

IMPACT OF SERVICE DIVERSIFICATION ON TRADE FINANCE IN THE VIETNAM JOINT STOCK COMMERCIAL BANK FOR INDUSTRY AND TRADE

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ABSTRACT

In order to adapt to the changes in the socio-economic environment, especially after the Covid-19 pandemic, it is a necessity for Vietnamese banks to innovate and develop trade finance services. This study was conducted with a survey of 165 employees working at Vietnam Joint Stock Commercial Bank for Industry and Trade (VietinBank) in 2023. The article aimed to find out the main factors affecting trade finance activities in order to give out reasonable measures to enhance the activities, which generate “fee income” - the majority of non-interest income for the bank. By the exploratory factor analysis (EFA) method, the results showed that the diversification of services, especially UPAS L/C, has had the greatest positive impact on promoting trade finance. In addition, financial capacity and digital transformation also have had positive impacts, but risk has had a negative impact on trade finance in VietinBank. Based on these results, the article proposes some recommendations to promote trade finance at VietinBank in the near future.

Keywords: Covid-19, digital transformation, service diversification, trade finance, VietinBank.

Tác động của đa dạng hóa dịch vụ đến tài trợ thương mại của Ngân hàng Thương mại Cổ phần Công thương Việt Nam

TÓM TẮT

Để thích ứng với sự thay đổi của môi trường kinh tế - xã hội, đặc biệt là đại dịch COVID-19, đòi hỏi các ngân hàng tại Việt Nam phải đổi mới và phát triển các loại hình dịch vụ trong đó có tài trợ thương mại. Với số liệu khảo sát từ 165 nhân viên làm việc tại Ngân hàng thương mại cổ phần Công thương Việt Nam (VietinBank) trong năm 2023. Bài viết với mục đích tìm ra được các yếu tố chính tác động tới hoạt động tài trợ thương mại, để từ đó có các biện pháp hợp lý tăng cường phát triển hoạt động tài trợ thương mại, hoạt động tạo ra “thu nhập từ phí”, chiếm phần lớn trong thu nhập ngoài lãi của ngân hàng. Bằng phương pháp phân tích yếu tố khám phá (EFA), nghiên cứu này đã chỉ ra việc đa dạng hóa dịch vụ trong đó phải kể đến là sản phẩm UPAS LC đã có tác động tích cực nhất tới việc đẩy mạnh hoạt động tài trợ thương mại. Ngoài ra, các yếu tố như năng lực tài chính và ứng dụng chuyển đổi số cũng tác động tích cực, nhưng rủi ro lại là nhân tố tác động tiêu cực đến hoạt động tài trợ thương mại tại VietinBank. Từ đó, bài viết đề xuất một số kiến nghị nhằm thúc đẩy hoạt động tài trợ thương mại tại VietinBank trong thời gian tới.

Từ khóa: Covid-19, chuyển đổi số, đa dạng hóa dịch vụ, tài trợ thương mại, VietinBank.

1. INTRODUCTION

Recently, most central banks around the world have implemented tightened monetary policies as well as increased interest rates to control inflation. The State Bank of Vietnam (SBV) has applied a tightening policy of credit rooms, peaking at the end of 2021 and 2022. In

this context, Vietnamese commercial banks had to step up their trade finance services to ensure the growth of non-interest income, together with controlling outstanding loans under the limit of the State Bank.

Trade finance is another form of commercial lending, acting as a payment intermediary between buyers and sellers in

business activities (TheBank, 2019). Trade finance is regarded as a safe activity for commercial banks (VietinBank, 2023). Therefore, trade finance plays an integral part in driving trade (Boshoff *et al.*, 2020) because it provides payment methods as well as debt financing. Central banks around the world continue to struggle with the negative impacts of the pandemic on the global economy using different policy tools to maintain borrowing and to support access to credit to businesses and households. In this situation, trade finance provided by banks has kept a low-risk profile in these turbulent times (Todorova, 2023).

In another study, Nguyen Hong Hanh (2021) showed that trade finance activities play an important role in global trade. Basically, international transactions are always more complicated than domestic ones as exporters (sellers) and importers (buyers) in different countries face many potential risks such as payment risk, exchange risk, political risk, legal risk, etc. To resolve and balance the benefits and risks between parties in cross-border transactions, trade finance products such as letters of credit or guarantees provided by banks were born. Besides, revenue from trade finance currently accounts for a significant proportion of banks' fee collection (TheBank, 2019). According to Dao Le Kieu Oanh & Pham Anh Thuy (2012), profit from non-credit services contributes significantly to the total operating income of a bank. Especially under the conditions of many hidden credit activity risks when investment activities meet many difficulties. In short, trade finance plays an important role in international trade, providing capital and financial instruments for firms to smoothly trade across borders. In return, this activity generates a major part of the non-interest income for banks.

Diversifying sources of debt financing, including trade finance services, is an important activity in capital financing for businesses, especially during the Covid-19 epidemic. According to Vu Huu Thanh & Nguyen Minh Ha (2018), this diversification helps firms be

flexible in capital mobilization from which investment activities can be implemented more easily, especially investments in related industries. Investments in related industries will have the opportunity to create efficiency in the future. Because of this crucial role, banks always pay much attention to promote trade finance activities, in which developing new products or diversifying services is seen as effective ways.

Diversification of product in business is a practice of a company doing business in more than one product or business field (Weichieh & Tsang, 2015). For commercial banks, diversification of products and services have served importance roles for the operations (Stiroh, 2004; Abuzayed *et al.*, 2018). According to Stiroh (2004), diversifying revenue sources, including transaction revenue, fee collection, and other non-interest income, helps U.S. commercial banks save operating expenses as well as sharing costs. Meanwhile, Mercieca *et al.* (2007) and Doumpos *et al.* (2016) indicated that non-interest income generated by new products and services and/or traditional interest income are important for the income diversification of banks. Thus, diversifying services of trade finance is considered as an effective "leverage" to help commercial banks increase non-interest income.

VietinBank was established in 1988 on the basis of separation from the State Bank of Vietnam. In 2009, VietinBank successfully equitized, and since then it has developed and continuously grown. VietinBank currently has its headquarters in Hanoi and owns more than 155 branches in 63 provinces and cities, 958 transaction offices, two representative offices in Ho Chi Minh City and Da Nang City, and one Center for Trade Finance. At the end of 2022, the total assets of VietinBank were 1,808.43 trillion VND. VietinBank is a large commercial bank, playing an important role in the Vietnamese banking industry (Vietinbank, 2022). It was the first bank in Vietnam to open a branch in Europe, marking a notable development of Vietnam's financial system in the world market.

In 2021 and 2022, VietinBank had impressive growth in international payments and trade finance despite the outbreak of the Covid-19 epidemic (Thu Hue, 2022). Having this success was greatly thanks to service diversification, which serves well the needs of customers in difficult times. During and after the epidemic, both the customers' requirements and the bank's operations changed significantly (Nguyen Hong Hanh, 2021). In fact, the customers became accustomed to online trade and financing services, for example through the Internet Banking VietinBank Trade Portal. In addition, there was a need to provide intensive services such as usance payable at sight letter of credit (UPAS L/C), which provides payment tasks as well as debt financing services. On the bank side, they needed to have comprehensive service packages, for example opening L/C, buying foreign currency, and managing cash, among others.

In summary, trade finance plays an important role in VietinBank's operations. However, this activity increasingly faces more challenges, namely (1) Customers currently demand resources for convenience and efficiency as well as for providing new experiences, especially under disease quarantine conditions; (2) The competitive environment of the banking sector, especially in the context of digitalization, and increasingly diverse products and services; and (3) Diversifying services to develop trade finance activities (especially the "fee income" area) of VietinBank still does not reach its potential and is less diverse than other joint stock banks. Therefore, it is essential for VietinBank to identify the positive and negative factors, especially those of significance, affecting trade finance activities to meet changing customer needs and compete successfully. This study was conducted to test the factors affecting trade finance in the case of VietinBank in order to evaluate the impact of service diversification on trade finance during and after the Covid-19 pandemic, thereby allowing for the proposal of recommendations for the further development of trade finance activities.

2. METHODS

2.1. Research hypothesis

The banks' trade finance activities were affected by subjective factors such as financial capacity, service diversification, total assets, information technology, network of banks, and staff qualifications as well as objective factors such as risk, foreign exchange policies of state banks, and changes in economic and political policies of foreign countries. Through preliminary surveys with leaders and staffs working at VietinBank, four factors were proposed to be the most important in the current situation, namely financial capacity, digital transformation, risk, and service diversification. Table 1 shows the results of prior research about these four factors. However, in terms of the interactions among these factors and which one has played the most effective role in the extreme conditions of the epidemic, there are not many published works.

Based on previous studies and preliminary surveys with leaders and staffs working at VietinBank, the article proposes the following research hypotheses:

Hypothesis 1: Service diversification

Most previous studies have shown that there is a positive link between diversification of products and services with trade finance. For example, service diversification means that banks can conduct more operations such as fee collection, commissions, sales, etc. to promote non-interest income sources besides focusing on capital mobilization and lending (Nguyen *et al.*, 2016; Le Dinh Luan *et al.*, 2021). In addition, trade finance has been determined to be an important channel to help banks reach their growth targets of service (Tran Thi Hien Luong, 2019). It is necessary for banks to not stop at available financing products but instead, they should design specialized products to suit the unique characteristics of each group of business customers, or in other words, diversify their services. However, there are still inconsistent views. For instance, product diversification was reported to have a non-linear correlation with the business performance of an enterprise

(Nguyen Minh Ha & Nguyen Van Hien, 2014). In this research, increasing the product diversification is believed to reduce the business performance when the product diversification index (PDI) is at a low level (< 0.43). On the contrary, it will increase the efficiency of enterprises in using assets when the PDI is at a high level (≥ 0.43). Therefore, hypothesis H1 was proposed as follows:

H1: Service diversification has a positive impact on the trade finance activities of VietinBank.

Hypothesis 2: Financial capacity

The financial capacity of a bank is understood as using its finances to facilitate the effective operation of the system. To have stable and safe system of trade finance, having the capacity of finances allows the bank to meet the requirements of both domestic and import-export businesses. The finance capacity has been shown to be positively related to competitiveness in all areas of banks in previous reports (Vo Xuan Vinh & Duong Thi Anh Tien, 2017; Abuzayed *et al.*, 2018). Moreover, expanding relationships with correspondent banks, and

establishing limits at these agent banks to take advantage of foreign currency capital have been shown to be effective ways to enhance trade finance service (Tran Thi Hien Luong, 2019; Ngo Thi Thanh Thao, 2021). Thus, the study proposed hypothesis H2 as follows:

H2: Financial capacity has a positive impact on trade finance activities.

Hypothesis 3: Digital transformation

Previous studies have shown a positive relationship between digital banking with bank competitiveness as well as customer satisfaction (Tinashe & Kelvin, 2016; Hammoud *et al.*, 2018). Moreover, digital transformation through e-banking and digital banking applications as well as the rapid penetration of financial technology companies (fintech) are important factors that positively affect the competitiveness of commercial banks (Nguyen Thi Nhu Quynh & Le Dinh Luan, 2022). Although there are some risks, the digitization process boosted trade finance activities during the Covid-19 period (Nguyen Hong Hanh, 2021). Hypothesis H3 was proposed as follows:

Table 1. Factors and prior research

Publication year	Prior research	Influence trend: Positive (+)/ negative (-)			
		Service diversification	Financial capacity	Digital transformation	Risk
2004	Stiroh 2004	+			
2006	Saunders <i>et al.</i> (2006)				-
2007	Mercieca <i>et al.</i> (2007)	+			
2014	Nguyen Minh Ha & Nguyen Van Hien (2014)	+/-			
2016	Doumpos <i>et al.</i> (2016)	+			
2016	Nguyen <i>et al.</i> (2016)	+			
2016	Tinashe & Kelvin (2016)			+	
2017	Vo Xuan Vinh & Duong Thi Anh Tien (2017)		+		
2018	Abuzayed <i>et al.</i> (2018)	+	+		
2018	Vu Huu Thanh & Nguyen Minh Ha (2018)	+			
2018	Hammoud <i>et al.</i> (2018)			+	
2019	Tran Thi Hien Luong (2019)	+	+		-
2019	Huynh Thi Huong Thao (2019)				-
2021	Le Dinh Luan <i>et al.</i> (2021)	+			
2021	Ngo Thi Thanh Thao (2021)	+	+	+	-
2021	Nguyen Hong Hanh (2021)			+	
2022	Nguyen Thi Nhu Quynh & Le Dinh Luan (2022)	+	+	+	-

H3: Digital transformation has a positive impact on VietinBank's trade finance activities.

Hypothesis 4. Risk

In working operations, a bank normally faces many risks in different fields such as interest rates, liquidity, and, especially, credit and exchange rates. It has been reported that all of these risks have adverse impacts on the trade finance of banks (Saunders *et al.*, 2006; Huynh Thi Huong Thao, 2019). Furthermore, the activities of commercial banks face many risks such as bad debt, interest rate risk, exchange rate risk, debtor bankruptcy, financial and credit crisis, etc., which all have negative impacts on trade finance (Tran Thi Hien Luong, 2019). Thus, the study proposed hypothesis H4 as follows:

H4: Risk has a negative impact on VietinBank's trade finance activities.

Exploratory factor analysis, or EFA for short, is used to reduce a set of k observed variables into a set F (with $F < k$) of more meaningful factors. Research can collect many observed variables that are correlated with each other. Instead of studying all the small variables, EFA allows researchers to study a number of large factors, each of which includes the small variables that are correlated with each other. Thus, this study found that using exploratory factor analysis (EFA) and using SPSS were suitable for the purposes of this article.

A model of relationships among the factors affecting trade finance activities is shown in Figure 1. The study proposed four main factors affecting trade finance activities and collected information about the relevant variables for

each main factor through preliminary surveys.

2.2. Data analysis

In this research, two steps, namely a preliminary survey to adjust the scale and the official research, were conducted.

Preliminary survey:

Preliminary research was conducted through qualitative research methods. Interviews were conducted directly or by telephone and online questionnaires with leaders and staffs at both the Trade Finance Center and branches of VietinBank to identify the main criteria of each factor affecting trade finance. There are many criteria affecting financial capacity, digital transformation, risk, and service diversification. However, the study only collected information that strongly impacted trade finance activities in the timeframe of the study. In detail:

- Diversification of services was considered in terms of quantity (trade finance services, supporting services) and collected fees (from non-interest services, from trade finance services, from highest contributing service).
- Financial capacity was considered on the basis of factors affecting VietinBank's trade finance capacity
- Digital transformation was considered from the aspects of information technology systems, applied digital banking services, and applications to increase customer experience.
- Risks were considered in terms of direct and indirect related risks

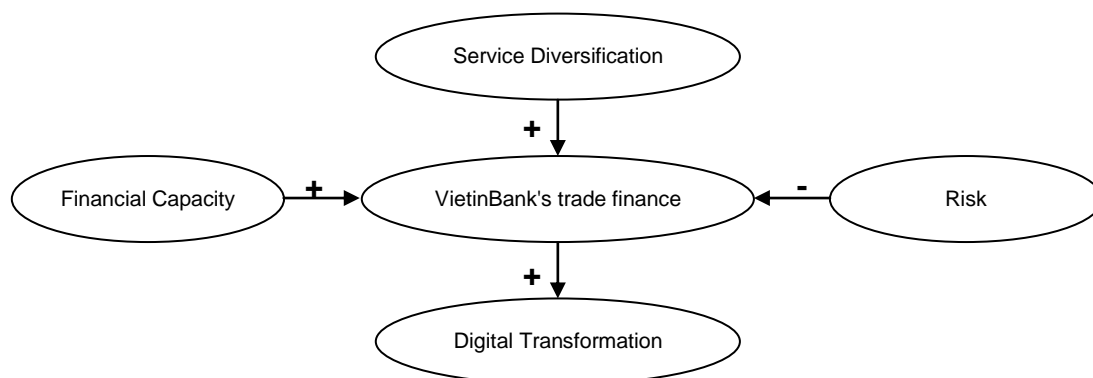


Figure 1. Interaction model of influencing factors

The questionnaire was based on published research that has indicated criteria affecting each main factor, and then a survey of subjects was conducted to find the most important criteria. As a result, there were 15 criteria that the survey subjects identified as important, affecting the four main factors.

With the proposed four main factors and 15 criteria in the survey questions, preliminary analyses were conducted to determine the appropriateness of the survey for further research. The results showed that the reliability coefficients of the scale all met the requirements.

The Likert scale was adjusted to closely match the actual situation of each factor in the final online interview questionnaire. The Likert scale used had five levels: (1) Strongly disagree, (2) Disagree, (3) Neutral, (4) Agree, and (5) Strongly agree.

Official research:

First, the study needed to determine the minimum number of samples. According to Hair (2009), the minimum number of samples for exploratory factor analysis (EFA) is: $n = 5 \times m$ (where n is the minimum number of samples and m is the number of observed variables). In addition, the minimum number of samples is: $n \geq 8 \times p + 50$ (where n is the minimum number of samples required and p is the number of independent variables) for multivariate regression analysis (Tabachnick et al., 2007). In this study, the model had four independent variables (factors) with a total of 15 observed variables (criteria), so the minimum number of samples for the survey was calculated as 82.

2.3. Data collection

The survey subjects included leaders, staffs, specialists, managers, executives, and supervisors working at the VietinBank Trade Finance Center (VTFC) and three branches of VietinBank. Of these three, one branch was in Hanoi and one was in Ho Chi Minh City, as these two branches are located in the two cities having the greatest revenue and non-interest income from trade finance activities, and the

third one recently had a notable performance in trade finance. These branches were also shown to have close relationships with their customers. Choosing these three typical branches was meaningful in the survey and increased the possibility of developing trade finance services in the future. Twenty-five online questionnaires were sent to each branch, for a total of 75 surveys for the three branches. The rest (107 questionnaires) were conducted at the VietinBank Trade Finance Center. This was due to the fact that trade finance activities are handled centrally at the center. The VTFC also has statistic data information about the trade finance activities of the bank as well as knowledge of plans for setting up strategic targets for the development of trade finance activities in the future. The questionnaires were sent online to all the survey subjects in the period from April to May 2023. The survey results showed that 165 out of 182 people completed and met the requirements of the questionnaire, while 17 questionnaires were eliminated because they did not meet the requirements. This number (165) complied with the minimum sample requirement (82 samples) for this study. Data from the survey were collected and analyzed using the SPSS 22.0 program.

3. RESULTS AND DISCUSSION

3.1. Overview of VietinBank performance

Since its establishment, VietinBank has continuously grown and established close relationships with more than 1,000 agent banks in 90 countries and territories worldwide. For many years, VietinBank has been one of leading Vietnamese banks due to contributions from the large non-interest income of trade finance. In 2022, due to the Covid-19 pandemic, economic growth slowed down in Vietnam and over the world. However, the ratio of non-interest income still accounted 25.5% of the total income, which was much higher than that in 2021 (Table 2). This was a positive trend. Because of fierce competition among banks, income from traditional activities (interest

income) has decreased sharply. Increased non-interest income creates stable development for banks. In addition, this source of income also carries less risk. In the first five months of 2022, the sales revenue from trade finance increased by 41.3% over the sales revenue from the same time period in 2021. This result was due to increases in income from both sales of UPAS L/C to corporate customers and trade finance loans for domestic banks, which were 64% and 100%, respectively, over those from the same time period of 2021 (Thu Hue, 2022). UPAS L/C (usance L/C payable at sight) is a deferred documentary credit payment method, but the seller can receive immediate payment through a capital advance from correspondent

banks. The difference between the fee paid to the correspondent bank and the fee collected from the customer is calculated as the UPAS L/C fee and this fee is usually much higher than the normal L/C fee. Furthermore, during the Covid-19 period, or other times when domestic banks are scarce in capital, UPAS is an effective way for customers to make payments to their partners thanks to the agent bank's capital and the lower capital costs than those of domestic banks. VietinBank is a large state-owned bank and has a wide range of correspondent banks, meaning these banks can support debt financing for its customers during difficult times. As a result, the increase in UPAS L/C sales created more fee income for VietinBank.

Table 2. Performance Data of VietinBank in 2022

Criteria	Performing data (trillion VND)	Increase compared 2021 (%)
Total assets	1,808.43	+ 18.1
Consolidated capital sources	1,340.54	+ 9.3
Credit balance at the end of the period	1,279.82	+ 12.1
Consolidated pre-tax profit	20.94	+ 19.1
Non-interest income	16.30	+ 43.6
Percentage of non-interest income/Total operating income	25.5%	+ 4.1%

Source: Data up to Dec. 31, 2022, VietinBank

Table 3. Information of the survey samples (165)

	Category	Number of people	Ratio (%)
Sex	Male	63	38.18
	Female	102	61.82
Age	Under 30 years old	66	40.00
	From 30 to 45 years old	95	57.58
	Over 45 years old	4	2.42
Qualifications	Graduated	132	80.00
	Post Graduated	29	17.58
	Under college	4	2.42
Position	Staffs	45	27.27
	Specialists	74	44.85
	Superiors	25	15.15
	Managers	21	12.73
Seniority of work	Under 5 years	58	35.15
	From 5 to 10 years	62	37.58
	Over 10 years	45	27.27

Summary information of the survey samples

The summarized information of the survey samples is shown in Table 3.

3.2. Results*- Cronbach's Alpha test results for scale reliability*

By testing the reliability of the Cronbach's Alpha scale, the study was able to evaluate the relationship between variables in the same group and the same factor. According to Peterson (1994), the reliability of the Likert scale can be verified with the Cronbach's Alpha coefficient value when the value is in the range of 0.6 to 1.0. In detail, values from 0.6 to 0.7 mean a new concept of scale; values from 0.7 to 0.8 mean an acceptable scale; and values from 0.8 to 1.0 mean a good scale. In addition, the coefficient value of correlation between each observed variable with the total observed

variables (corrected item-total correlation) must reach a value of 0.3 or higher.

The analysis results of the factors affecting trade finance showed that the Cronbach's Alpha coefficient values for the four selected factors, namely service diversification, financial capacity, digital transformation, and risk, were 0.894, 0.833, 0.821, and 0.815, respectively (Table 4). In the service diversification factor, the hypothesis that the number of services had a positive impact on the development of trade finance was rejected (Table 4). This indicated that trade finance activities strongly depend on the quality of services (intensive services) and less on the quantity of services in VietinBank. Of the risk factors, liquidity was excluded as a criterion, which showed that liquidity risk was well controlled in VietinBank. Therefore, 13 out of the 15 observed variables remained in the study as shown in Table 4.

Table 4. Cronbach's Alpha test results

Encode	Perception variables	Corrected item-total correlation
DDH	Service diversification factor (Cronbach's Alpha = 0.894)	
DDH1	The number of services has a positive effect on the development of trade finance activities	eliminated
DDH2	UPAS L/C service has a positive influence on the development of trade finance activities	0.785
DDH3	Income from non-interest activities has a positive influence on trade finance activities	0.858
DDH4	Diversification of non-interest income has a positive effect on trade finance activities	0.784
DDH5	Diversifying foreign currency supply has a positive impact on trade finance activities	0.651
TC	Financial capacity factor (Cronbach's Alpha = 0.833)	
TC1	The size of the bank's total assets has a positive influence on trade finance activities	0.620
TC2	Transaction limits with domestic and foreign correspondent banks have a positive effect on trade finance activities	0.669
TC3	The deposit mobilization volume has a positive influence on trade financing activities	0.831
CDS	Digital transformation factor (Cronbach's Alpha = 0.821)	
CDS1	Applying information technology promotes trade finance activities	0.631
CDS2	Digital banking services (eBanking, Trade Portal, APIs...) have a positive impact on trade finance activities	0.675
CDS3	IT applications enhance customer experience and promote the development of trade finance activities	0.726
RR	Risk factor (Cronbach's Alpha = 0.815)	
RR1	Exchange rate risk has a negative impact on trade finance activities	0.617
RR2	Interest rate risk has a negative impact on trade finance activities	0.744
RR3	The risk of the Covid-19 epidemic has a negative impact on trade finance activities	0.650
RR4	Liquidity risk	eliminated

Note: DDH: service diversification; TC: financial capacity; CDS: digital transformation; RR: risk.

Table 5. Results of the Rotated Component Matrix

	Component			
	1	2	3	4
DDH3	0.925			
DDH2	0.884			
DDH4	0.884			
DDH5	0.781			
TC3		0.922		
TC2		0.819		
TC1		0.777		
CDS3			0.874	
CDS2			0.866	
CDS1			0.802	
RR2				0.872
RR3				0.854
RR1				0.783

Note: DDH: service diversification; TC: financial capacity; CDS: digital transformation; RR: risk

Table 6. Correlation co-efficiencies between the trade finance dependent variable and the independent variables

		TTTM	DDH	TC	CDS	RR
TTTM	Pearson Correlation	1	0.552	0.528	0.554	0.504
	Sig. (2-tailed)		0.000	0.000	0.000	0.000
	N		165	165	165	165

Note: TTTM: trade finance; DDH: service diversification; TC: financial capacity; CDS: digital transformation; RR: risk.

Table 7. Results of the multiple regression analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	-2.953	.277		-10.656	.000		
DDH	.635	.045	.507	14.074	.000	.970	1.031
TC	.305	.057	.212	5.382	.000	.811	1.232
CDS	.388	.035	.412	11.110	.000	.917	1.091
RR	.350	.038	.354	9.253	.000	.863	1.159

Note: DDH: service diversification; TC: financial capacity; CDS: digital transformation and RR: risk; $R^2 = 0.798$, Adjusted $R^2 = 0.793$; Durbin-Watson = 2.103, ANOVA sig. = 0.000.

The analysis results of the exploratory factor analysis (EFA) in Cronbach's Alpha model showed that the KMO coefficient (Kaiser-Meyer-Olkin) value was 0.743. This satisfied

the requirement of having a KMO coefficient of 0.5 or over. The significant value of Bartlett's test was 0.000 (less than 0.05), meaning that it was statistically significant and the observed

variables were appropriate, and there was a relationship among the variables in the same factor. The Eigenvalues of all four factors were over 1.378, which meant that the factors in the model were suitable. In addition, the extraction sum of squared loading (cumulative) to the fourth factor was 75.51%, so this ratio satisfied the condition of being greater than 50%. With the above analysis results, the EFA model was determined to be suitable (Hair, 2009).

The results of analyzing the Cronbach's Alpha model in the rotated component matrix showed that the 13 observed variables were classified into four factors, and all the observed variables had factor loading coefficients greater than 0.5 (Table 5). Thus, the model used in this study was appropriate.

- Analysis of correlation level

The relationships between the trade finance (TTTM) dependent variable and the independent variables are shown in Table 6. Accordingly, the correlation coefficients between the trade finance (TTTM) dependent variable with the four independent variables, namely service diversification (DDH), financial capacity (TC), digital transformation (CDS), and risk (RR), were 0.552, 0.528, 0.554, and 0.504, respectively. All the correlation coefficients had significant values of 0.000 (< 0.05), showing that the dependent variable has a linear relationship with the independent variables and these variables are suitable for multiple regression analysis.

- Multiple regression analysis

The results of the multiple regression analysis showed that the adjusted R square value was 0.793 (Table 7), this meant that 79.3% of the total change in the dependent variable was explained by the independent variables. The Durbin -Watson value was 2.103 (approximately 2), and this showed that there was not the phenomenon of first-order serial autocorrelation in the proposed model. The significant value of the analysis of variance (ANOVA) test was 0.000 (< 0.05), which indicated that the current regression model was

suitable for the data set. Furthermore, the results of testing multicollinearity with the variance inflation factor (VIF) coefficients of the independent variables were in the range from 1.031 to 1.232 (less than 10), proving that the model did not have serious multicollinearity

3.3. Discussion

From the above research results, the authors have some observations as follows:

Firstly, service diversification, an independent variable, significantly impacted VietinBank's trade finance with a beta coefficient of 0.635 and a significance value of 0.00 (< 0.05) (Table 7). This beta value was the highest among all the independent variables, which showed that service diversification had the greatest and most positive impact on trade finance during and after the Covid-19 pandemic. This result is consistent with previous publications (hypothesis 3.1). This finding also does not conflict with the results of Nguyen Minh Ha & Nguyen Van Hien (2014), because VietinBank has had a high stage of service diversification ($PDI > 0.43$) with strong investments in infrastructure for a long time. The fact is that both sales revenue and service fees from trade finance have grown significantly due to the diversification of products. Especially, the UPAS L/C was an outstanding product, which promptly met the debt financing sources of enterprises in the tightened and limited "credit room" conditions during Covid-19. In 2022, surpassing nearly 50 high-caliber competitors with impressive indicators, VietinBank became the only bank honored by The Asian Banker in the category of Best Trade Finance Bank in Vietnam (Thu Hue, 2022). To achieve this award, VietinBank met all of The Asian Banker's strict criteria on financial indicators, product innovation, innovation in technology, reputation in relationships with agent banks, and business strategy, among others. In addition, VietinBank is the only bank in Vietnam to establish a Customer Financial Solution Development Center (FSDC). The center develops products and services, and designs specialized financial

solutions for international payments and trade finance based on the receiving needs of branches and customers. Thanks to these, VietinBank increasingly meets the maximum package of customer needs. Therefore, hypothesis H1, “Service diversification has a positive impact on VietinBank's trade finance activities”, was accepted.

Secondly, financial capacity also had a positive impact on trade finance with a beta coefficient of 0.305 and a significance value of 0.00 (< 0.05) (Table 7). In the financial capacity factor, the limit of trade finance with agent banks was very important for VietinBank. Based on a high approved limit level, the trade finance products were promptly provided to customers. Moreover, VietinBank has always focused on strengthening its finance capacity together with improving management activities such as finance planning, supervision and administration, and operation cost control. In terms of building a transaction network, VietinBank is the pioneer Vietnamese bank with branches in Europe, including Frankfurt and Berlin (Federal Republic of Germany) and other countries such as Laos and Myanmar. With regards to financial potential, VietinBank has the leading capital scale, asset quality, and brand value in Vietnam as voted by international organizations (Forbes, The Banker). VietinBank also has a foreign strategic shareholder, MUFG Bank - the world's leading bank. Therefore, hypothesis H2, “Financial capacity has a positive impact on VietinBank's trade finance activities”, was accepted. Previous studies have also reported the same opinion as this study.

Third, digital transformation had a positive impact on VietinBank's trade finance with a beta coefficient of 0.388 and a significance value of 0.00 (< 0.05) (Table 7). The results of this study further confirm the compatibility with previous research works. With an excellent digital transformation strategy over the past few years, VietinBank's customers are now able to utilize online services when conducting international and commercial transactions

through technical infrastructure systems with international standards such as the VietinBank eFAST platform for corporate customers, VietinBank iPay for individual customers, and superior services connecting corporate accounting software directly to VietinBank's Core Banking (ERP connection service). Currently, 63% of VietinBank's operations in key banking areas can be done entirely through digital channels, and this ratio surpasses the target of the Banking Industry's Digital Transformation to 2025 plan. At the same time, digital channels are being applied in over 80% of transactions of corporate customers and 97% of transactions of individual customers (Vietinbank, 2022). Furthermore, VietinBank has applied many automatic and digital technologies in internal processes such as administration management and risk management, as well as artificial intelligence to support chatbots. Thus, these results support accepting hypothesis H3, “Digital transformation has a positive impact on VietinBank's trade finance activities”.

Fourth, the negative relationship between risk and trade finance was proposed in the survey questionnaire. This correlation was supported with a beta coefficient of 0.350 and a significance value of 0.00 (< 0.05) (Table 7). In the risk factor, three criteria, namely the exchange rate risk, interest rate, and Covid-19 epidemic, had great adverse impacts on trade finance. From these results and previous studies, hypothesis H4, “Risks that have a negative impact on VietinBank's trade finance activities”, was accepted.

4. CONCLUSIONS

Firstly, diversifying products and services, especially UPAS L/C, has had the most positive impact on trade finance in VietinBank. Therefore, to strengthen competition with other commercial banks in the near future, the bank should focus on developing intensive products such as UPAS L/C and UPAS T/T, high quality services, and cross-selling products together with promoting resources in the future.

Secondly, financial capacity is the foundation to promote the diversification of banking services. VietinBank was observed to have strong resources for trade finance, with contributions from its large total assets and high transaction limitations with agent banks, as well as a good deposit volume. For instance, in order to increase UPAS L/C products and adapt to new regulations for lending limitations of the State Bank, it is suggested that VietinBank should ensure the size of its total assets together with increasing its deposit mobilization volume and raising limitations with correspondent banks.

In addition, digital transformation activities have played a positive role in VietinBank's trade finance during and after the Covid-19 pandemic. To emphasize this factor in the coming years, VietinBank should focus on improving the processes of fintech such as applications of information technology, digital transformation, digital channel shifts, modern infrastructure and using outstanding utilities, strengthening human resources, and enhancing customer experience. Of which, information technology was identified as the key factor, while good quality human resources was the decisive factor in successful implementation of strategy.

Finally, risk has a negative impact on trade finance activities. Therefore, VietinBank needs to give good advice to customers to avoid exchange rate risk. Moreover, the bank should build up effective tools and qualified measurements to prevent risks such as interest rate risk, market fluctuations, disease risks, or natural disasters.

The author hopes that the above recommendations will be applied to increase the success of trade finance activities of VietinBank in the near future.

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