothesis 4. One of the advantages for keeping interest rate low is to keep exporter's ability to stay in industry when interest rate was increased slowly. This result contradict to what found in (Brigham and Ehrhardt 2002) which interest rate bear risks of business. The finding is also inconsistent to Fisher Effect theory that found the higher interest the low of export performances (Baker 1997; Shapiro 1999).

Implementation of Hedging Strategy

In order to protect export transaction from

currency risks, the exporters implement the following hedging strategy as seen Table 4.

Table 4 presents the type of hedging instruments chosen by the firm to export transactions. Majority of exporters believed that hedging in money market thorough interest rate seem to be more effective than any other types of hedging. Relying on return from interest payment is more reliable than other strategy. There were 6 out of 13 companies implemented money market instrument. A few firms, 4 out of 13, implemented long forward instrument because the exporters believed that the commodities could stay longer in the market such as marble and cement, the products bearing less risks. Whereas seaweed, cocoa and lobster were more suitable for buying currency swap and long forward due to ensure that lag time for payment were very short. It is also interesting to see two firms with US$ currency will appreciate or depreciate to Indonesian Rupiah even the product life have short time such as cocoa. These two firms, PU and MKI, were staying for position not to hedge their transactions. This result contradicts to Huang (2010) which found the exporters cannot delay the payment for hedging to protect from currency fluctuation. These exporters have very good relationship to overseas buyer and they ensured that the trading partners were trusty and fair. This result also contradicts to Baker (1997) and Shapiro (1999) which concerned the exporters to take precise rate for foreign currencies to protect transaction exposure.

The exporters implemented hedging strategy based on their experiences in handling currency fluctuation in the past. They considered reliability, accessibility and affordability in choosing hedging instruments. The exporters familiar to bank transaction, therefore hedging in money market is more suitable and match with exporter knowledge and experiences. Long forward and swap currency were chosen because their trading partners proposed and became compulsory. Exporters committed to implement more than one hedging method as the consequence of counterpart requirement. The trading partners wanted to keep the exporters stay in the market for long period and the exporters maintain their competitiveness. These results consist those found in (Dohring 2008) and (Adami 2008) which trading partners also play roles in choosing hedging strategy for exporters.

CONCLUSION, IMPLICATION, SUGGESTION AND LIMITATIONS

The finding of this research indicates that the increase in cost of hedging, inflation references and interest rate references affected to the increase of volume of export. Whereas, rupiah spot rate to US dollar did not affect the volume of exports.

The exporters have committed to protect their transaction by cost of hedging which could increase the volume of export during the last three years. Although the increase in inflation reference and interest rate reference were believed becoming obstacles for export performance, the exporters in South Sulawesi were not affected due to reasonable rate of interest for debt and the increase of production costs were captured by the increase of price commodities in foreign market.

In contrast, the increase of spot rate for US$ to Indonesian Rupiah affected insignificantly in reducing the volume of export. This finding contradicted to previous research which believed that appreciation dollar could increase the volume of export. This finding approved that the exporters tended to consider carefully to spot rate before making decision to send the product.

The exporters also very keen to determine hedging strategy to protect their transaction, as most of the firms relying money market instrument (hoping the return from interest rate) to cope with foreign exchange exposure. A few firms also implemented long forward hedging as the product life could stay longer in the market, while the firms with short life cycle product, chosen short forward hedging and swap currency based on advice from their trading partners. It is also important to note that the finding

also revealed that two firms did not worry about foreign currency exposure because trading partners guarantee, sometimes firms stay not to hedge their transaction.

The exporters' responses revealed different results compared to the previous research. The respondents received reasonable interest rate and suitable increase in price of factor production and price of product in foreign market. This will give positive result for volume of export. Even though the increase of interest rate references and inflation references could increase in volume of export, the government must introduce low interest rate for debt to exporters and prevent the increase of factors production cost in domestic market due to encourage exporters have stable competitiveness level. The government must prevent unnecessary cost created by local associations, which made production cost increase would effect to export performances.

This research relies on 250 transactions for three years period; the formulation of hedging strategy might be based on the exporters' strategy for the last three years. This will reveal different result if the period is longer than three years. The researcher is also aware that this might be based on subjective opinion, and the results do not consist of facts in the observed export documents. For further research, the researcher could extent to longer period in observed export document and it is possible to observed import document. The researcher was also aware of subjective choices by exporters who may exist when they answer written questionnaires. This is because the respondents answered questionnaires by themselves.

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