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MICROPRUDENTIAL FINANCIAL SUPERVISION FOR COMMERCIAL BANKS

Assoc.Prof.PhD. Nguyen Trong Than* - PhD. Thi Quyen Pham*

Abstract: *Financial supervision is an essential management tool of relevant departments in detecting and preventing potential risks that may affect a single financial area in particular or the entire financial system as a whole, thus ensuring smooth and consistent operation of the financial system. In the national financial system, commercial banks serve as financial intermediaries that operate within the financial market. Commercial banks are vital to the national financial system, as they can influence every aspect of the system. Therefore, relevant departments have to financially supervise commercial banks in order to ensure correct and adequate compliance of regulations regarding financial safety and financial risk control. Financial supervision for commercial banks includes microprudential financial supervision and macroprudential financial supervision. The main focus of this article lies on microprudential financial supervision.*

• Keywords: *financial supervision, microprudential financial supervision, commercial banks.*

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Tóm tắt: Giám sát tài chính là công cụ quản lý quan trọng của cơ quan chức năng nhằm phòng ngừa, cảnh báo, phát hiện, ngăn chặn những rủi ro có thể xảy ra đối với từng khu vực tài chính nói riêng và hệ thống tài chính nói chung, đảm bảo cho toàn hệ thống tài chính vận hành ổn định. Trong hệ thống tài chính quốc gia, ngân hàng thương mại là tổ chức tài chính trung gian hoạt động trong thị trường tài chính. Ngân hàng thương mại đóng vai trò rất quan trọng trong hệ thống tài chính quốc gia, ngân hàng thương mại có tác động chi phối đến tất cả các khu vực trong hệ thống tài chính. Vì vậy, cơ quan quản lý chức năng cần giám sát tài chính đối với ngân hàng thương mại để đảm bảo sự tuân thủ đúng, đủ các quy định về an toàn tài chính và kiểm soát rủi ro tài chính. Giám sát tài chính đối với NHTM bao gồm giám sát tài chính an toàn vi mô và giám sát tài chính an toàn vĩ mô. Trong phạm vi bài viết này, tác giả chủ yếu bàn về giám sát tài chính an toàn vi mô.

• Từ khóa: *giám sát tài chính, giám sát tài chính an toàn vi mô, ngân hàng thương mại.*

1. Financial supervision for commercial banks

The financial operation of commercial banks is closely tied to capital flows among entities of the financial system through such banks. Therefore, financial supervision for commercial banks consists

of monitoring, examination and evaluation of their financial situations in order to detect, tip off and prevent impending risks in a timely manner, and at the same time, such methods of supervision also applies to these commercial banks' execution of financial regulations. All of these are put in place with the aim to ensure the consistency of commercial banks, the stability of the financial market, as well as to protect the rights and benefits of all investors in the financial market in general and the ones investing in such commercial banks in particular.

The targets for financial supervision include all financial activities of commercial banks. However, such activities can be diverse and complicated, with connections that are closely-knitted, interactive, directive and dependent to one another, so financial supervision for commercial banks focus mainly on the supervision of certain basic but specific financial activities of the banks. The responsibility of doing the supervising lies on entities such as relevant departments of the government, as well as the owners and the internal supervising units within these commercial banks.

The three fundamental purposes of financial supervision for commercial banks are as followed:

Firstly, to ensure the stability, safety and soundness of the commercial banking system. This offers the ability to avoid the effects of

* *Academy of Finance*

sudden changes. Financial supervision ensures that commercial banks comply with the safety regulations set up by relevant departments.

Secondly, to guarantee commercial banks' operational efficiency and making sure their participation in the financial market is on equal footings. To ensure the operational efficiency of commercial banks is to ensure their continuous operation and development. The operational efficiency of every commercial bank determines its existence and development. However, a commercial bank that fails to operate efficiently, creating risks due to an imbalance between funds and costs not only affects its own existence but also consequently impacts both the commercial banking system in particular and the whole financial system in general. On the other hand, making sure that all commercial banks participate in the financial market on equal footings entails that commercial banks need to be in full compliance with all the regulations required of them when participating in the financial market.

Lastly, to protect the consumers utilizing financial products and services and investing in commercial banks. There is a possibility that consumers' interest might not be guaranteed or might be damaged due to an insufficiency in amount and accuracy of the information provided by commercial banks or in cases of handling conflicts between commercial banks and consumers with only the banks' point of interest in mind. Therefore, financial supervision for commercial banks ensures their compliance to healthy competition regulations, thus protecting consumers' interests and strengthening their faith in commercial banks. All of this would in turn contribute to maintaining stability in not only the commercial banking system but also, in a general sense, the financial system.

2. Microprudential financial supervision for commercial banks

Microprudential supervision for commercial banks is a method of safety monitoring applied to individual targets of supervision, implemented on the basis of a ranking system for assessment of the targets of supervision (which, in this case, are commercial banks), an information system with records of microprudential supervision reports, safety standards, a system of procedures, tools, criteria and skills for analyzing financial activities and a system for evaluation, monitoring and cautioning of all types of risks and legal breaches from said targets of supervision.

Microprudential financial supervision implements contents as followed:

(1) Monitoring, examination and evaluation of the implementation of regulations regarding rates and limitations to ensure safe banking operations, statistical report protocols and other monetary and banking regulations of the law for credit institutions and foreign bank branches.

The content of microprudential financial supervision aims for specific regulations and safety limits that the National Bank required of commercial banks in several different stages (Ex: Regulations on capital adequacy ratio, credit extension limits; coverage ratio; maximum ratio of short-term funds used for medium and long-term loans; the ratio of buying/investing in government bonds; government-guaranteed bonds; capital contribution and share purchase limits...)

(2) Analysis and assessment of commercial banks' risks, mainly including credit risks, market risks, liquidity risks, operational risks..., all of which can be assessed simultaneously or separately based on the situation at hand.

(3) Analysis and evaluation of commercial banks' operational situations in accordance with contents as followed: equity developing and safety ensuring situation; capital mobilizing situation from candidates that met the requirements for exchange participation according to current laws and regulations, including: individuals, economic organizations, credit institutions, foreign bank branches and other organizations; capital utilizing situation such as credit extension for candidates meeting the exchange participation requirements according to current laws and regulations, investments in valuable papers, other capital utilizing activities, non-performing loan situation and management, business activity outcome.

(4) Analysis and evaluation of commercial banks' administrative and managerial capability.

(5) Rankings of commercial banks and foreign bank branches in accordance with regulations set up by the Central Bank.

(6) Analysis and assessment of other miscellaneous contents in accordance with laws and regulations.

Microprudential supervision criteria

In order to deal with the global financial and monetary crisis, the Central Banks of developing countries as well as international organizations

established principles and implemented supervision on the clean-up of the financial system like: the CAMELS rating system established by American National Credit Union Administration (NCUA) in 1987; the Financial Soundness Indicator (FSIs) by International Monetary Fund (IMF); credit rating organizations like Standard and Poor also established their own criteria system. Even though organizations around the world differs in the specifics of their criteria, all assessments of credit institutions are based on 6 fundamental contents: Capital adequacy, asset quality, administrative and managerial capabilities, profitability, liquidity and market sensitivity.

Microprudential supervision for commercial banks utilizes the following criteria:

(1) Capital criteria

Supervision of capital criteria is implemented through 2 main indicators: charter capital and capital adequacy ratio.

- Charter capital: Reflects on the compliance with laws and regulations on capital set up for commercial banks.

Decree No. 86/2019/ND-CP regulates the legal capital for credit institutions and foreign bank branches. Specifically, the amount of legal capital authorized for commercial banks is 3,000 billion VND.

- Capital adequacy ratio (CAR): Reflects on the capital adequacy of a bank; an important indicator established and highly recommended by banking specialists from the Basel committee for evaluation of the compliance with the laws and regulations on capital adequacy for commercial banks.

$$\text{CAR (\%)} = \frac{\text{Core Capital}}{\text{Risk Weighted Assets}} \times 100$$

With: Core capital = Tier 1 Capital + Tier 2 Capital - Revenue deduction (according to regulations); Risk weighted assets are calculated in accordance with specific regulations.

Each country has their own specific regulations on capital adequacy ratio for commercial banks.

According to Basel II and Basel III regulations, the capital adequacy ratios are both 8%. However, Basel III possess stricter regulations when it comes to the calculations of core capital and risk weighted assets.

According to Circular No.22/2019/TT-NHNN by Vietnam National Bank, a bank's capital

adequacy ratio consists of separate and merged capital adequacy ratio. Everybanks must maintain a separate capital adequacy ratio of 9% and a merged ratio of 9%.

Capital criteria are utilized to assess capital adequacy as well as the level of compliance with the laws and regulations on capital adequacy for commercial banks.

(2) Criteria on asset quality

Supervision on asset quality relies on indicators such as the ratio of non-performing loans (NPL) to total loans and the ratio of non-performing loans to equity in order to evaluate the level of compliance with the laws and regulations on loan activities, provisions and credit risk management.

$$\text{NPL to Total loans Ratio (\%)} = \frac{\text{NPL}}{\text{Total loans}} \times 100$$

NPLs ratio is a vital basis to evaluate commercial banks' asset quality. It is also one of the conditions for limitations on credit extensions for investment and exchange regarding corporate bonds and stocks.

$$\text{NPL to Equity Ratio (\%)} = \frac{\text{NPL}}{\text{Equity}} \times 100$$

The NPL to equity ratio reflects on the ability to withstand credit risks based on the owner's equity.

Supervision on asset quality helps detect and prevent impending risks as well as to oversee compliance with the regulations on debt groupings and credit risk provisions. Apart from the aforementioned indicators, supervision on commercial banks' asset quality can also be executed through the following classification of debt structures: debt groups, customers and economic sectors. The criteria on asset quality are used to detect credit risks and evaluate the level of compliance with the law regarding to creditability for commercial banks.

(3) Criteria on liquidity

Supervision on liquidity is implemented through indicators like short-term funds ratio used for medium and long-term loans, loans to deposits ratio, liquid asset to liability ratio and liquidity coverage ratio in a 30-day period in order to evaluate compliance with the law regarding liquidity adequacy and liquidity risk management, and thus to better assess the liquidity risks of commercial banks.

$$\text{Short-term funds ratio used for medium and long-term loans (\%)} = \frac{\text{Total medium and long-term loans - total regulated medium and long-term funds}}{\text{Total regulated short-term funds}} \times 100$$

This criterion is the ground to evaluate the consistency level of funds for commercial banks. According to State Bank of Vietnam, commercial banks are only allowed a certain ratio of the short-term fund for medium and long-term loans. This criterion going over the regulated numbers would entail an inherent risk in time-limit imbalance. As regulated in Circular No.22/2019/TT-NHNN dated November 25th, 2019, the maximum ratios of short-term fund allowed to be used for medium and long-term loans are stated accordingly as followed: a) From January 1st, 2020 to September 30th,2020: 40%; b) From October 1st, 2020 to September 30th, 2021: 37%; c) From October 1st, 2021 to September 30th, 2022: 34%; d) From October 1st, 2022: 30%.

$$\text{Loans to Deposits Ratio (LDR)} = \frac{\text{Total regulated loans}}{\text{Total regulated deposits}}$$

This criterion is the ground to evaluate the balance between customer deposits and loans. According to Vietnam National Bank, commercial banks are only allowed a certain ratio of the mobilized capital to loan out. This criterion going over the regulated number entails inherent risks on loss of liquidity when faced with drastic deposit withdrawals. As regulated in Circular No.22/2019/TT-NHNN dated November 25th, 2019, the maximum LDR allowed for a commercial bank is 85%.

$$\text{Liquidity Ratio (\%)} = \frac{\text{Regulated Liquid Assets}}{\text{Total Regulated Liabilities}} \times 100$$

This criterion reflects on the ability to meet the liquidity needs for liabilities. According to State Bank of Vietnam, commercial banks are required to maintain a certain liquidity ratio so as to ensure liquidity for liabilities. As regulated in Circular No. 22/2019/TT-NHNN dated November 25th, 2019, commercial banks and foreign bank branches must maintain a minimum liquidity ratio of 10%.

$$\text{Liquidity Coverage Ratio up to 30 days (\%)} = \frac{\text{Regulated Liquid Assets}}{\text{Total Regulated Net Cash Outflows up to 30 days}} \times 100$$

This criterion is the ground to evaluate commercial banks'ability to ensure in a 30-day period. According to the regulations of Vietnam National Bank, commercial banks are required to maintain a certain liquidity coverage ratio for both domestic and foreign currencies. A number lower than regulated for this criterion means higher liquidity risks. As regulated in Circular No.22/2019/TT-NHNN dated November 15th, 2019: (1) In the

cases that commercial banks and foreign bank branches determine a positive net cash outflow for the VND currency in the next 30-day period, they are required to maintain a 30-day liquidity coverage ratio for VND of at least 50% as regulated in point b of this paragraph. (2) In the cases that commercial banks and foreign bank branches determine a positive net cash outflow for foreign currencies in the next 30-day period, they are required to maintain a minimum 30-day liquidity coverage ratio for foreign currencies, as regulated in point b of this paragraph, as followed: (i) 10% for commercial banks; (ii) 5% for foreign bank branches; (iii) 5% for co-operative banks.

The liquidity criteria is utilized in liquidity risks monitoring, evaluation of capital usage and mobilization in commercial banks and assessment on the level of compliance with the law in regards to operational safety guarantee of commercial banks.

(4) Criteria on market sensitivity

Supervision on market sensitivity is executed through such indicators as interest rate gap and net foreign exchange position with the aim to evaluate compliance with the law in regards to market risks management.

$$\text{Interest Rate Gap (GAP)} = \text{Interest Sensitive Assets} - \text{Interest Sensitive Liabilities}$$

This criterion assesses interest rate risks. If GAP>0, net interest income would increase along with a rise in exchange rate and vice versa. If GAP<0, net interest income would decrease when exchange rate goes up and vice versa. Consequently, interest risks are bound to happen to commercial banks with GAP>0 when there is an increase in exchange rate and to those with GAP<0 when there is a decrease in exchange rate.

$$\text{Net Foreign Exchange Position} = \text{Foreign Exchange Assets} - \text{Foreign Exchange Liabilities}$$

This criterion evaluates exchange rate risks. A positive foreign exchange position means profit comes along with an increase in exchange rate and losses come with an exchange rate decrease. On the other hand, a negative foreign exchange position entails losses brought along by a rise in exchange rate and vice versa. This criterion can be calculated for each separate foreign currency or classified into groups: total positive net foreign exchange and total negative net foreign exchange. Therefore, exchange rate risks would appear when the exchange rate

decreases during a positive foreign exchange position and when the exchange rate increase during a negative foreign exchange position. In accordance with regulations on exchange rate risks management, commercial banks are required to maintain a certain ratio of net foreign exchange position to core capital in order to ensure the ability to manage risks when there is an exchange rate fluctuation.

$$\text{Net foreign exchange position to Core capital Ratio (\%)} = \frac{\text{Net foreign exchange position}}{\text{Core capital}} \times 100$$

As regulated in Circular No.07/2012/TT-NHNN dated March 20th, 2012: (1) End-of-day total positive foreign exchange position of credit institutions and foreign bank branches must not go over 20% of their core capital. (2) End-of-day total negative foreign exchange position of credit institutions and foreign bank branches must not go over 20% of their core capital. (3) Branches of foreign banks in Vietnam with a core capital of 25 million USD and under are allowed to apply limitations of total foreign exchange position as followed: (i) End-of-day total positive foreign exchange position in US currency must not go over 5 million USD. (ii) End-of-day total negative foreign exchange position in US currency must not go over 5 million USD.

Apart from the afore-mentioned criteria, supervision is also required in the compliance with regulations on capital contribution and share purchase limitations so as to manage price risks.

These criteria on market sensitivity are utilized to monitor commercial banks' market risks and their compliance with law.

(5) Criteria on administrative and managerial capability

Supervision on managerial capability is executed through the ratio of costs to revenue in order to evaluate commercial banks' cost management capability. A costs-to-revenue ratio lower than the sector's average quota entails commendable managerial capability, low risks and vice versa.

(6) Criteria on profitability

Supervision on profitability is achieved through indicators such as net interest margin, assets' profitability and equity's profitability with the aim to evaluate the operational efficiency of commercial banks, thus to detect and prevent risks.

$$\text{Return on Assets Ratio (ROA; \%)} = \frac{\text{Net profit after company income tax}}{\text{Average total assets}} \times 100$$

ROA is the basis for supervision on commercial banks' asset profitability. A negative ROA means extremely high-risk, a positive but under-average ROA would still paint a grim picture for commercial banks.

$$\text{Return on Equity Ratio (ROE; \%)} = \frac{\text{Net profit after company income tax}}{\text{Average Equity}} \times 100$$

ROE helps monitor equity's profitability of commercial banks. A positive equity but negative ROE indicates extremely high-risk.

$$\text{Net Interest Margin (NIM; \%)} = \frac{\text{Net Interest Income}}{\text{Average Profitable Assets}} \times 100$$

NIM is the basis to help supervise commercial banks' profitability situation of interest-earning assets. A NIM ratio below sector's average quota indicates a negative outlook for commercial banks.

After calculations are finished for all quantitative criteria of the supervised credit institution, the supervising entity would begin the process to compare all the collected data with the sector's average quotas, regulated threshold set up by relevant governmental departments and among different time frames so as to make an assessment on the fluctuation tendency of risks. However, these afore-mentioned thresholds for criteria of financial supervision evaluation regarding credit institutions tend to vary with time, depending on the operational characteristics, functions and purposes of each type of credit institution.

3. The application of microprudential financial supervision on commercial bank X through some specific criteria

Table 1: Criteria reflecting on Commercial bank X's microprudential situation

Criteria	31/12/2020	31/12/2019
Capital		
1. Charter capital (billion VND)	37.234	37.234
2. Merged CAR (%)	>9%	>9%
Asset quality		
1. NPL ratio (%)	0,94	1,20
2. NPL to Equity ratio (%)	10,83	14,79
Liquidity		
1. Short-term fund ratio used for medium and long-term loans (%)	29,3	32,0
2. Loans to Deposits ratio (LDR) (%)	86,1	88,1
3. Liquidity Coverage ratio (%)	12,3	14,0

Criteria	31/12/2020	31/12/2019
Profitability		
1. NIM (%)	2,86	2,80
2. ROA (%)	1,3	1,0
3. ROE (%)	16,8	13,1

Source: Collected from financial reports, annual reports and capital adequacy reports of Commercial bank X

From all data collected and calculated, the supervising entity would be able to present the following opinions:

+ About capital criteria: Decree No.86/2019/NĐ-CP regulates the authorized capital for commercial banks at a minimum of 3,000 billion VND. Commercial bank X maintains a charter capital of 37,234 billion VND, which is in compliance with legal charter capital regulations. Circular No.22/2019/TT-NHNN regulates the minimum ratio of separate and merged capital adequacy for commercial bank at 9%. Commercial bank X's minimum capital adequacy ratios in both years are over 9%, thus abiding by regulations.

+ About asset quality: Circular No.22/2019/TT-NHNN regulates a limitation for NPL ratio of under 3%. Commercial bank X's NPL ratio in 2020 is at 0.94% which is in compliance with regulations. On the other hand, the NPL ratio in 2020 is on the decrease in comparison with that of 2019, entailing a decrease in credit risks. In 2020, the NPL to equity ratio of commercial bank X also goes down compared to the figure in 2019, leading to a stronger resistance to credit risks from equity and indicating a decrease in risks.

+ About liquidity:

The ratio of short-term fund used for medium and long-term loans in 2020 shows a decrease compared to 2019 so liquidity risks due to overusage of short-term fund for medium and long-term loans consequently lessen. Alternatively, Circular No.22/2019/TT-NHNN regulates a maximum short-term fund ratio that can be used for medium and long-term loans of 40% from January 1st, 2020 to September 30th, 2020 and 37% from October 1st, 2020 to September 30th, 2020. Therefore, commercial bank X's compliance with regulations is guaranteed. Moreover, decreasing figures also indicate a rise in safety level.

Circular 22/2019/TT-NHNN also regulates a maximum loans to deposits ratio of 85%. The figures for commercial bank X in 2019 is 88.1%

which is slightly higher than regulated, resulting in inherent liquidity risks. The ratio reduces by 2% in 2020. The year shows a rise in both deposit and loan outstanding balances even though the increase rate of the loan outstanding balance is lower than that of the deposit outstanding balance, leading to a decline in liquidity risks. However, the number still exceeds that in regulations. A warning would be issued to commercial bank X regarding their compliance with deposits to loans ratio regulations in hopes of managing liquidity risks.

2020 brings forth a decrease in liquidity coverage ratio for commercial bank X, though still in an accepted range in accordance with regulations. (Circular No.22/2019/TT-NHNN regulates the minimum liquidity coverage ratio for commercial banks at 10%).

+About profitability: 2020 shows a positive increase in all profitability criteria of commercial bank X in comparison with 2019, indicating their impressive profitability among commercial banks in general. Consequently, there is a reduction in efficiency risks.

Through all of the above criteria, it can be shown that commercial bank X basically abided by all legal regulations regarding capital, asset quality and liquidity, with the exception of the regulations on deposits to loans ratio. In regards to risk monitoring, all criteria fluctuates in a positive trend, less risks and more safety on a microscopic level. As recommendation, it is of great importance for commercial bank X to abide by regulations on deposits to loans ratio in order to better manage their liquidity risks.

Conclusion: Financial supervision in general and microprudential supervision in particular are activities of great importance for commercial banks in ensuring the safety of each and every commercial bank, the commercial banking system as well as the national financial system.

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PUBLIC DEBT MANAGEMENT IN VIETNAM: ISSUES AND RECOMMENDATIONS

PhD. Le Thi Mai Anh*

Abstract: *In Vietnam, public debt has recently been one of the issues attracting the most attention at economic forums. For a developing economy having low level of capital accumulation as Vietnam, debt can be seen as a necessary tool for capital funding, meeting investment demands and encouraging production. However, the excessive and incautious use of this financial source will turn debt into a burden for the budget in the future, which will threaten the sustainability of the economy. This research has put together great attempts to comprehensively assess the current situation of Vietnam's public debt management in the current period. On that basis, the article also analyzes the achievements and limitations of public debt management, from which a number of recommendations are proposed to help control the issue in Vietnam.*

• Keywords: *public debt management, economy, Vietnam.*

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Tóm tắt: *Tại Việt Nam, nợ công gần đây là một trong những vấn đề thu hút sự quan tâm nhất tại các diễn đàn kinh tế. Đối với một nền kinh tế đang phát triển, có mức tích lũy vốn thấp như Việt Nam, nợ có thể được coi là một công cụ cần thiết để cấp vốn, đáp ứng nhu cầu đầu tư và khuyến khích sản xuất. Tuy nhiên, việc sử dụng quá mức và thiếu thận trọng nguồn tài chính này sẽ biến nợ nần thành gánh nặng cho ngân sách trong tương lai, đe dọa sự bền vững của nền kinh tế. Nghiên cứu này đã tổng hợp những nỗ lực lớn nhằm đánh giá một cách toàn diện thực trạng quản lý nợ công của Việt Nam trong giai đoạn hiện nay. Trên cơ sở đó, bài báo cũng phân tích những thành tựu và hạn chế của công tác quản lý nợ công, từ đó đưa ra một số khuyến nghị nhằm giúp kiểm soát vấn đề này ở Việt Nam.*

• Từ khóa: *quản lý nợ công, kinh tế, Việt Nam.*

1. Overview of public debt management

Although public debt is understood clearly and intuitively to be the state's debt, the calculation method and scope of the public debt are rather different among countries. However, the most widely used and overarching definitions of public debt are those given by the WB and the IMF. According to the WB and the United Nations Conference on Trade and Development (UNCTAD), public debt is the debt of four stakeholder

groups, including (1) the Government, central ministries and agencies, (2) local governments, (3) central banks, and (4) independent organizations of which the Government owns over 50% of equity or budgeting decisions must be approved by the Government or the Government is responsible for repaying their debt in case those institutions default.

Meanwhile, according to the IMF, public debt includes the debt of central and local governments. Specifically, central government debt includes debts of central bodies (such as ministries, agencies under the Government, the legislature, judiciary and the State President) and non-governmental units funded by the state budget (including those performing a specialized function of the Government in terms of health, education, social security, construction, etc. and being controlled and financed entirely by the central government) and social security funds (VEPR, 2015).

As defined in the Law on Public Debt Management in 2009, Viet Nam's public debt comprises Government debt, Government-guaranteed debt, and the debt of local governments. In which: (i) Government debt means a debt arising from a domestic or foreign loan which is signed or issued in the name of the State or the Government or a loan signed or issued by or under the authorization of the Ministry of Finance under law. Government debts do not include debts issued by the State Bank of Vietnam to implement monetary policies in each period; (ii) Government-guaranteed debt means a domestic or foreign loan borrowed by an enterprise or financial or credit institution under the Government's

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guarantee; (iii) Debt of local administration means a debt signed or issued by or under the authorization of the People's Committee of a province or centrally run city (below referred to as provincial-level People's Committee).

The main objective of public debt management is to ensure that the government's financing needs and its payment obligations are met at the lowest possible cost over the medium to long run, consistent with a prudent degree of risk. Prudent risk management to avoid dangerous debt structures and strategies (including monetary financing of the government's debt) is crucial, given the severe macroeconomic consequences of sovereign debt default, and the magnitude of the ensuing output losses.

2. Current situation of public debt management in Vietnam

The long-term strategy on public debt for the period 2011-2020 is reflected in the Prime Minister's Decision No. 958/QĐ-TTg dated 27/7/2012. This Decision approves the National Strategy on Public Debt and External Debt for the period 2011-2020 and a Vision to 2030. Accordingly, the safety indicators on the national public debt and external debt include: (i) Public debt by 2020 does not exceed 65% of GDP, of which the outstanding government debt does not exceed 55% of GDP and the country's external debt does not exceed 50% of GDP; (ii) The Government's direct debt repayment obligation (excluding on-lending) compared to the total annual state budget revenue is less than 25% of the export value of goods and services; (iii) The ratio of foreign exchange reserves to total annual short-term foreign debt balance is over 200%.

Figure 1: Indicators of Vietnam's public debt management in the 2015 - 2020 period

Indicators	Public debt to GDP (%)	Government debt to GDP (%)	Foreign debt to GDP (%)	The average issuing maturity of Government bonds (Year)
2015	61,0	49,2	42,0	6,9
2016	63,6	52,6	44,7	8,7
2017	62,5	51,8	45,2	12,7
2018	58,4	50,0	46,0	12,7
2019	56,1	49,2	45,8	13,4
2020	55,9	49,9	47,9	13,9

Source: Report of the Ministry of Finance

Compared with the above goals, the achievements of public debt management in Vietnam in recent years can be seen as follows:

Currently, the indicators showing the results of Vietnam's public debt management are still within a safe threshold. Public debt is currently at 55.9%; Government debt at 49.9% of GDP; thereby

contributing to national financial security. Especially during this period, the structure of Vietnam's public debt has undergone a drastic change when the proportion of domestic debt tends to increase gradually over the years, reducing the proportion of foreign debt.

Domestic debt is mainly government bonds, which have been improved in terms of maturity, mobilization costs, and investor structure. The bond market in 2020 continued to grow well, meeting the demand for raising capital for the Government to invest in public investment projects and for corporates to expand production and business. The average issuing maturity of Government bonds was 13,9 percent in 2020, an increase of about 2,0 times compared to 2015 (6,9 years). While the average issuing maturity of government bonds reached a record high, the average issuing interest rate of government bonds continued to decrease. This phenomenon shows the efficiency of government bond issuance. In the period 2016-2020, the interest rate has decreased from 6.5%-8.0%/year for terms from 5 years to 30 years at the beginning of 2016 to about 1.2% -3.3%/year (at the end of October 2020), of which the 5-year to 30-year term has the lowest interest rate ever. The decrease in interest rates has created favorable conditions for the Government to increase debt in the domestic market, reduce foreign debt, thereby contributing to the restructuring of public debt in a sustainable way.

Foreign debt is still mainly ODA loans, preferential loans from bilateral and multilateral donors with long loan terms and preferential interest rates. The debt-to-GDP ratios remained within the safe thresholds permitted by the National Assembly and continued the downward trend of 2018 due to favorable developments in the state budget balance. This reduces the Government's need to mobilize capital to offset overspending for development investment.

The legal framework and policies on public debt management are gradually being improved. The efficiency of state management of public debt has been improved in the new situation. Law on Public Debt Management No. 20/2017/QH14 was approved by the National Assembly to institutionalize the Party and State's policy on safe, sustainable and effective public debt management.

The mobilization of a large amount of capital for the state budget and development investment has met the capital needs of the economy and contributed to the successful implementation of the five-year socio-economic development plan.

Limitations

However, public debt management in the 2015-2020 period also shows that Vietnam's public debt

management still has many shortcomings.

Firstly, the scope of public debt is overlapping, not reflecting the true nature of each debt. The concept of public debt is still different from international practices, with clearly defined objectives and tools for proactive debt management.

Secondly, although the debt structure has changed, the characteristics of the Government debt portfolio are still potentially risky. While the domestic capital market has not yet developed, the cost-risk profile of the government debt portfolio tends to be less favorable than before and recognizes the dual challenge of more expensive foreign loans.

Thirdly, disbursement of public investment and official development assistance remains slow compared to the plan assigned by the government while the speed of economic recovery greatly depends on public investment, with its efficiency expected to contribute to Vietnam's rapid and sustainable growth.

Fourthly, the Government's direct debt repayment obligation compared to the total state budget revenue tends to increase rapidly. Over the past 5 years, the Government's direct debt repayment obligation compared to state budget revenue has fluctuated unevenly with a rapid increase at the end of the period. The main reason is that the domestic government bonds issued in the previous period to balance the state budget are due to pay the principal. On the other hand, the state budget revenue in 2020 decreased sharply due to the impact of the Covid-19 epidemic. It is estimated that the whole year state budget revenue decreased by 12.5% compared to the estimate.

Fifthly, the information and data system on public debt has not been updated regularly. The reporting regime has not been fully complied with the requirements and the quality is not high, especially for government-guaranteed corporate debt and local debt.

3. Conclusion and policy recommendations

The detailed analysis of the current public debt situation clearly indicates the increasing scale and risks of public debt in Vietnam. In order to improve the effectiveness of public debt management, and meet the requirements, goals in the coming time, it is necessary to continue to implement the following solutions.

(1) It is necessary to improve the collection, management, and disclosure of information on public debt towards increasing the publicity, transparency, systematicity, thoroughness, honesty, objectivity, accuracy, and timeliness. Specifically, the format for statistical reports on public debt, the deadlines for publicizing information, and the update level of the published data should be specified in order to facilitate

the management and evaluation of public debt situation.

(2) With regard to the management of risks stemming from government-guaranteed debts, there should be a mechanism for monitoring and minimizing the number of cases that the budget has to be used to pay or guarantee SOEs' self-borrowing and self-repayment debts when these enterprises go bankrupt. Take measures to restrict debt guarantee and increase the publicity and transparency of government guarantee.

(3) It is necessary to mobilize, use and manage loan funds as well as the assurance of full and on-time repayments. Loans to balance the State budget must be strictly controlled, so as to secure the overspendings as set in the Strategy and gradually update the methods of calculating State budget overspending in line with international practices.

(4) The focus would be placed on raising capital from domestic sources first. If domestic sources were still significantly short of the demand for covering overspending for development investment and debt repayment, the Government would study the issuance of international bonds when the market conditions are favorable. Based on the disbursement of capital, the ministry would be flexible in using appropriate tools to raise domestic and foreign resources to meet the capital demand, including Government bond issuance, foreign concessional loans.

(5) Frameworks, institutions and policies on managing public debts, government debts and national foreign debts should be further perfected in order to secure stability and uniformity, meet requirements of the renovation, and create favorable conditions for the development of domestic capital markets and improve the access to international capital markets.

(6) The final solution that should be implemented is proactive debt restructuring towards sustainability, towards improving debt safety indicators and enhancing the sustainability of medium and long-term debt. At the same time, it is essential to strictly manage and control provisional debt obligations of the state budget; definitively handle the projects facing debt repayment difficulties of the previous period; strictly control new guarantees, ensure compliance with regulations and efficiency.

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IMPROVING INVESTMENT ATTRACTION FOR ECONOMIC AND SOCIAL DEVELOPMENT IN BAC NINH PROVINCE

MA. Nguyen Thanh Binh*

Abstract: *By analyzing the current situation of investments in Bac Ninh province, the paper evaluates the investment efficiency for the province's social and economic development and points out the limitations in investment attraction. In the period from 2017 to 2021, the total capital invested to Bac Ninh province grew very strongly, but tended to decrease in the last years of the period. Besides, the operating efficiency of enterprises is quite positive but it is still not good in the state sector. Therefore, the People's Committee of Bac Ninh province needs solutions to improve the province's competitiveness, strengthen and improve the quality of investment promotion as well as accelerate the construction of infrastructure to serve requirements of enterprises.*

• Keywords: *investment attraction, social and economic development, Bac Ninh province.*

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Tóm tắt: Qua phân tích thực trạng thu hút đầu tư của tỉnh Bắc Ninh, bài viết đánh giá hiệu quả đầu tư đối với phát triển kinh tế - xã hội của tỉnh và chỉ ra những hạn chế trong công tác thu hút đầu tư. Trong giai đoạn 2017 - 2021, tổng vốn đầu tư vào tỉnh Bắc Ninh tăng trưởng rất mạnh, nhưng có xu hướng giảm dần vào các năm cuối của thời kỳ. Bên cạnh đó, hiệu quả hoạt động của doanh nghiệp cũng giảm mạnh trong thời gian này. Hiệu quả sử dụng vốn để phát triển kinh tế, xã hội khá khả quan nhưng khu vực nhà nước vẫn chưa tốt. Vì vậy, Ủy ban nhân dân tỉnh Bắc Ninh cần có các giải pháp nâng cao năng lực cạnh tranh của tỉnh, tăng cường và nâng cao chất lượng xúc tiến đầu tư cũng như đẩy nhanh tiến độ xây dựng cơ sở hạ tầng phục vụ yêu cầu của doanh nghiệp.

• Từ khóa: *Thu hút đầu tư, phát triển kinh tế và xã hội, tỉnh Bắc Ninh.*

Over the years, Bac Ninh has been very successful in attracting investment from businesses, especially foreign direct investment (FDI). In the period of 2016 - 2021, the total attracted capital is VND 422,801 billion, double the period of 2011 - 2015. In 2017, the province's FDI reached USD 3.64 billion, ranking second in the country. However, the amount of investment attracted in 2020 - 2021 has a sharp decrease. In addition to the impact of the Covid-19 pandemic, the Provincial Competitiveness Index (PCI) of Bac Ninh also decreased, ranking dropped from 4th in 2019 to 10th in 2020.

The goal of production development of Bac Ninh province is not only to attract FDI but also to attract investment from domestic enterprises to diversify production and fully exploit advantages in different industries. That needs to find effective solutions to increase investment attraction in the new period.

2. Figures of investments in Bac Ninh province

2.1. Scale and structure of investments in Bac Ninh province

2.1.1. Newly registered investment projects in Bac Ninh province

1. Introduction

In order to accelerate the speed of socio-economic development, investment capital is an indispensable factor that requires Bac Ninh province to have effective solutions to raise capital from many different sources, both people and businesses from many economic sectors.

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During the period from 2017 to 2021, new domestic investment projects tend to decrease gradually. Specifically, in 2017, the number of domestic projects attracted to the province was 104, slightly increased to 119 in 2018 but then decreased sharply in 2019, only 75 projects. Although 2020 will increase to 80, in 2021, this number will only be 58. Bac Ninh's provincial competitiveness is rated the highest in 2019 (ranked 4th out of 63 provinces) but the number of projects attracting Domestic investment is low compared to 2017-2018.

This trend also occurs in attracting FDI in Bac Ninh province. Provincial competitiveness Index in 2019 was highly appreciated, causing the number of new FDI projects in the province to increase sharply to 245 but then gradually decrease. 2021 is also the year that the number of FDI projects in Bac Ninh is the lowest. This is also the year Bac Ninh had to go through many prolonged periods of social distancing, the production of many businesses stagnated as well as being affected by the declining FDI flow of the whole world.

Table 1. Investment attraction in Bac Ninh province from 2017 to 2021

Content	Unit	2017	2018	2019	2020	2021
DDI						
New project	Project	104	119	75	80	58
Total investment	Billions dong	9.832,18	25.100	5.086,3	8.506,62	22.642,68
Adjustment of capital increase	Project	40,00	41,00	45,00	35,00	89,00
License revocation	Project	-	17,00	-	1,00	5,00
FDI						
New project	Project	192	178	245	159	131
Total investment	Million USD	467,55	408,02	857,87	439,882	1.204,02
Adjustment of capital increase	Project	140	121	161	105	104
License revocation	Project	0	24	5		

Source: Bac Ninh Provincial People's Committee (2021)

Although the number of new investment projects in Bac Ninh province tends to decrease sharply from 2020, the total investment capital in these two years is not low. In 2020, the total new domestic investment capital is 8,506 billion VND (lower than 2017 with the total value of 9,832 billion VND). In 2021, this figure is

22,642.6 billion dong, just lower than the highest investment level in the period of 2017-2021 (25,100 billion dong) and higher than all other years. The adjusted capital increase in 2021 is also the highest in the whole period and the number of projects withdrawn is much lower in 2018. Thus, the number of domestic investment projects in Bac Ninh province during the period tends to decrease the impact of Covid 19. Enterprises decided to adjust capital increase to overcome difficulties of recession instead of divestment or stopping operations.

In 2021, the total new FDI value in Bac Ninh province are the largest in the period from 2017 to 2021 with 1,204 million USD. However, the number of foreign direct investment licenses revoked is also the highest in 2021 with 45 projects.

2.1.2. Investment size and structure

During the period from 2017 to 2021, the total investment capital in Bac Ninh province tends to decrease year by year. The largest amount of investment capital in 2017 was 118.89 trillion VND and in 2021 it was only 58.2 trillion VND.

Table 2. Total investment capital in Bac Ninh province from 2017 to 2021

Unit: Trillion VND

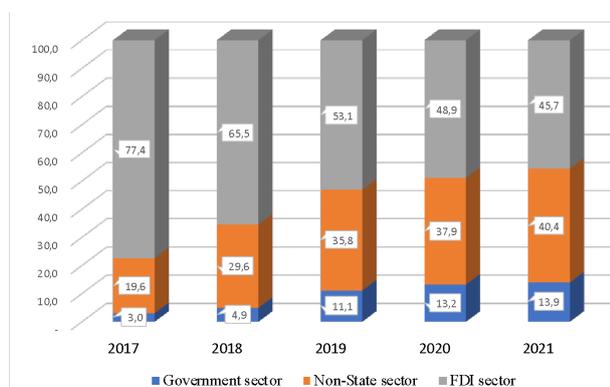
Content	2017	2018	2019	2020	Estimate 2021
Total	118,89	84,12	72,95	69,57	58,2
Government sector	3,57	4,11	8,09	8,47	8,11
Non-State sector	23,38	24,88	26,13	26,41	23,51
FDI sector	91,94	55,13	38,73	34,69	26,58

Source: Bac Ninh Statistical Office (2022)

However, the level of investment capital volatility differs between economic sectors. State capital had a strong increase during this time. In 2017, the state capital was only 3.57 trillion dong, by 2020 it has increased to 8.47 trillion dong, only a slight decrease in 2021 to 8.11 trillion dong. The amount of capital in the non-state sector tends to increase in the 2017-2020 period, but it is not too large. Only the total realized FDI in the period 2017-2021 saw a sharp decline. In 2017, the total capital in the FDI sector was 91.94 trillion VND, but by 2021 it will only be 26.58 trillion VND (a decrease of nearly 70% compared to 2017).

Compared with the table 1, it can be seen that the total investment capital realized in the FDI sector is reduced from the active projects. There are 2 reasons for this. The first is that Covid-19 has negatively affected the operations of businesses. The second is that old projects have expired. This result also shows that attracting foreign direct investment into the Bac Ninh province is a very good thing because it creates a very strong amount of capital for socio-economic development of the province, especially in the periods when the economy is still at a low level.

Figure 1. Investment capital structure of economic sectors in Bac Ninh from 2017 to 2021 (%)



Source: Bac Ninh Statistical Office (2022)

The investment capital structure of economic sectors in Bac Ninh province in the period from 2017 to 2021 has changed quite a bit. If in 2017, the capital of the State sector accounted for only 3%, by 2021 it had increased to 13.9%. Meanwhile, the proportion of FDI tends to decrease quite sharply. In 2017, FDI accounted for 77.4% of the total investment capital of the province, but 2021 it was only be 45.7% (decreased nearly 2 times). Non-state investment capital doubled from 19.6% in 2017 to 40.4% in 2021. The change in investment capital structure shows the ability to attract FDI in Bac Ninh province has decreased, but the internal capital of the province has gradually increased.

2.2. Current situation of business development

There is a large difference between the number of enterprises actually operating and the number of enterprises registered for investment in Bac Ninh province in the period of 2017 - 2020, about more than 2,000 enterprises per year. That shows,

there are many businesses established but have not started operations.

Table 3. Performance of enterprises in Bac Ninh province from 2017 to 2020

Enterprises performance indicators	2017	2018	2019	2020
Number of enterprises registered	8.619	9.915	11.349	12.769
Number of active enterprises	6.837	7.687	9.829	10.123
Average density of active enterprises per 1000 people	7,1	7,9	8,2	9,0
Average density of active enterprises per 1000 people of working age	14,8	16,9	17,2	18,2
Number of newly established enterprises	1950	2041	2405	2390
Registered capital of newly established enterprises	13.934	18.146	22.231	24.122
Number of enterprises returning to operation	333	396	545	530
Number of enterprises temporarily suspending business	309	421	480	711
Number of enterprises dissolved	625	483	223	244

Source: Vietnam Business White Paper 2021

The density of active enterprises per 1000 inhabitants of Bac Ninh province increases steadily every year. In 2020, there were 9, higher than the national average of 8.3 but still lower than the Red River Delta average of 11.1. Similarly, the average density of active enterprises per 1000 people of working age in Bac Ninh province is also quite high and gradually increases every year in the period 2017 - 2020. In 2020, this number is 18.2 higher than the national average (16.8). It can be seen that, although Bac Ninh is the smallest province in Vietnam, the level of investment attraction and the number of active enterprises is quite high.

However, the number of enterprises suspending business is quite large and increases sharply at the end of the period 2017 - 2020. In 2020, the number of enterprises suspending business is 711, 2.3 times higher than 2017. This is the negative effects of the Covid 19 pandemic on business operations. The number of dissolved enterprises was not much at the end of the period. In 2020, the number of dissolved enterprises is only 244 (equivalent to 40% of 2017). The impact of the Covid-19 pandemic has strongly, but we can still hope for a recovery in the coming years. The number of

enterprises returning to operation in 2020 is also 1.59 times higher than in 2017.

3. Evaluating investments for social and economic development in Bac Ninh province

3.1. Efficiency of investments for social and economic development in Bac Ninh province

3.1.1. Enterprises' performance

Enterprises' performance in Bac Ninh province tends to decrease in the period 2017 -2020. Labor efficiency in 2017 was 29.9 times and increased to 30.8 times in 2018 but then gradually decreased in the following years. In 2020, it was only 26.1 times. That is, with 1 VND spent on employees, the business only earns 26.1 VND in revenue.

Table 4. Enterprises' Performance in Bac Ninh province from 2017 to 2020

Criteria for evaluating business performance	Unit	2017	2018	2019	2020
Labor efficiency	Time	29,9	30,8	27,9	26,1
Pre - tax profit/net revenue ratio	%	7,10	5,72	4,95	4,17
Pre-tax profit/capital ratio	%	11,02	9,79	7,63	7,04
Capital turnover index of enterprises	Time	1,86	1,80	1,60	1,69

Source: Vietnam Business White Paper 2021

Considering the performance of each group of enterprises, it can be seen that the investment performance of state-owned enterprises is quite low. The ratio of pre-tax profit on net revenue tends to decrease year by year in the period 2017 - 2020. This ratio is much lower than the common level of all enterprises in Bac Ninh province. In 2017, the pre-tax profit on net revenue ratio of the public sector was 2.59 and in 2020 it has decreased to 1.11.

Table 5. Investment performance of state-owned enterprises in Bac Ninh province from 2017 to 2020

Criteria for evaluating enterprise performance	Unit	2017	2018	2019	2020
Enterprise capital	Billions dong	6.504	6.504	4.205	3.920
Net Revenue	Billions dong	3.713	3.962	2.132	1.895
Pre-tax profit	Billions dong	96	65	23	21
Pre-tax profit/ Net revenue ratio	%	2,59	1,64	1,08	1,11
Pre-tax profit /capital ratio	%	1,48	1,00	0,55	0,54

Source: Vietnam Business White Paper 2021

The ratio of pre-tax return on capital of the State sector is the same. In 2017, this number was 1.48 and gradually decreased by 2020 to only 0.54. That shows that 1VND spent by state-owned enterprises earns 0.54 VND profit in 2020.

Table 6. Investment performance of non-state enterprises in Bac Ninh province from 2017 to 2020

Criteria for evaluating enterprises performance	Unit	2017	2018	2019	2020
Enterprise capital	Billions dong	204.603	204.603	253.558	242.750
Net Revenue	Billions dong	163.672	201.024	229.518	265.639
Pre-tax profit	Billions dong	2.060	2.376	1.254	1.050
Pre-tax profit / Net revenue ratio	%	1,26	1,18	0,55	0,40
Pre-tax profit / capital ratio	%	1,01	1,16	0,49	0,43

Source: Vietnam Business White Paper 2021

The performance of non-state enterprises in Bac Ninh province is even lower than that of the state sector. The pre-tax profit /net revenue ratio in this sector is less than half that of the state sector. In 2017, one revenue dong brought only 1.26 dong profit. But in 2020, one revenue dong was bringing only 0.4 dong profit.

Pre-tax profit /capital ratio is also lower than the state sector all years in the period 2017 - 2020. In 2020, this figure is only 0.43%, lower than the lowest level of the State sector.

In contrast, the investment performance of FDI enterprises is quite high, although it also tends to decrease year by year in the period 2017 - 2020. All indicators are higher than the average of the whole enterprise. In 2017, the Pre-tax profit /net revenue ratio was 8.09 and in 2020 it will decrease to only 5.

Profit before tax/capital ratio of the FDI sector is also very high. In 2017, this index was 13.79% (13 times higher than the non-state sector) and 9.64 in 2020 (22 times higher than the non-state sector).

Thus, it can be seen that the investment performance of different groups of enterprises is very different. If the state and non-state sectors have low investment performance, the FDI sector has high operating performance.

Table 7. Investment performance of FDI enterprises in Bac Ninh province from 2017 to 2020

Criteria for evaluating enterprises performance	Unit	2017	2018	2019	2020
Enterprise capital	Billions dong	590.417	590.417	623.053	626.166
Net Revenue	Billions dong	1.006.950	1.167.114	1.127.217	1.207.424
Pre-tax profit	Billions dong	81.413	75.994	65.952	60.370
Pre-tax profit / Net revenue ratio	%	8,09	6,51	5,85	5,00
Pre-tax profit / capital ratio	%	13,79	12,87	10,59	9,64

Source: Vietnam Business White Paper 2021

3.1.2. Using investment capital

Investment capital is divided into three economic sectors: agriculture, forestry and fishery, industry - construction and services. In which, the total number of operating enterprises tends to increase every year due to the addition of newly established enterprises. In 2017, the whole province of Bac Ninh had 6,837 operating enterprises, by 2020, this number has increased to 10,128 enterprises (an increase of 1.48 times).

Table 8. Number of operating enterprises in Bac Ninh province in the period 2017 - 2020

Economics sector	2017	2018	2019	2020
Agriculture, forestry and fishery	26	28	47	49
Industry and construction	3.161	3.509	4.063	4.597
Service	3.650	4.150	4.819	5.477
Total	6.837	7.687	8.929	10.123

Source: Vietnam Business White Paper 2021

The fastest growth rate of enterprises is in the field of agriculture, forestry and fishery

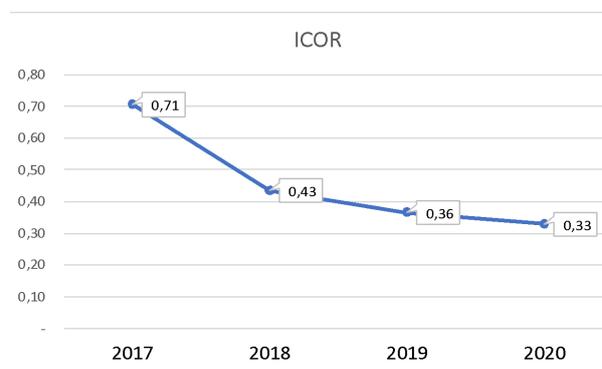
with 1.88 times in 2020 compared to 2017. The lowest enterprise growth rate is in industry and construction with 1.45 times in 2020 compared to 2017. However, this is the industry that accounts for a large number of enterprises. In 2020, the number of enterprises in the industrial and construction sectors is 4,597.

The service sector in Bac Ninh province attracts many enterprises to invest. In 2017, the total number of service enterprises was 3,650. This number in 2020 has reached 5,477. The service sector also has an increase rate of 1.5 times in 2020 compared to 2017.

3.1.3. Effective use of investment capital

The ICOR coefficient (shows the efficiency use of investment capital) in Bac Ninh province is quite good but tends to decrease in the period of 2017 - 2020. In 2017, on average, investors spent 0.71 VND, bringing 1 GRDP up. But in 2020, investors only need to spend 0.33 dong, bringing 1 GRDP up. This shows that investment capital in Bac Ninh province is used quite effectively and economically.

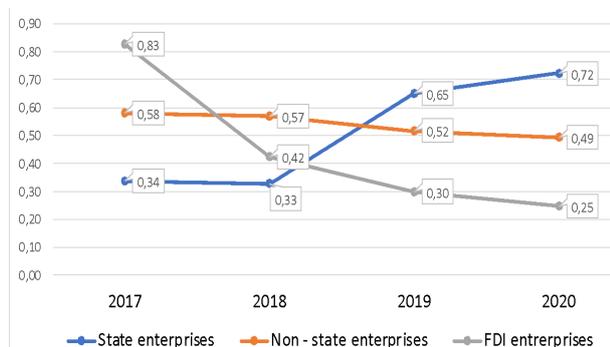
Figure 2. Efficiency of investment capital in Bac Ninh province from 2017 to 2020



Source: Bac Ninh Statistical Office (2021), author's calculation

Looking at the efficiency use of investment capital in each economic sector in Bac Ninh province in the period 2017 - 2020, there is a very clear difference. In the state sector, in 2017-2018, investors only had to spend 0.33 VND to bring 1 GRDP, but in 2019 and 2020, the ICOR index tends to increase, showing investment efficiency decrease. In 2020, the ICOR index of this area has increased to 0.72 but not yet high.

Figure 3. Efficiency of investment capital by economic sector in Bac Ninh province from 2017 to 2020



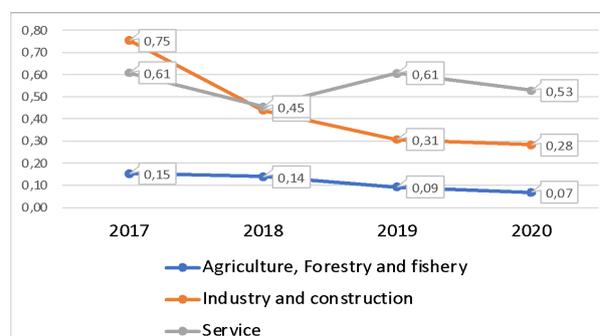
Source: Bac Ninh Statistical Office (2021), author's calculation

Meanwhile, the ICOR index in non-state enterprises and foreign-invested enterprises both tended to decrease. The decrease of the non-state enterprise sector is not much, it is almost stable. In 2017, the ICOR index in this area was 0.58, by 2020 this index will be 0.49. But the ICOR index in the FDI sector decreased markedly. In 2017, on average, each FDI enterprise had to spend 0.83 VND to increase 1 VND GRDP, by 2020 it will only be 0.25 VND. FDI enterprises in Bac Ninh province have very high efficiency use of investment capital.

In 2017, the ICOR index in the state sector is the lowest but in the FDI sector is the highest. In 2020 there was a reversal.

Considering the efficiency use of investment capital by sectors, the ICOR index in the agriculture, forestry and fishery is the lowest and quite stable. In 2017, the ICOR index in the agricultural sector was 0.15, then by 2020 it was only 0.07. That shows that the investment efficiency in the agriculture, forestry and fishery sector is very high. Investors often spend a very small amount (0.07 VND) to have an extra 1 VND GRDP. The agriculture, forestry and fishery sector in Bac Ninh province has the advantage of natural conditions. Although the investment efficiency is high, it is not a strength nor is it an area that is focused on attracting investment like other sectors in the economy.

Figure 4. Efficiency of investment capital by industry sector in Bac Ninh province from 2017 to 2020



Source: Bac Ninh Statistical Office (2021), author's calculation

The ICOR index in industry and construction also tends to decrease year by year. In 2017, investment efficiency in industry and construction sector is the lowest (ICOR is 0.75). But in 2020 industry and construction sector was the second highest investment efficiency with an ICOR index of 0.28. Investment efficiency in the service sector fluctuates the most. In 2017, the ICOR index was 0.61, falling to 0.45 in 2018 but then rising again. In 2020, the ICOR index of this sector is 0.53. This is also the highest ICOR index of all economic sectors.

3.2. Limitations of investments for social and economic development in Bac Ninh province

Firstly, the amount of investment capital in Bac Ninh province is on a decreasing trend. Total investment capital in 2021 has decreased by 52% compared to 2017. In which, the structure of FDI capital decreased sharply in the period from 2017 to 2021.

Second, the enterprise performance is also decreasing. Employee efficiency in 2020 decreased by 3.8 times compared to 2017. ROA and ROE ratios of enterprises both decreased sharply every year. The index in 2020 compared to 2017 decreased by about 1.5 times.

Third, the effective use of investment capital of the state sector has been sharply reduced. A doubling of the ICOR shows that the sector is losing more and more capital to reach its current gross product value.

Fourth, the efficiency use of investment capital is different among economic sectors. The efficiency

use of investment capital in the agriculture, forestry and fishery sector is quite high, in the industry sector increase but in the service sector sharp decrease.

3.3. Causes of limitations

3.3.1. Objective reasons

In 2019-2021, the economy suffered many adverse impacts from the world market, high input material prices affected production and business due to the negative effects of the Covid 19 pandemic caused most countries in the world to halt production, and it became difficult to transport goods between countries.

Although there have been efforts in infrastructure development, this field has not been able to keep up with the high growth rate of the economy and in general is still weak compared to other provinces in the region such as Hanoi, Hai Phong, etc. Room, Hai Duong...

The advantage of an abundant young labor force has not been fully promoted because the training has not met the requirements. Along with the rapid growth of FDI inflows, there has been a shortage of skilled workers and management positions.

Competition to attract foreign direct investment capital continues to become more and more fierce and fierce among provinces, regions and throughout the country.

3.3.2. Subjective reasons

Although the investment environment of the province has improved, the breakthrough progress has been slow compared to other provinces.

Investment promotion has not been diversified in form, so it has not achieved the expected results; funding for investment promotion is small. The promotion of the image of Bac Ninh province in general and the industrial zones of the province is not strong.

4. Suggestions to enhance investment attraction for social and economic development in Bac Ninh province

Firstly, improve provincial competitiveness: The People's Committee of Bac Ninh province continues to propagate the significance of the PCI index in socio-economic development. Bac Ninh needs to attach the responsibility of the head in

handling the enterprise's recommendations for the investment activities of the enterprise. Reform initiatives should be promoted at the departmental, sectoral and district levels.

Secondly, strengthen and improve the quality of investment promotion: Investment promotion implementation must focus on the goal, closely follow the practical needs of the province. Make a list of projects and partners to attract investment. It is necessary to accelerate the process of consolidating the investment promotion organization system in the direction of increasing the number of staff engaged in investment promotion in both quantity and quality. Actively organize investment promotion conferences in the province. It is necessary to focus on investing resources to develop a system that provides information to investors. Completing and updating information continuously on the official website of the province calling for investment. Strengthen market research and investment partners.

Thirdly, speed up the construction of technical infrastructure for enterprises development. In the coming time, the province needs to focus on continuing to perfect and synchronously develop the technical infrastructure system in existing industrial parks and industrial parks that have been approved for construction such as traffic systems, road, electricity, water supply, communication, waste treatment,... The province needs to continue to invest in large repair capital to renovate and upgrade the power grid, and complete the water supply system for production of the enterprise. It is necessary to speed up the progress of site clearance compensation and land handover to investors. Concentrate and mobilize capital for the improvement of the transportation system, in which special attention is paid to the traffic system, the main roads connecting Bac Ninh with Hanoi, Hai Phong, Noi Bai, Hai Duong, Hung Yen. Continue to develop and complete the planning, especially the land use planning.

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RESULTS IN MONETARY AND FISCAL COMPLEMENTARITY TO COMBAT ECONOMIC RECESSION DURING THE COVID-19 PANDEMIC

PhD. La Thi Lam*

Abstract: *The Covid-19 epidemic has exerted adverse effects on socio-economic life, including the decline in economic growth. Despite facing many difficulties in administration, the close coordination in the implementation of fiscal and monetary policies has contributed to certain achievements in promoting economic growth during the period 2020 - 2021.*

• **Keywords:** *fiscal policy; monetary policy; complementarity; State bank of Vietnam; the Ministry of Finance; Government.*

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Tóm tắt: Dịch Covid-19 đã gây ra những ảnh hưởng xấu đến đời sống kinh tế - xã hội, trong đó có sự suy giảm tốc độ tăng trưởng kinh tế. Mặc dù gặp nhiều khó khăn trong công tác điều hành, nhưng sự phối hợp chặt chẽ trong thực hiện chính sách tài khóa và tiền tệ đã góp phần tạo nên những thành tựu nhất định trong thúc đẩy tăng trưởng kinh tế giai đoạn 2020 - 2021.

• Từ khóa: chính sách tài khóa; chính sách tiền tệ; tính bổ sung cho nhau; Ngân hàng Nhà nước Việt Nam; Bộ Tài chính; Chính phủ.

Over 2 years after the Covid-19 epidemic, Vietnam, like many countries around the world, has unstoppably made efforts in disease prevention and control, limiting negative impacts on economic growth and other macro goals. The administration of macroeconomic policies, especially the coordination in the administration of fiscal and monetary policies, has achieved certain successes to achieve the goal of combating the economic downturn, specifically:

First: The Ministry of Finance and the State Bank of Vietnam (SBV) continue to closely coordinate in providing information to have an accurate basis when making operating decisions

during the epidemic situation.

The convention “Regulations on working coordination and information exchange” between the two agencies of the Ministry of Finance and the State Bank signed on February 29, 2012, has officially marked the legal cooperation in the provision of information between these two agencies. Implementing the Regulation on coordination, the State Bank has provided information on the liquidity of credit institutions, interest rate movements in the market, and the balance of deposits with the State Treasury. In contrast, the Ministry of Finance has also provided information on the volume of government bonds to be issued, the expected payments due, the state of budget revenues and expenditures, so that the State Bank can grasp the input indicators for the management of monetary policy. On the basis of the shared information, the functional units of the two sides, especially the Minister of Finance and the Governor of the State Bank, will make appropriate operating decisions, following the guidance of the Government. Besides, the monetary policy and monetary policy have closely coordinated in managing prices and ensuring macroeconomic stability. In the year 2020-2021, the Ministry of Finance and the State Bank of Vietnam have regularly exchanged information in monitoring

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and evaluating macroeconomic developments and market fluctuations (stocks, currencies, foreign exchange, etc.), the market price in the world and in the country to unify the direction and operating strategies.

Second: Unify in the administration of fiscal and monetary policy

In the context that the epidemic situation in the country and the world is very unpredictable, the coordination of monetary policy and fiscal policy is quite smooth. The making of operating decisions is made in the direction of unified goals, based on the spirit of resolutions issued by the Government. With the dual goal of “fighting the epidemic and developing the economy” according to the Government’s directive in 2020-2021, the Ministry of Finance and the State Bank of Vietnam have closely coordinated and promptly advised and proposed to the Government and the Prime Minister. The Government and the Price Management Steering Committee have solutions to combine the management of the fiscal policy and the monetary policy in the process of adjusting the prices of state-managed goods (reducing electricity and water prices, stabilizing rice and other commodities’ prices of essential goods).

In addition, fiscal policy and monetary policy have been closely coordinated in the management of the state budget. The transfer of deposits of the State Treasury at credit institutions to the State Bank from the end of 2019 helps the State Treasury to improve the efficiency of treasury management and at the same time improve its cash flow management capabilities. Based on this, the SBV better forecasts the liquidity status of the credit institution system to have a basis for proactive monetary regulation through flexible management of open market operations, thereby contributing to stabilizing the monetary market, foreign exchange, and inflation control.

With the requirement of concentrating resources for the state budget, the State Bank flexibly operated monetary policy and implemented many positive measures to reduce interest rates to support the ability to access capital for businesses that have created favorable conditions for the issuance of government bonds, ensuring the volume of mobilization and savings for the state budget. At the same time, restructuring the state

budget and public debt has helped to improve fiscal sustainability; government bond issuance has improved significantly with the issuance maturities being gradually extended. As a result, it has contributed to reducing pressure on interest rates and maintaining macroeconomic stability.

On the other hand, according to the provisions of Circular 22/2019/TT-NHNN, effective from January 1, 2020, the limit on buying government bonds has been loosened significantly when commercial banks are allowed to buy and invest in government bonds compared to other commercial banks, with the average total liabilities of the preceding month at the maximum rate of 30% (compared to the old level in Circular No. 06/2016/TT-NHNN - amending several articles of Circular 36/2014/TT - The State Bank, in which the maximum ratio is 25% for State-owned commercial banks, the remaining commercial banks are at 35% compared to the average short-term capital of the preceding month, creating favorable conditions for the issuance of government bonds to achieve the target.)

Third: Monetary policy is operated in the direction of actively and legally supporting the State Budget during the epidemic situation.

Faced with pressures to solve difficulties for employees, employers as well as specific essential industries facing difficulties due to the impact of the epidemic, the State Bank has timely solutions to support the State budget, such as refinancing to the Bank for Social Policies, credit institutions lending to the aviation corporation... The 0% interest rate credit mechanism from the State Bank has both contributed to reducing the pressure of support expenditures from the state budget and ensured support. State budget support is in accordance with the law on the principle of loan repayment.

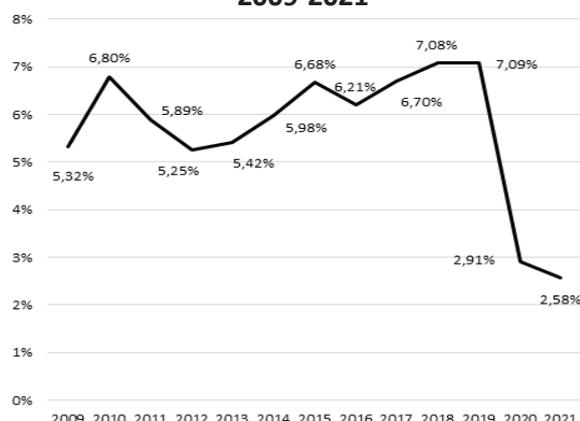
Fourth: The coordination of fiscal and monetary policy management has made an important contribution to disease prevention and macroeconomic stability.

Vietnam’s fiscal and monetary policies are managed from 2020 to 2021, which has helped the economy operate stably and maintain its growth momentum. GDP in 2020 will increase by 2.91% (in the first quarter, it increased by 3.68%; the second quarter increased by 0.39%; the third

quarter increased by 2.69%; the fourth quarter increased by 4.48%), although this is the lowest growth rate after more than a decade, during the Covid-19 epidemic complicated developments, negatively affecting all socio-economic fields, this is a great success of Vietnam. This shows the correctness in directing and administering economic recovery, epidemic prevention, and control and the determination and consensus of the entire political system, the Government, the Prime Minister, the efforts and unanimous of the whole political system, the works and efforts of the people and the business community to effectively implement the goal of “both disease prevention and socio-economic development”.

In the first months of 2021, the epidemic situation was well controlled, so GDP in the first 6 months of 2021 increased by 5.64%, higher than the growth rate of 1.82% in the first 6 months of 2020 (lower than the growth rate of 7,05% and 6.77% of the same period in 2018 and 2019). When the epidemic broke out again, the gross domestic product in the third quarter of 2021 decreased by 6.02% compared to the same period last year (the deepest decrease since Vietnam calculated and announced the GDP of the quarter to the end of the year). Now), in the fourth quarter, economic growth has reversed compared to the third quarter with an increase of 5.22%, so GDP growth in 2021 is 2.58% compared to the same period last year (Figure 1).

Figure 1: Vietnam's economic growth rate 2009-2021



Source: GSO

As can be seen, Vietnam's economic growth in 2020-2021 is the lowest in more than a decade. However, in the general context of the world

being deeply affected by the Covid epidemic, many worldwide major economies have to accept negative economic growth, the economic growth results of Vietnam in the past 2 years were still considered encouraging. In a recent report, Standard & Poor's (S&P Global Ratings - based in the United States) has kept Vietnam's national credit rating unchanged and raised Vietnam's outlook from “stable” to “positive”. Thus, since the outbreak of the Covid-19 epidemic in 2020, Vietnam is the only country that has been upgraded to “positive” by all three international credit rating agencies including Moody's, Standard & Poor's and Fitch. According to economic experts, this result has confirmed Vietnam's success in realizing the “dual goal” of both effective Covid-19 prevention and control and socio-economic development. In particular, monetary policy is managed flexibly and prudently, thereby contributing to stabilizing the macro-economy, curbing inflation, and ensuring growth efficiency. The level of credit interest rates has been lowered reasonably, helping the economy with cheap capital to recover production and business. At the same time, bank credit was directed to essential sectors to maintain economic growth momentum, but strict control over potentially risky sectors ensured the safety of the banking system and kept inflation below 4% as the target, fiscal policy has also followed closely to remove obstacles that negatively affect economic growth and social security. Accordingly, the total amount of tax and budget revenue that has been extended, exempted, and reduced according to the policies issued in 2020 is about VND 129 trillion (of which the amount of tax and land rent is extended by about 97.5 trillion VND; the amount of tax, fee, fee, and land rent is exempted or reduced by more than 31.5 trillion VND), this figure is expected to be 118 trillion VND in 2021. Regarding budget expenditure, the amount of support in 2020 is 16.8 trillion VND. In 2021, it is expected that over 14.95 million workers will receive direct and indirect support with a total estimated cost of over 26 trillion VND.

Stabilizing the macro-economy also helps create confidence for domestic and foreign investors, maintain FDI inflows and invest in the stock market. According to statistics from the Ministry of Planning and Investment, in 2020, Vietnam will attract 28.53 billion USD. In

2021, registered FDI in Vietnam is 31.15 billion USD, up 9.2% over the same period in 2020, of which newly registered capital in 2021 has 1,738 licensed projects with registered capital. registered USD 15.25 billion, down 31.1% in the number of projects and up 4.1% in the registered capital over the previous year.

In the context of the complicated development of the Covid-19 epidemic, distance measures limit foreign investors from coming to learn and deploy projects in Vietnam, however, FDI invested in Vietnam still tends to This shows that foreign investors are still very confident in the investment environment in Vietnam, and the prospect of attracting FDI into Vietnam is still considered quite positive.

Despite the effects of the epidemic, the size of the stock market exceeded the Government's target until 2020 and the bond market continued to maintain its growth momentum. The size of the stock market capitalization reached nearly 5,294 trillion VND, an increase of 20.8% compared to the end of 2019, equivalent to 87.7% of GDP in 2019 and 84.1% of GDP in 2020, exceeding the target. The bond market has 477 listed bond codes with a listed value of 1,388 trillion VND, up 16.8% compared to the end of 2019 (equivalent to 23% of GDP).

By the end of 2021, Vietnam's stock market capitalization will reach 7,729 trillion VND, an increase of 46% compared to the end of 2020, equivalent to 122.8% of GDP in 2020. The average trading value on the stock market reached 21,593 billion VND/session, a corresponding increase of 247.27% compared to the average in 2020; The size of the market's listing and registered transactions reached VND 1,727 trillion, up 14.1% at the end of 2020.

Fifth: Fiscal policy and monetary policy are managed flexibly based on the actual situation and specific characteristics of localities in response to the requirements of epidemic prevention and economic recovery.

On the basis of the Government's directives and actual problems in policy implementation, the Ministry of Finance, as well as the State Bank of Vietnam continuously promulgate regulations to amend inadequate regulations, supplement more appropriate measures such as expanding

the beneficiaries, reducing the complicated and unrealistic disbursement procedures for the beneficiaries of the policy, adjusting how support packages are disbursed budget as well as bank credit, especially the disbursement of welfare support packages for people facing difficulties due to the impact of the epidemic situation. In addition, the Government has empowered localities to be more proactive in determining criteria, subjects, and levels of support for self-employed groups and a number of other specific objects funded by the local budget on the basis of the specified support floor). In this spirit, all 19 southern provinces and cities implementing Directive 16 have issued plans to support and supplement target groups with their policies, suitable for each locality such as lottery ticket vendors, traditional motorbike taxis, street vendors, and people working in business establishments without labor contracts. Thanks to the timely implementation of measures to quickly let people access the support package, in general, the social security during the pandemic period is well controlled, proactively and promptly prevented, do not allow complicated situations to occur, negatively affecting the epidemic prevention and control work and the social environment.

Conclusion

Although there are many difficulties and shortcomings in the administration of fiscal and monetary policy in the face of unpredictable developments of the Covid-19 epidemic. However, thanks to the coordination and management flexible, fiscal and monetary policies have actively supported the implementation of macroeconomic goals in general and economic growth in particular. These successes lay the foundation and orientation for the administration of fiscal and monetary policy in 2022. Proactive, prudent, flexible, focused, and closely coordinated with policies Other macroeconomic policies to promote economic growth in the face of complicated developments of the Covid-19 epidemic continue to be the orientation set out in the management of financial and monetary policy in 2022.

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AN EXPLORATORY INVESTIGATION INTO FACTORS INFLUENCING ENTREPRENEURIAL INTENTION OF ETHNIC MINORITIES IN THE NORTHERN MOUNTAINOUS REGION OF VIETNAM

MSc. Nguyen Quang Khai* - PhD. Phan Thanh Hung** - Prof.PhD. Nguyen Thi Tuyet Mai***

Abstract: *This study aims to explore several factors influencing entrepreneurial intention of ethnic minorities in the northern mountainous region of Vietnam. From entrepreneurial learning perspective, twelve interviews were conducted in Cao Bang and Bac Kan provinces. The qualitative research findings suggest the important role of several factors in forming entrepreneurial intention, including acculturation, past experience, and modern self. Based on the findings, implications for policymakers are provided and future research directions are suggested.*

• Keywords: *entrepreneurial learning theory, entrepreneurial intention, influencing factors, ethnic minorities, qualitative research.*

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Tóm tắt: Nghiên cứu này khám phá một số yếu tố ảnh hưởng tới ý định khởi nghiệp của người dân tộc thiểu số miền núi phía Bắc Việt Nam. Dựa trên góc nhìn của lý thuyết học tập khởi nghiệp, mười hai cuộc phỏng vấn sâu đã được thực hiện ở Cao Bằng và Bắc Kạn. Kết quả nghiên cứu đã chỉ ra vai trò quan trọng của một số yếu tố trong việc hình thành ý định khởi nghiệp của người dân tộc thiểu số như giao thoa văn hóa, kinh nghiệm, khái niệm bản thân (người hiện đại). Từ đó, bài viết đưa ra các hàm ý chính sách và gợi ý cho nghiên cứu trong tương lai.

• Từ khóa: *lý thuyết học tập khởi nghiệp, ý định khởi nghiệp, yếu tố ảnh hưởng, người dân tộc thiểu số, nghiên cứu định tính.*

1. Introduction

The research topic related to entrepreneurship, entrepreneurial intention has attracted much attention from both scholars and practitioners. Previous studies, however, have been conducted mainly in developed countries, while a relatively limited research effort has been given to study

this important topic in emerging economies such as Vietnam (cf., Duong and Le, 2022). This study explores factors influencing entrepreneurial intention (EI) specifically among ethnic minority people in the northern mountainous region of Vietnam that has received very little research attention to date.

Ethnic minorities in the Northern mountainous region of Vietnam play an important role in national security, but most people here still have a low standard of living (World Bank, 2019). For a long time, they have been viewed as passive beneficiaries of government support. The government has actively proposed many solutions to improve the poverty status of ethnic minorities, of which promoting their EI is an important solution. The ethnic minorities' development of EIs can help them earn more income and the income gap between the ethnic mountainous residents and the mainstream can be gradually reduced. Recent efforts in promoting entrepreneurial acts, however, have not been very successful. In order to effectively support ethnic minorities' start-ups, it is necessary to gain

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insights of the main factors that shape the ethnic minorities' EI.

The extant literature has suggested the important role of entrepreneurial learning such as entrepreneurial education in entrepreneurship. Compared with the majority of people in Vietnam, the ethnic minorities are generally noted to have more difficulties in accessing education system, and thus seem to have limited capability of starting a business. In order to enrich our understanding of the potential antecedents of EI for policy implications regarding enhancing entrepreneurial capability of ethnic minorities, this study aims to answer the following question: What are the main driving factors that shape EI among ethnic minorities in Vietnam from entrepreneurial learning perspectives? To serve this purpose, we employed qualitative research approach. Specifically, we conducted in-depth interviews with the ethnic minorities living in the northern mountainous region of Vietnam.

In this paper, after the introduction, theoretical background is presented, followed by methodology section, and then the research findings. Finally, we provide discussion and implications.

2. Theoretical Background

2.1. Entrepreneurship and Entrepreneurial Intention

There are various definitions of entrepreneurship (Popov et al., 2019). However, the definition of Shane and Venkataraman (2000) seems to be the most complicated but also the most widely recognized (Popov et al., 2019). According to Shane and Venkataraman (2000), entrepreneurship is the scholarly examination of how, by whom, and with what effects opportunities for future goods and services to be discovered, evaluated, and exploited. In the same vein, entrepreneurs refer to individuals who discover, evaluate, and exploit profitable opportunities.

With regard to behavioural intention, it is defined as an individual's effort to perform a certain act (Ajzen, 1991). Thompson (2009) defined EI as a self-acknowledged conviction

that someone intended to build a new business and brightly plan to act things in the future. In line with this, EI describes a desire to create and own a business (Zhang and Cain, 2017). Past research has suggested EI as a strong antecedent of actual action in starting a business (Krueger et al., 2000).

2.2. Entrepreneurial Learning Perspective

Entrepreneurial learning has long been of interest to researchers and is thought to be related to both the start-up process as well as the development of entrepreneurs (Rae, 2005). Minniti and Bygrave (2001) argue that entrepreneurship is a process, and theories of entrepreneurship cannot lack the role of learning theory. According to Rae (2005), entrepreneurial learning can be defined as "learning to recognize and act on opportunities, and interacting social to initiate, organise and manage ventures." Many researchers believe that entrepreneurial learning can take place through experience (Rae and Carswell, 2001). That experience can be based on what they have experienced in starting a business, even if they have not experienced it (Hahn et al., 2017) through entrepreneurial education. However, Rae (2005) argues that entrepreneurial education programs often provide potential entrepreneurs only with cultural knowledge, entrepreneurial knowledge and skills. The "art" of entrepreneurship is often learned through experience in business rather than in educational programs, such as contextual learning (Rae, 2005).

Based on the synthesis of previous studies on learning, Rae (2005, p. 325) asserted that "learning must be explored as a contextual and active rather than a purely educational process". Rae (2005) proposed "the triadic model of entrepreneurial learning," including personal and social emergence, the negotiated enterprise, and contextual learning, of which contextual learning occurs when individuals participate in the community, industry, and other networks. In these networks, individuals share knowledge and experiences and build relationships, through which individuals develop intuition and the ability to recognize opportunities (Rae, 2005).

Acculturation

Past research has suggested the important role of acculturation in human behaviors (e.g., Ebrahim et al., 2016; Li et al., 2016; Jaffe et al., 2018), such as the risk of substance abuse (Koneru et al., 2007; Koya & Egede, 2007; Lutsey et al., 2008), using condom or health care services, and controlling children (Afafe-Munsuz & Brindis, 2006; Lara et al., 2005). In the entrepreneurship research domain, there seems to be very modest research attention is given to examine the role of acculturation, especially in the context of ethnic minorities. Under the light of entrepreneurial learning, acculturation is closely associated with contextual learning. Previous studies of immigrant businesses which is considered to be similar to ethnic minorities' businesses in some extent, show that the acculturation of immigrants to the indigenous culture affects their business behaviours (Robertson and Grant, 2016).

There are four levels of acculturation corresponding to four main strategies: assimilation, integration, separation and marginalization (Jaffe et al., 2018). Firstly, assimilation strategy is replacing the original culture with host culture. Secondly, integration strategy happens when people retain both their origin and adopted culture. Thirdly, separation strategy occurs when immigrants keep their original culture and avoid adopting the host society. Finally, marginalization takes place when individuals refuse their heritage culture and not interact with the culture of the host society at the same time (Berry, 2005). The conception of acculturation as assimilation has been widely used in the literature (cf. Ryder et al., 2000). Following this approach, in the context of ethnic minorities, acculturation refers to the degree to which the ethnic minority people adapt to/assimilate with the new culture (i.e., the mainstream culture of Kinh people) such as exposure to the mainstream culture, willingness to seek language education, and frequency of contact with people from the mainstream culture. In the present study, we are interested in exploring the role of acculturation in fostering ethnic minorities' intention to start their businesses.

Prior Experience in Self-employment

As mentioned above, entrepreneurial learning can take place through experience (Rae and Carswell, 2001). The literature has suggested prior self-employment experiences have a positive and significant impact on entrepreneurial intention (e.g., Lee and Tsang, 2001). In this study, we are also interested in exploring the role of experience in self-employment in shaping ethnic minorities' intention to become entrepreneurs.

3. Methodology

This study used qualitative research approach. Specifically, in-depth interview was employed as the main method of data collection.

3.1. The Subjects

To serve our research purpose, we decided to choose Cao Bang and Bac Kan, two mountainous provinces in northern region of Vietnam, as research venues for data collection. The sample was selected on purpose, consisting of the subjects from different ethnic groups, locations, ages, gender, and levels of development of ethnic groups. Ten of our interviewees have started their business for one to three years. This period of time was used to make sure that the informants still remembered the process of forming their intention to start-up their business. The other two have no intention yet to become entrepreneurs. The sample characteristics are described in Table 1.

Table 1. The subjects' characteristics

Subject	Age		Gender		Ethnic		Province		Education			Start-up intention		Average income		
	>35	<35	Male	Female	Over 1 million	Under 1 million	Border	Non-border	Below high school	High school	University/College	Yes	No	High	Average	Low
Number	5	7	7	5	7	5	6	6	3	3	6	10	2	7	3	2
(%)	42	58	58	42	58	42	50	50	25	25	50	83	17	58	25	17
1	1982			x			Nung	Bac Can			College	x			x	
2		1991	x				Dao	Bac Can	Grade 9			x				x
3		1992		x			Dao	Bac Can			University	x				x
4	1983			x			Dao	Bac Can			College	x				x
5		1987		x			Nung	Bac Can			Grade 12	x			x	
6		1990	x				Tay	Bac Can			Grade 12	x			x	
7	1982		x				Tay	Cao Bang			Grade 12	x			x	
8	1966			x			H.Mong	Cao Bang			Grade 7			x		x
9		1992	x				H.Mong	Cao Bang			Grade 9					x
10		1991	x				Tay	Cao Bang				University	x			x
11		1993		x			Tay	Cao Bang				University	x			x
12	1977			x				Cao Bang				University	x			x

3.2. Data Collection and Analysis

In this study, ten out of twelve subjects were interviewed at their home for their convenience. Two interviews were conducted at cafés since the subjects were out of their home town. During the interviews, all the subjects were informed of

the interview purpose, and they were asked for audio recording permission. The total interview recording time is 659 minutes and 45 seconds, with the shortest one of 20 minutes 35 seconds and the longest one of 77 minutes. The average time for an interview was nearly 55 minutes.

The tape transcribing process was conducted within 24 hours from the interview. The emergent contents of the interview were added to the interview guideline for the next interview. The transcribed data was entered into Nvivo 10 software for analysis. To serve the analysis purpose, the authors first analysed data independently, then the results were compared with each other. If there was some content difference found from the analysis, the whole research group got together for discussion and clarification.

4. Research Findings

Several themes emerged from the interviews with ethnic minority people, that are presented in the following.

4.1. The Role of Acculturation and Past Experience in Self Employment

From our interviews, a theme emerged pertaining to how ethnic minorities learn to recognize and act on opportunities to come up with intention to start up a business. The interview findings show that entrepreneurial learning plays an important role in shaping ethnic minorities' intention to become entrepreneurs. However, it reveals that ethnic minority people often learn entrepreneurial knowledge and skills through contextual learning rather than through entrepreneurial education programs. According to Rae (2005), contextual learning occurs through participation in communities, in which individuals with relevant experiences constructively share their knowledge. Our informants often expressed that they learnt to recognize opportunities and the ways to start-up and run a business through their contacts and interacts with experienced people (i.e., "experts") in their networks who are the Kinh people. The following opinions are some examples.

"If I did not meet Ms. Q, I didn't know what I would do. At that time, I only raised [local] chickens. Raising chickens is difficult, chickens died a lot. If you want to raise chickens, and they won't die, you have to find out information ... Since working with Ms. Q [smile], I have raised industrial chickens [with big scale], before I only raised local chickens, I didn't have experience, chickens died a lot." Female, Subject 4

"That day, Mr. H [the Kinh] came here to ask about business cooperation. Just a random acquaintance. He asked me to provide the raw materials of 'dong'. He needed raw materials for his production, so he wanted me to provide them. I was also invited down there to visit his workshop, ...and I learnt how to do it, then I followed to do that I don't have much money, so I just produce on a smaller scale." Male, Subject 7

"... He [a Kinh staff working for an NGO] showed me how to do this and that, like a teacher. Then, everything changed from the moment I followed him, I just listened to him. Everything changed completely [the way to analyze business opportunities and run a business]... One thing I still remember until now is that when I made essential oils, he asked me "What do you see as the ethnic identity here, and what is the indigenous and unique thing of your ethnic?" The tangerine tree is a typical thing of Bac Kan, but no one has yet processed products from that tangerine. I am currently processing it, so it is a perfect thing to start a business from local products, which are available." Female, Subject 1

Cultural exchanges contribute to changing people's beliefs, conceptions and common senses, thereby changing their perception and behaviour. For the ethnic minorities in the Northern mountainous provinces of Vietnam, cultural change has happened clearly between generations. While the older generation seem to stick more with the customs and traditions through their regular usage of their own language and ethnic attire, the young generation seems to have a stronger cultural interference compared to the previous one, cultural interference often happens when they gradually accept the values and beliefs of the Kinh people. All the informants

with entrepreneurial intention participating in interviews demonstrated a significant level of cultural interference such as the language they use daily.

"... At home, I speak mostly national language... Even my kids now all speak the Kinh language..." Male, Subject 7

"...I don't have any traditional clothes of the Tay anymore, since I was a child until now ... I don't know what the Tay ethnic clothes look like ... if I don't say it, probably people won't notice and won't know I'm a Tay." Male, Subject 6

The Role of Prio-self Employment Experience

Several informants in our study suggested the important role of experience in self-employment in forstering one's intention to become an entrepreneur. The following is an example.

"I have a close friend from high school. When he was a college student he was already very entrepreneurial. As a student, he had business intelligence [doing business], he had stumbles, also experienced of falling into debt and went bankruptcy, ... However, because his business scale was not large he was able to recover. Each time he stumbled, he gained more experience. He just continues [acting on new business opportunities], and now he is doing quite well [smile]." Male, Subject 11

4.2. The Role of other Personal Factors

When being asked about common characteristics of those people who have intention or willing to start a business, our informants often mentioned some terms such as "being open-minded", "having a wide network", and "being able to recognize the business opportunities". These characteristics are in line with the concept of modern self developed by Nguyen et al. (2009). The following quotes illustrate this point.

"I have a school friend. Now she's opening a make-up shop and providing photography services... I think she's doing a great job, lots of work.... People like her - opening their own business - usually they are active, open-minded, communicative., they know many people. From the old days at school - I already thought that she

was very suitable for doing business like sales job." Male, Subject 11

"Those who intend to start a business must have a vision, have contacts with many people. They must have recognition of the business opportunity to start a business. If you just stick to tradition, you won't do anything, you won't be able to start a business." Female, Subject 1

In contrast, from our interviews, those who are associated with low or no intention to start up a business often stick to tradition, closely follow the traditional customs and habits, and hesitate to change. They are, perhaps share some common characteristics of people holding a high level of traditional self (Nguyen et al., 2009). The following is an example.

"My Hmong customs still maintain. My grandparents in the past did it, my relatives still do it, and I still do the same...I just grow some rice and some cassava to serve livestock. I'm a farmer, I can do only farming." Male, Subject 8

The findings from our interviews also suggest some other personal factors that play a significant role in shaping ethnic minorities's intention to start-up a business. Some salient factors include one's risk-taking propensity, innovativeness and proactiveness, and positive attitude toward becoming an entrepreneur.

5. Discussion and Implications

One of the key findings of this study is about the significant role of entrepreneurial learning, specifically the importance of acculturation and prior experience in self-employment in shaping entrepreneurial intention of ethnic minority people. The qualitative findings also suggest several personal factors that may contribute to forming one's intention to become an entrepreneur, such as self-concepts (i.e., modern self vs. traditional self), and attitude toward entrepreneurship.

From the findings of this study, it seems that proficiency in the Kinh language, through acculturation, has facilitated ethnic minorities to participate in social networks, interact with many mentees, and through that, can learn how

to recognize opportunities and start a business. Contextual learning seems to be a suitable and effective entrepreneurial learning mode for ethnic minorities in the northern mountainous areas of Vietnam when they are often in very remote areas with low education level.

The findings provide important implications for policy makers in facilitating acculturation process among ethnic minorities to enhance their entrepreneurial intention. However, the high level of acculturation of ethnic minorities in Vietnam has caused significant consequences in losing the cultural identity and reducing cultural diversity of these groups. The challenge for policy makers is how to preserve the cultural identities and at the same time enhance EI level and entrepreneurship among ethnic minorities. This study also provide suggestions for policy makers to develop relevant and effective programs to develop positive attitude toward entrepreneurship and enhance entrepreneurial orientations among ethnic minorities in Vietnam.

This study has some limitation associated with exploratory nature of the qualitative research. To generalize the findings, future research should conduct a survey with large sample to test the impact of potential factors that influence entrepreneurial intention among ethnic minorities in Vietnam. The research model may be developed to examine the role of some factors from the learning perspective such as acculturation and past experience in self-employment. The impact of some other personal factors should also be considered in the model such as self-concept, attitude, and entrepreneurial orientations.

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NEW REGULATIONS IN INTERNATIONAL FINANCIAL REPORTING STANDARDS ON LEASES - IFRS 16

PhD. Nguyen Hong Nga*

Abstract: *International Financial Reporting Standards (IFRS) 16 shows the change in accounting for the most fundamental leases over the last 30 years. Accordingly, IFRS 16 removes the classification and accounting of operating and financial leases for lessees and requires lessees to record most leases on the balance sheet. When applying IFRS 16, the lessee will record more leased assets and lease liabilities on the balance sheet, increasing transparency about the effects of lease liabilities and comparability of financial statements of asset purchasers and asset lessors. The following article studies the International Financial Reporting Standards on Leases (IFRS 16) and its impact on its application to enterprises in Vietnam. Thereby, the study also analyzes the difficulties and challenges faced by enterprises when applying IFRS 16, thereby proposing measures to help Vietnamese enterprises move towards integration with international accounting.*

• Keywords: *business, IFRS 16, lease, contract, liability.*

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Tóm tắt: *Chuẩn mực báo cáo tài chính quốc tế (IFRS) 16 cho thấy sự thay đổi về kế toán các hợp đồng thuê căn bản nhất trong hơn 30 năm gần đây. Theo đó, IFRS 16 bỏ việc phân loại và kế toán thuê hoạt động và thuê tài chính đối với bên đi thuê và yêu cầu bên đi thuê ghi nhận hầu hết các hợp đồng thuê lên bảng cân đối kế toán. Khi áp dụng IFRS 16, bên đi thuê sẽ ghi nhận thêm tài sản thuê và nợ thuê phải trả trên bảng cân đối kế toán, làm tăng tính minh bạch về ảnh hưởng của nghĩa vụ nợ thuê và tính so sánh của báo cáo tài chính của các đơn vị mua tài sản và thuê tài sản. Bài viết sau nghiên cứu về chuẩn mực báo cáo tài chính quốc tế về thuê tài sản (IFRS 16) và những tác động của nó đến việc áp dụng đối với các DN ở Việt Nam. Qua đó, nghiên cứu cũng phân tích những khó khăn, thách thức đối với các DN khi áp dụng IFRS 16, từ đó đưa ra các biện pháp giúp các DN Việt nam có thể tiến tới hội nhập cùng kế toán quốc tế.*

• Từ khóa: *doanh nghiệp, IFRS 16, thuê tài sản, hợp đồng, trách nhiệm.*

1. Introduction

International Financial Reporting Standard IFRS 16 was issued in January 2016 and is effective for financial years beginning and after

January 1, 2019. Changes when applying IFRS 16: For lessees, accounting for leases will change completely compared to before: no longer distinguishing leases recorded in the balance sheet (financial leases)) and off-balance sheet leases (operating leases). Instead, the lessee has only one way of recognizing leases in the balance sheet as finance leases in accordance with IAS 17. There are some specific exceptions, such as short-term leases, low value leases or variable rents over the lease term. The lessor continues to do the accounting as required in IAS 17, as a result of the classification of operating leases and financial leases. The following article studies the international financial reporting standards on leased assets (IFRS 16) and analyzes and evaluates the changes of this standard, and also provides recommendations to help Vietnamese enterprises can be applied in practice.

2. Theoretical basis

2.1. Overview of IFRS 16

The International Accounting Standards Board (IASB) published the International Financial Reporting Standard (Financial Reporting) No. 16 - Accounting Standard for Leases (IFRS 16) in January 2016 to replace the Accounting Standard. International number 17 - Guidelines for leasing properties (IAS 17). Applied from January 1,

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2019, IFRS 16 describes how to record, measure, prepare and present lease transactions on financial statements according to IFRS. This Standard prescribes a lessee accounting method that requires lessees to recognize assets and liabilities for all leases except assets with a lease term of 12 months or less or assets low value.

The lessee measures usable assets similar to other non-financial assets (property, plant, equipment) and lease liabilities as similar to other financial liabilities. As a result, the lessee will recognize depreciation on the right-of-use asset and the interest payable on the lease, and separate the pre-lease payment into the principal payable and the stated interest. on the statement of cash flows according to IAS 17.

Assets and liabilities arising from an initial lease are measured on the present value basis. The measurement includes irrevocable lease payments (including linked inflation payments) and also includes payments to be made for an optional period if the lessee wishes to extend the term. lease, or terminate the lease.

IFRS 16 requires the lessee as well as the lessor to disclose information in the financial statements about leasing and leasing activities. In particular, IFRS 16 requires the lessee to make an assessment and decision to provide basic information, to meet the wishes of users of financial statement information to assess the impact of leasing on the financial position of the lessee. capital, operating results and operating cash flows from leasing.

The lessor continues to classify the lease as a financial lease or an operating lease. The lessor's accounting method under IFRS 16 has not changed significantly from the previous standard, IAS 17. However, IFRS 16 can have a significant impact on the financial statement presentation of the whole enterprise (DN) to rent and lease.

Under current International Accounting Standard on Leases (IAS 17), lessees record lease transactions off the balance sheet for operating leases or on the balance sheet for leases. finance. The new standard requires lessees to record most leases on the balance sheet. IFRS 16 changes the definition of financial ratios and EBITDA, and affects performance indicators. IFRS 16 also affects lessor's business models and when negotiating

leases. Changes to the accounting guidelines for leases are just the tip of the iceberg. Changes to the lease accounting standard have far-reaching implications for the lessee's processes, systems and business controls. Businesses will need a cross-functional approach to implementing the standard. This new policy does not only focus on accounting for leases. The new standard will have an impact on financing ratios, loan agreements, credit ratings, borrowing costs and business identification.

2.2. Difference between IFRS 16 and IAS 17, VAS 06

Table 1: Highlights comparison between IAS 17 and IFRS 16

	IAS 17	IFRS 16
Finance Lease	<ul style="list-style-type: none"> On-balance sheet (assets, liabilities) Recognition of Depreciation in Operating Expenses Recognition of Leases Interests in Interest Expenses 	<ul style="list-style-type: none"> On-balance sheet (assets, liabilities) Recognition of Depreciation in Operating Expenses Recognition of Leases Interests in Interest Expenses
Operating Lease	<ul style="list-style-type: none"> Off-Balance Sheet Recognition of Leases Expenses in Operating Expenses 	<ul style="list-style-type: none"> Exemptions: shortterm (<12 months), small contract (5.000.-EUR), specific standard.

Source: Author's compilation

Table 2: Difference between IFRS 16 and IAS 17, VAS 06

Content	IFRS 16	IAS 17	VAS 06
Scope of application	Applies to all property leases, including use right leases in sublease, except: Lease property for the extraction or use of minerals, oil, natural gas and similar non-renewable resources; Leases of biological assets within the scope of IAS 41 - Agriculture held by the lessee; Service Authorization Agreement within the scope of IFRIC 12 - Service Empowerment Agreement; Intellectual property licenses are granted by the lessor within the scope of IFRS 15 - Revenue from contracts with customers; The right is held by the lessee under a license agreement within the scope of IAS 38 - Intangibles.	The following assets cannot be used as a basis for determination: Assets held by the lessee are accounted for as investment properties (See IAS 40 Investment properties); Investment property provided by the lessor under an operating lease (see IAS 40); Biological assets held by the lessee under a finance lease (see IAS 41 Agriculture); or Biological Assets provided by the lessor under an operating lease (see IAS 41).	Not to mention

Content	IFRS 16	IAS 17	VAS 06
Classification of rental contracts	Introduce a new definition of rental property. Contracts are classified into rental contracts and service contracts (non-lease contracts).	Operating lease and finance lease	Operating lease and finance lease
How to account	Require lessees to record most leases on the balance sheet.	The lessee records lease transactions off the balance sheet for operating leases or on the balance sheet for finance leases.	Similar to IAS, except for items that do not require presentation: - Reconciliation between the sum of the minimum lease payments at the date of the financial statements, and the carrying amount of those payments; - Description of the lessee's main lease agreements.

Source: Author's compilation

2.3 Main contents of IFRS 16

Lease of assets like financial instruments at amortized cost, lease of assets like deferred tax at the right to use the asset, deferred debt when leasing assets.

* The change in the term "Lease property", when the enterprise can't afford to buy assets, they rent the assets and pay the monthly rent (like buying a phone on installment).

Lease is a contract to lease an asset (or a part of a contract), which generates the right to use the property in a period, ie the enterprise must pay to have the right to use it.

Lessor: they provide the underlying asset and have the right to collect money

Lessee: they have the right to use the underlying property, and are obliged to pay the rental

Operating lease: only used with the lessor, the lessee does not distinguish between financial lease and operating lease. A finance lease is when the value of the lease is large and occupies most of the useful life, while an operating lease is when there is no transfer of most of the risks and benefits of the

asset from the lessor to the lessee. For example, the machine is used for 10 years, Party A is used for 3 years, so the machine is the underlying asset and the right to use the machine, ie Party A uses 3 years is the Right of use asset.

Unguaranteed residual value (residual value of the underlying asset not guaranteed by the lessor): ie the residual value of the leased asset that is no longer guaranteed by the lessor, how much is left, related to interest default rate.

Lease payment: the rent payment can change if interest rates or inflation change, for example renting the property for 50 years (150 million/year), if inflation increases, the rent will also change. Failure to do so will result in a penalty in the contract.

Implicit interest in a lease: used to determine the present value of the minimum rental payments. For the lessor, the rent shall be collected and after the contract is terminated, the remaining value of the leased property shall be recovered. Implicit interest rates can be used if the interest rate cannot be determined due to inflationary changes.

Incremental interest rate: ie related to the source of money needed to acquire assets in the current economy, for example, how much is the interest rate if you borrow a bank loan to buy that asset (i.e. the same asset to get the asset to use)

Lease term: Lease term (non-cancelable), when the two parties sign a lease within 3 years, the rent must be paid for all 3 years and cannot be canceled.

Short term lease: A short-term lease (under 12 months) without the right to buy back is not a property lease contract.

* Conditions to satisfy the property lease contract:

Step 1: Is the property specified in the lease?

For example, the lessor clearly commits in the contract that it will perform maintenance, during the maintenance period, to compensate for another similar property, this is completely valid.

Step 2: Clearly identify customers (lessee) and supplier (lessor), customers who get economic benefits from the use of assets.

Step 3: Who has the right to decide how to operate and use the property during the lease term.

If the answer is customer, then this is a lease of the property (the customer can operate, design the property as long as it does not change the original structure of the property). If the answer is a supplier, this is not a lease.

* Recognition and measurement for leased property

VAS06/IAS 17	IFRS 16
There is a distinction between a finance lease and an operating lease. Accordingly, a finance lease means that there is no transfer of ownership, only the risks and benefits related to the right to use the asset. An operating lease does not transfer the risks and rewards associated with the right to use the asset.	There is no distinction between a finance lease and an operating lease for the lessee. The finance lease contract guarantees 3 conditions (controllable, irrevocable and bringing economic benefits from the use of the asset). Lease is an activity of borrowing with assets (recognizing liabilities), which makes it easy for users of financial statements to misjudge business leverage because they consider borrowed money in equity. Assuming the bank finds that the dangerous threshold is exceeded, the bank will no longer lend and it is expected to be recognized in operating leases (Leases involve the right to use the asset and the obligation to pay the lease payments). This is the activity of borrowing and receiving with assets.

Operating leases are defined as short term and low value. For example, if the property is leased for less than 12 months and does not include a buy-back clause, then this is a short term. For example, the underlying asset value is low (less than 5,000 USD), then this is satisfied as low value.

Lease liability	Righ of use asset
Present value is based on the implicit interest rate (or borrowing rate), i.e. on the time value of money	- Pay the initial payable, for example a non-refundable deposit included in the High of use asset - Bonuses, such as house purchases, like a trade discount, reduce to the Righ of use asset - Costs directly related to having a High of use asset, including the cost of dismantling and restoring the environment.

For example, in 20X6, company T signs a contract to lease the property for 4 years, the useful life of the asset is 8 years, knowing that the company pays 16,000 USD annually in rent, call options in year 4 is 20,000 USD, the initial payment to have the right to use is 4,000 USD, interest rate is 5%/year.

Dr Righ of use asset: 65,025

Dr Lease liability: 61.025

Cr Cash: 4,000

* After initial recognition:

Lease liability	Righ of use asset
The loan is based on an implicit interest rate. Accordingly, the balance of the debt payable *interest = interest payable (to be entered in principal). The periodic payment will have to pay both principal and interest, this is the cause of reducing the ending principal of payables (similar to the calculation of VAS 06).	Right to use property, as PPE. Accordingly, after initial recognition, the original price model and the revaluation price model can be used. If the building is financed for an operating lease (similar to inventory, fair value must be used)

Rent payment can choose to pay at the beginning of the period and at the end of the period.

- If payment at the beginning of the period:

Beginning balance	Payment	Difference	Interest payable (SOPL)	Ending balance (SOFP)
a	(b)	a-b	(a-b)*r	(a-b)+(a-b)*r

The difference in profit change when switching from an operating lease under the old standard to a finance lease under the new standard. The new standard increases the Righ of use asset and Lease liability, makes the depreciation expense and interest expense different from year to year, and introduces deferred tax, resulting in different year-to-year profits. Old ink does not change profit over the years (because costs are the same over the years)

Lease liability	Righ of use asset
- Dr Interest expense Cr Lease liability - Dr Lease liability Cr Cash	Dr. Depreciation cost Cr Accumulated depreciation

- If payment at the end of the period:

Beginning balance	Interest payable (SOPL)	Payment	Ending balance (SOFP)
a	a*r	(b)	a+a*r-b

For example, renting a property for 3 years, in order to avoid not having to record liabilities and to avoid taxes, many businesses re-sign once every 6 months, many risks belong to the lessor.

* Sale and leaseback transactions (for leased properties):

When selling, has ownership transferred, risks and benefits to the lessee or not?

- If still under the control of the seller (this is a loan contract)

- If selling a part of an asset, assuming the useful life is 10 years, the enterprise will use it for 4 years (recording Right retained) and the remaining 6 years, then lease it back (recognize Right transfer).

Right retained ratio = PV/FV

Right transfer rate = 1- PV/FV

ROU asset = Carry amount *PV/FV

If selling price>FV	If selling price<FV
This is a loan	This is considered as a prepayment to the buyer

Step 1: Determine Total Gain =FV - Carry amount

If this is still in the asset's useful life, it is not recognized in profit. And if this is the stage of asset transfer (when selling and leasing back), then record in profit

Step 2: Gain (related to Right retained) = Total Gain * PV/FV

ROU asset = Carry amount *PV/FV

Step 3: Right transfer = Total Gain (1- PV/FV), interest is recorded in SOPL

Step 4: Settlement

- For example, fixed asset with original cost of 1,000,000, used for 10 years, remaining value is 900,000, sold for 1,300,000, paid 280,000/year (deferred payment), interest rate 10%/year. From here, determine PV to be 1,200,000

Step 1: Determine Total Gain = 1.300.000 - 900.000 = 400,000

Step 2: Gain (related to Right retained) = 400,000 * 1,200,000/1,300,000 = 369.231

ROU asset = 900,000*1.200.000/1,300,000 = 830.769

Step 3: Right transfer = 400,000-369,231 = 30,769, interest is recorded in SOPL

Step 4: Settlement

Dr cash: 1,300,000

Dr Righ of use asset: 830,769

Cr PPE: 900,000

Cr Lease liability: 1,200,000

Cr P/L: 30.769

3. Assess the impact of IFRS 16 on changes in financial statements

IFRS 16 will have certain impacts on the elements on the financial statements, specifically:

- IFRS 16 affects the Balance Sheet and related balance sheet metrics such as Total Debt/Equity. In addition, IFRS 16 will also affect the income

statement because enterprises need to recognize interest expenses on lease obligations (rent payment obligations) and enterprises also need to calculate depreciation for lease obligations. with the "right to use the property" (that is, the property that reflects the right to use the leased asset). Therefore, for a lease previously classified as an operating lease, the total cost at the beginning of the lease will be higher than in IAS 17.

- Another consequence of the changes under IFRS 16 is that interest income and taxes (EBIT) and earnings before taxes, interest and amortization (EBITDA) will be higher for companies with operating leases. Enterprises should consider the impact of IFRS 16 on EBIT and EBITDA because the impact is said to be very large, especially for enterprises with loan contracts that specifically require these two indicators. Previous studies have shown that industries that use the most operating leases will be hit the most - like retail, with average debt increasing by 98% and EBITDA by 41%. For lessees, the new IFRS16 will have an impact on the following areas: Future operating leases will be recognized on the "Statement of Financial Statements" increasing financial leverage. The new liabilities are largely offset by the "right to use" the new assets and the overall effect is reflected in the "Statement of Financial Statements". Lease costs will be replaced by depreciation and interest expenses in the income statement. This can directly affect accrual expenses and change the structure of expenses in the income statement with increased profit before tax, interest and EBITDA.

A change to note, On May 28, 2020, the IASB issued an amendment to IFRS 16 on leases to help simplify the recognition of accounting information for grants from donors. lease to the lessee due to the impact of the Covid 19 pandemic. The amendment takes effect from June 1, 2020. Prior to the amendment, IFRS 16 required the lessee to determine if the lessor's assistance to the lessee was part of the original lease. If the lessor's assistance to the lessee is not part of the original lease, the lessee applies the provisions of paragraphs 45-46 of the standard. The amount of the lease liability is re-determined by discounting the adjusted lease payment using the adjusted discount rate; and make a corresponding decrease in the right to use the leased asset. After the amendment, IFRS 16 allows (but is not required) lessees to determine whether or not Covid-19 pandemic support is an amendment

to the lease. Instead, the lessee may account for these allowances as if they were not an amendment to the lease. To apply this recognition model, the lessee must simultaneously satisfy all three of the following conditions: The adjusted rental amount is close to, or less than, the pre-adjusted value; The rental discounts (if any) only last until the end of June 30, 2021, other terms of the contract remain unchanged. Therefore, the lessee does not apply paragraphs 39-43 of the standard on revaluation of lease liabilities. The lessee applies the provisions of paragraph 38b to a variable lease payment, whereby any changes in rent arising are recognized in the statement of profit and loss at the time such changes are incurred.

For example, on January 1, 2019, Company A leases a place to Company B to open a restaurant with the rent of 400 million VND/month (equivalent to 4.8 billion VND/year), the lease term is 5 year, the rent is payable at the end of the year. At the inception of the lease, B's marginal interest rate on borrowing is 7% per annum. In 2020, due to the impact of the Covid-19 epidemic as well as the Government's issuance of a social isolation order, Company B's revenue decreased significantly. To support customers in this situation, Company A decided to waive the rent of Company B's premises in the second quarter of 2020 (equivalent to 1.2 billion VND). The table of determining the value of lease liabilities and the value of the right to use assets before adjusting for the 2020 allowance of Company B is as follows:

Years	Lease liability			ROU asset		
	Beginning	Interest	Ending	Beginning	Depreciation	Ending
2019	19.680.947.693	1.377.666.338	16.258.614.031	19.680.947.693	3.936.189.539	15.744.758.154
2020	16.258.614.031	1.138.102.982	12.596.717.013	15.744.758.154	3.936.189.539	11.808.568.616
2021	12.596.717.013	881.770.191	8.678.487.204	11.808.568.616	3.936.189.539	7.872.379.077
2022	8.678.487.204	607.494.104	4.485.981.308	7.872.379.077	3.936.189.539	3.936.189.539
2023	4.485.981.308	314.018.692	-	3.936.189.539	3.936.189.539	-

Company B's entries for the year 2020 are as follows:

Dr "Financial expenses": 1,138,102,982 VND

Dr "Liabilities to lease assets":
3,661,897,018 VND

Cr "Cash": 3,600,000,000 VND

Cr "Other income": 1,200,000,000 VND.

- Changes to the statement of cash flows: Previously, under IAS 17, lease payments related to leases that were classified as operating leases were presented in their entirety in the cash flows from

operating activities section. business. However, under IFRS 16, only a portion of a lease payment that reflects the interest expense of a lease liability can be presented in the cash flow from operating activities (depending on the accounting policies of the entity concerned). to interest payments). Cash payments for the principal portion of the lease liability are classified under cash flows from financing activities. Short-term lease payments, low-value property leases, and variable rental payments that are not included in the amount of the lease liability are still presented in the cash flow from operating activities.

4. Conclusion

For many industries and businesses, IFRS 16 is a big change. In addition, internal and external stakeholders, enterprises must clearly understand the impact of the Lease Standard before this standard takes effect on January 1, 2019. In case enterprises have a large number of lease agreements, the application of this new Standard will be complicated and take a long time. Vietnamese enterprises need to learn and be ready to effectively apply IFRS 16 to accounting for leases at their units in the future. Therefore, it is necessary to orient the application of IFRS 16 in the coming time. Accordingly, Vietnamese enterprises need to pay attention to a number of issues:

- Timely assessment of structural and stakeholder issues affected by changes in financial metrics and metrics to help businesses take the initiative if necessary and negotiate with stakeholders.

- Enterprises need to check whether IFRS 16 will affect their current and future financial structure to avoid disadvantages and difficulties in negotiations with lenders.

- Start categorizing existing leases and identifying gaps in rental data. Where enterprises have a large volume of leases can be one of the tests to prepare for the use of IFRS 16.

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FACTOR AFFECTING ONLINE SHOPPING BEHAVIOR OF GEN Z

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Abstract: Nowadays, with the explosion of e-commerce, consumer shopping trends are also changing and developing day by day. In fact, consumers are gradually turning to modern shopping methods instead of conventional shopping methods. Catching up with this new consumer trend, a series of e-commerce businesses have been born with various business forms. In reality, the rapid development of e-commerce businesses has created fierce competition in this market. In Vietnam, there are about 15 million people of Gen Z, accounting for about 25% of the national workforce and influencing family decisions on virtual shopping activities. Therefore, the article focuses on research on the theoretical basis of factors affecting the online shopping behavior of Gen Z youth to serve as a premise for the following research to analyze the situation and propose solutions to support businesses in terms of exploiting Gen Z customers with high efficiency.

• Keywords: online shopping, Gen Z.

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Tóm tắt: Với sự bùng nổ của TMĐT, các xu hướng mua sắm tiêu dùng cũng đang thay đổi và phát triển từng ngày. Người tiêu dùng dần chuyển sang phương thức mua sắm hiện đại thay vì các hình thức mua sắm truyền thống. Bắt kịp với xu hướng tiêu dùng mới này, hàng loạt các doanh nghiệp thương mại điện tử đã ra đời với nhiều hình thức kinh doanh đa dạng. Sự phát triển nhanh chóng của các doanh nghiệp thương mại điện tử đã tạo ra một bức tranh cạnh tranh khốc liệt trên thị trường này. Tại Việt Nam, có khoảng 15 triệu người thuộc thế hệ Gen Z, chiếm khoảng 25% lực lượng lao động cả nước và ảnh hưởng đến các quyết định của gia đình về các hoạt động mua sắm trực tuyến. Vì vậy, bài viết tập trung nghiên cứu về cơ sở lý thuyết nhân tố ảnh hưởng đến hành vi mua sắm trực tuyến của giới trẻ Gen Z nhằm làm tiền đề cho nghiên cứu sau phân tích thực trạng và đề xuất giải pháp hỗ trợ doanh nghiệp khai thác đối tượng khách hàng Gen Z đạt hiệu quả cao.

• Từ khóa: mua sắm trực tuyến, thế hệ Z.

1. Research overview

Mehrdad Salehi (2012) conducted a study on consumer buying behavior towards online stores in Malaysia. This study was conducted

to determine the factors influencing consumers toward online shopping in Malaysia. The study focused on nine independent variables: website appearance, quick access, information security, sitemap, value relevance, promotion, attractiveness, trustworthiness, and uniqueness. Moreover, the research applied a 5-point Likert scale to measure factors that affect online shopping intention. The study's findings identified five factors (appearance, fast loading, security, sitemaps, and validity) that influence consumers towards online shopping and security is the most contributing factor to online shopping. Research by Mohammad et al. (2012) developed a model of customer behavior and motivation towards online shopping in Bangladesh. The author has several specific purposes as follows: To define the framework of online shopping intention; To find support for online shopping in Bangladesh; To identify some policy implications for developing online shopping behavior in Bangladesh.

In addition, Nguyen Thi Bao Chau & Le Nguyen Xuan Dao (2014) mentioned that trust factors, product variety, price, website responsiveness, comfort, convenience, risk factors in terms of time risks, product risks, and financial risks affect consumers' online shopping decisions. The research shows that the comfort factor has the most important role in online shopping decisions. The two groups of subjects who have never shopped and have had

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online shopping experiences have discrepancies in online shopping behavior. Furthermore, the two groups are strongly influenced by the diversity factor in choosing goods, and this is the factor that distinguishes the two groups of online shoppers.

Research on the relationship between online service quality, trust, and shopping intention of online shopping of Vu Thi Tuong Vi (2017) analyzed the impact of factors related to online service quality on customer's trust. The author measured the influence of trust on intention in online shopping. Additionally, the study synthesized some factors: aesthetic interface, technology, and financial safety concerning online service quality affecting online shopping trust and intention. The research also explored differences between customer groups in terms of trust relationship with online shopping intention.

Based on an overview of domestic and foreign studies, it can be seen that online shopping behavior research has been interested and implemented for a long time due to the awareness of the vital role and position of the e-commerce market. What's more? The relationship between the intention of the consumer's behavior in the purchasing decision and the factors affecting the intention-buying behavior is also focused on to be exploited by many researchers.

2. Research methodology

The article uses qualitative methods to detect the research problems and explain some basic theories about factors affecting the online shopping behavior of Gen Z. The research method combines research methods of comparative and analytical methods. The comparative method is used when the author studies the perspectives on the factors affecting the online shopping behavior of Gen Z. The analytical, synthetic method is utilized to analyze the general theoretical issues as regards factors affecting the online shopping behavior of Gen Z young generation. The study also analyzes the influence of factors affecting the online shopping behavior of the Gen Z young generation. Specifically:

(1) Theoretical research includes defining problems, research objectives, reviewing theoretical bases, making theoretical models, and building preliminary questionnaires.

(2) Design a scale of factors affecting the online shopping behavior of Gen Z.

(3) Build a formal questionnaire based on a

5-point Likert scale from "Strongly disagree" to "Strongly agree" for the next research.

3. Theoretical framework

Generation Z is often abbreviated as Gen Z and translated into Vietnamese as generation Z. This generation is only those born between 1996 and 2012 which can move a few years depending on opinions. In addition, Gen Z people are often referred to by other names such as Post-Millennials, Digital Natives, Gen Tech, Gen Wii, Internet Generation, Generation Z, Neo-Digital Natives, iGen, Homeland Generation, Net Gen, Plurals, Zoomers, etc. Currently, there are many concepts of "generation Z", the most common is the one used for people born from the mid-90s to the 2000s and born with the development of modern science and technology in the 21st century, typically the Internet and mobile phones. In this research, the author uses the United Nations Population Fund (UNFPA, 2021) criteria to identify people of generation Z, whereby Gen Z includes people born in the period 1997-2013. Apparently, generation Z is the most optimistic and least cautious demographic, maybe due to their upbringing. Gen Z grew up during a time of financial prosperity for the country. However, they have more demands than their previous generation. Nearly half of respondents favor brands that can reflect Vietnamese values and culture and have classic or timeless brand associations. In addition, they are interested in various social issues including social responsibility, environmental issues, and gender equality. To be able to appeal to this group, it requires enterprises to create an authentic brand with unique values that customers can receive.

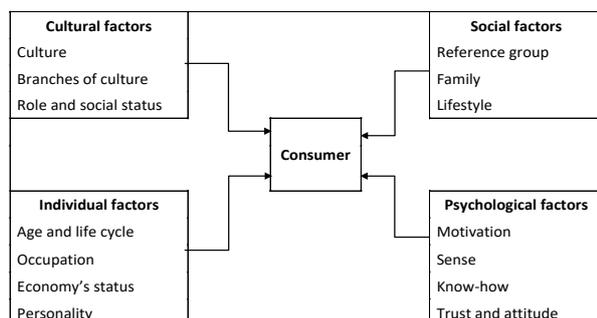
According to research by (Li & Zang, 2002), online shopping behavior (also known as virtual buying behavior, Internet shopping behavior) is the process of purchasing products and services on the Internet. Thus, online shopping is understood as the activity of purchasing products or services on the Internet. In the study of Monsuweetal. (2004), online shopping is the behavior of consumers in shopping via Internet stores or websites and utilizes online shopping transactions. In fact, online shopping is gradually becoming more popular in daily life because of the convenience it brings to consumers. One main merit of online shopping is its flexibility of shopping. In reality, online stores do not have holidays, closures, or any other problems. Consumers can be proactive about when to shop at anytime and from anywhere. Actually, they can surf

the web and place orders, regardless of the opening hours of shopping malls.

Gen Z was born again at the peak of technological innovation, where all information is instantly accessible and social networks are increasingly prevalent. In Vietnam, the number of Gen Z young people using the Tik Tok platform has exploded in popularity in recent years. In addition, Generation Z in Vietnam uses many social networking platforms such as Facebook, Instagram, etc. Grasping this characteristic of Gen Z, all activities of information, communication, exchange of goods, and so on, in recent years have followed the trend of digitization.

On the subject of the factors affecting the online shopping behavior of Gen Z, it is necessary to start with the study of the factors affecting the buying behavior of consumers. According to Philip Kotler (2002), there are four groups of factors affecting consumer buying behavior: cultural factors, social factors, personal factors, and psychological factors.

Table 1. Factors affecting consumer buying behavior



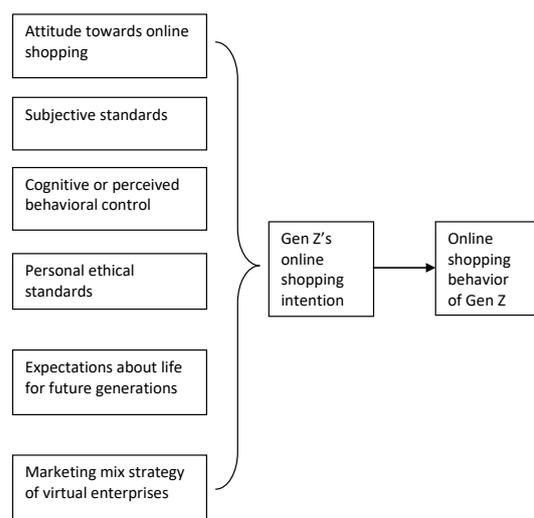
Source: Philip Kotler, 2002

However, to attain online shopping behavior, it is necessary to look at the stage before the buying behavior which is the intention to purchase. In the model of the theory of intended behavior (TPP) of Ajzen (1991), in addition to two factors affecting an individual's behavioral intention, attitude and subjective norm, there is one more factor that is perceived behavioral control. Actually, perceived behavioral control refers to an individual's ability to perform a certain behavior, reflecting the ease or difficulty of performing the behavior and whether the performance of that behavior is controlled, restricted, or not. According to the Theory of Intentional Behavior, perceived behavioral control and intention can be used to directly influence behavior. It is considered both a factor affecting intention and a factor affecting actual consumer behavior.

4. Research results

Based on research on the theory of buying behavior of Philip Kotler (2002) combined with the theory of intended behavior (TPP) model of Ajzen (1991), the author of this study simultaneously identifies the characteristics and shopping trends of Gen Z, thereby identifies groups of factors affecting Gen Z's online shopping behavior

Figure 1: Proposed research model



Source: Author synthesized

From the existing studies and the characteristics of Gen Z in the online shopping process in Vietnam, the author has built a suitable scale for research conditions in Gen Z of Vietnam in general. Since then, the author selected and developed theories to identify indicators of factors affecting the online shopping behavior of Gen Z in Vietnam. The proposed observed variables in the model are summarized by the author in Table 2.

Table 2. Scale of factors affecting online shopping behavior of Gen Z

Scale	Encode	Measurement criteria	Source
Attitudes towards online shopping of Gen Z	TD1	Online shopping creates convenience in my life.	Ajzen (1991); Philip Kotler (2002)
	TD2	Online shopping is a modern consumption trend of young people.	
	TD3	I am satisfied with online shopping.	
	TD4	I support the development of online shopping in Vietnam and accept it.	

Scale	Encode	Measurement criteria	Source
Subjective standards	TC1	No one feels that I am eccentric or inconvenient when I satisfy my personal needs via online shopping.	Ajzen (1991); Philip Kotler (2002)
	TC2	My online shopping decisions are mainly influenced by my family members.	
	TC3	Most of the people around me (friends, idols, teachers, etc) encourage me to shop virtually.	
	TC4	The mass media (newspapers, TV, social networks, etc) have encouraged me to have orientation for online shopping.	
	TC5	The government currently encourages to shop online and I see that many people choose this consumption style.	
Perceived behavioral control	KS1	The current inconveniences (losing time, contacting many people, etc) have a negative impact on health/ personal life and beloved ones, so I want to shop online.	Ajzen (1991); Philip Kotler (2002)
	KS2	Online shopping today is an investment/ opportunity for Gen Z and the next generation to live in a healthier environment.	
	KS3	I do take time to find out information and choose products when I shop online.	
	KS4	Now I no longer hesitate to shop online even though sometimes there are risks (product quality is not good, design, etc).	
	KS5	I am not too shy or have trouble in finding information, choosing products, pursuing an online shopping lifestyle.	
Personally ethical standards	DD1	I feel backward if I do not carry out online shopping online in my daily life.	Ajzen (1991); Philip Kotler (2002)
	DD2	I believe I have a social responsibility when I shop online.	
	DD3	Increasing online shopping is one of my orientations in later life.	
Expectation of a good life for future generation	KV1	I wish that gen Z could live in an environment with better quality of life.	Ajzen (1991); Philip Kotler (2002)
	KV2	I want future generation to have modern shopping behavior, save time and be able to access to new technology.	
	KV3	I wish future generation have the opportunity to access many good products when shopping directly to satisfy their personal needs.	

Scale	Encode	Measurement criteria	Source
Marketing mix strategy of virtual enterprises	MAR1	There are many products and services serving essential needs born to serve the online shopping behavior of Gen Z (safety- convenience- sustainability).	Ajzen (1991) Author proposed
	MAR2	I find product prices much cheaper when shopping online.	
	MAR3	I can easily find and buy products at ecommerce sites.	
	MAR4	Communication programs of the State and of enterprises help me understand and easily apply when shopping online.	
	MAR5	Reviews, Influencer Marketing's opinions are my references and influence me when shopping online.	
Intention to determine online shopping behavior of Gen Z	HV1	I will do online shopping more frequently.	Ajzen (1991); Author proposed
	HV2	I am willing to learn and share my knowledge about online shopping for everyone.	
	HV3	I will strive to do online shopping in my life since I am young now	
	HV4	I will encourage relatives and friends to form online shopping habits.	

Source: Author synthesized

5. Conclusion

This study has explored the factors affecting the online shopping behavior of Gen Z based on inheritance and selection from research works, theories of research model formation and the scale measuring the influence of factors on the online shopping behavior of Gen Z. The article depicted several scales that have been successfully applied by previous studies but were excluded in this study and utilized qualitative and quantitative analysis. In fact, some scales are not suitable for Vietnamese Gen Z culture. Some of them are very interesting but only suitable for a developed economy. Concerning the environment and consumption patterns that are not yet developed in Vietnam today, the samples mismatch. Concerning the hypothesis, this research has successfully developed a model deployed from the theory of intended consumption.

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SMART UNIVERSITY SYSTEM: SOME PROPOSALS FOR UNIVERSITIES IN VIETNAM

PhD. Nguyen Hong Chinh* - MSc. Hoang Thi Hong Hanh* - Nguyen Manh Hung**

Abstract: *In today's society, universities play four main roles, including: fostering knowledge, providing high-quality human resources, being a centre of innovation hubs, and a focal point for international integration. The acceleration of digital technologies has brought about tremendous changes to the economy, society and all aspects of human life. Smart universities have recently become not only a topic of concern among researchers, scholars and policy makers but also a trend of higher education's development in developed countries. Better understanding of smart university and the contextual position of each university in the smart university model to build and implement the most appropriate roadmap will help Vietnamese universities better fulfill their responsibilities. To this end, this paper presents the up-to-date outcomes and findings of conceptual modeling of smart university, then proposing policy implications accordingly.*

• Keywords: smart universities, industry 4.0, digital development.

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Tóm tắt: Trong xã hội ngày nay, trường đại học đóng bốn vai trò chính, bao gồm: bồi dưỡng kiến thức, cung cấp nguồn nhân lực chất lượng cao, trung tâm sáng tạo đổi mới và hội nhập quốc tế. Sự phát triển nhanh chóng của công nghệ kỹ thuật số đã mang lại những thay đổi to lớn cho nền kinh tế, xã hội và tất cả các khía cạnh của cuộc sống con người. Đại học thông minh gần đây không chỉ trở thành chủ đề quan tâm của các nhà nghiên cứu, học giả và các nhà hoạch định chính sách mà còn là xu hướng phát triển của giáo dục đại học ở các nước phát triển. Hiểu rõ hơn về trường đại học thông minh và bối cảnh của từng trường đại học trong mô hình đại học thông minh để xây dựng và triển khai lộ trình phù hợp nhất sẽ giúp các trường đại học Việt Nam hoàn thành tốt hơn trách nhiệm của mình. Cuối cùng, bài báo này trình bày các kết quả đạt được và những tồn tại về mô hình trường đại học thông minh, từ đó đề xuất các hàm ý chính sách cho phù hợp.

• Từ khóa: đại học thông minh, cách mạng công nghiệp 4.0, phát triển số.

1. Introduction

Each era of centralized technological development, also known as the industrial revolution, entails a leap

in the development of mankind. Human beings have experienced three Industrial Revolutions over the past 300 years and now we are in the beginning of the Forth Revolution (4.0) which has far-reaching effects on all areas, including education. The industrial revolution 4.0 characterized by increasingly explosion of information technology is changing the face of education not only in developed countries but also in developing countries like Vietnam. Today's universities need to ensure four main roles: (i) a source of highly qualified human resources, (ii) a source of knowledge creation, (iii) a driving force of innovation at both local and national level, and (iv) an important international integration hub. By doing it, they can act as a driving force for social innovation, contributing to strengthening the knowledge economy.

To adapt with profound changes ignited by the 4th industrial revolution, higher education requires fundamental shifts in pedagogical mindset as well as the way of imparting knowledge. In recent years, the exponential development of information and communication technology (ICT) has signified a revolution in education, especially higher education world wide. The application of information technology in education and training has been becoming increasingly popular as evidenced by the fact that many prestigious universities such as: Harvard, MIT (USA), Cambridge (UK), etc have

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applied this model in their training programs. Popular models of online training which have been applied include: Blended Learning, Social and Collaborative Learning, Gamification, Micro- Learning, etc.

Moreover, in education 4.0, fundamental skills are required for all learners, thus learning methods must be flexible in terms of time and space, and tailored to each individual learning condition. Cloud computing applications, wireless devices such as tablets and mobile devices help learners access different sources of knowledge and skills for work, and promote social interaction. Learners need to be equipped with the necessary skills to be able to easily switch careers and adapt to the challenges and demands of contemporary markets. We cannot accurately predict both the speed and application of technology in future life and in education. However, that the educational development must be asymptotically close to technological development is undoubtedly inevitable. Several notable educational technology trends can be pointed out as follows:

(i) **Digitizing classrooms:** Instead of considering information technology as a separate, independent tool, the digitalization trend will emerge and cover all aspects of the modern classroom;

(ii) **Smart devices:** It is the embedding of available programming into physical materials through smart devices which are connecting things via the Internet and having a strong and profound impact on the learning mechanism and information collection process;

(iii) **Virtual Digital Multimedia Room:** A place that connects cyber information between online and offline, providing a tool to present potential information in the future;

(iv) **Mobile Learning:** Mobile Learning is the studying process which undergoes through mobile applications. Mobile is a common digital device with high user adoption. Its applications are normally associated with specific products. Hence, mobile learning has become more and more popular lately.

Building a smart university system is absolutely necessary in the current context. Studies show several advantages of Smart Universities: (i) Using the data collected by others to create various useful applications. Specifically, students learn in an open environment, thus having easy access to a diverse and global source of knowledge; (ii) Create an environment conducive to increasing socialization among all members of the university community; (iii) With the development of

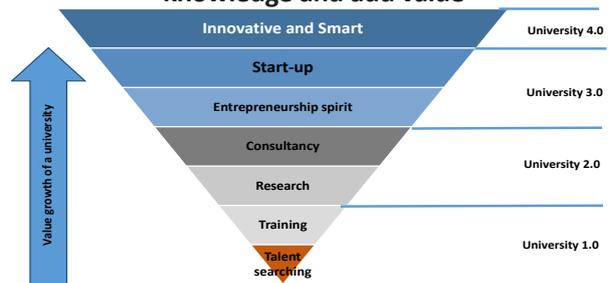
IoT, fostering connections not only between students, students and teachers but also universities together, thus creating a comprehensive learning ecosystem; (iv) Easily evaluate the effectiveness of technology and equipment. This is important in improving the quality of student learning at university.

2. Smart university system

There have been many studies focused on developing the concept of smart university, smart education and related concepts. One of the most notable studies about this subject is the research by VL Uskov and colleagues at Bradley University (USA). By carrying out a systematic literature review and creative analysis of related research, C. Heinemann & VL Uskov (2018) propose a definition of smart university: “a place where knowledge is shared seamlessly, and a system with flexible learning styles and modes of learning content delivery, ubiquitous access to educational material from any device.”

Another study by NA Serdyukova and his partners provide a research output on smart university system as an efficient and innovative system based on innovation. Based on the formal algebraic approach, the authors define a smart university as a set of n components (n -tuple) selected from the main sets of students, training programs, faculty, and training sets. Pedagogical style, class set, software set, hardware set, technology set, and resource set are described by general system theory equality.

Figure 1.1: Classification of university systems according to their level and ability to capitalize on knowledge and add value



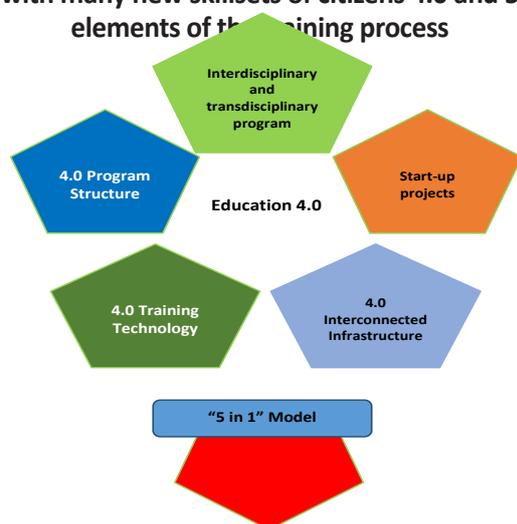
Source: Proceedings of the Conference (2019), “Seminar on building a smart university and smart hospital model”, Hanoi Medical University

The most modern smart university model today is a university model that applies real, virtual and IoT systems. Cyber-physical systems (CPS) are typical features of the industrial 4.0 environment, which are the basis for designing and building smart factory models. Although students complete their training programs within the university, they graduate and create value outside of the campus. It can be said

that university 4.0 is an innovation-oriented smart university in which innovation and entrepreneurship serve as the philosophy, goals and approaches are to create added value; while “smartness” acts as the foundation, method and implementation conditions are based on 4.0 technological advancements. Such a 4.0 university model is not only for adaptation, but also let universities compete and lead the industrial revolution 4.0.

In order to adapt to the Fourth Industrial Revolution and new missions of contemporary education, innovation and start-up-oriented trainings should be implemented according to the “5 in 1” model (5 components towards 1 goal), in which 1 outcome standard with many new skillsets of citizens 4.0. The five components include: (1) New training programs of high interdisciplinary and transdisciplinary nature and new training programs associated with 4.0 technology; (2) Traditional training programs switch to an innovative program structure; (3) New technology 4.0; (4) Start-up projects and business linkages; (5) New startup education ecosystem connects all stakeholders: lecturers, learners, lecture halls, laboratories and users.

Figure 1.2: “5 in 1” model with 1 outcome standard with many new skillsets of citizens 4.0 and 5 elements of the training process



Source: Nguyen Huu Duc (2020), “Research on university models to respond to Industry 4.0”, Vietnam National University, Hanoi.

In Vietnam, a number of higher education institutions have implemented the idea of building a smart university model. Moreover, the application of Information Technology to teaching foreign languages and cultures with smart education orientation has been implemented at Hanoi Law University, Hanoi University of Industry, Hanoi National University,

etc. Due to being developed on the basis of modern technologies which converges diverse subjects from computer science, educational sciences and other fields, smart university incurs highly complex content not only in research, model development but also in implementation methods of the very first level in its development ladder. Universities including: Vietnam Agricultural Academy, Hanoi University of Science and Technology, Academy of Posts and Telecommunications and Academy of Politics Region I have been approved by the Ministry of Science and Technology to support research projects to build a digital transformation model for smart schools, and will initially test the latest technologies in education with the expectation that it can create a qualified workforce for the industrial revolution 4.0.

3. Smart university software systems

To build a smart university, it is necessary to understand the needed software system, including:

First, Pre-class content development system:

The pre-class content development system supports teachers to prepare the necessary content for the lesson and should have the following important features:

- (1) Screen capture: Allows trainers to record dynamic and fixed images from the computer screen;
- (2) Recording: Allows instructors to record audio, narration for video, VoIP calls, music and audio output from other applications on the computer;
- (3) Capture from the webcam: Allow the computer “webcam” to record the instructor while he/she teaches in class or makes videos;
- (4) Save files online: Allows recording video and audio files to save directly to the computer;
- (5) Recording schedule: Allows the instructor to set a time and date for the application to automatically record what’s happening on the computer screen (may display video from other connected resources);
- (6) Capture from a mobile device: Allows the trainer to connect a smartphone or other mobile device to a desktop computer and record what is displayed on the smartphone screen;
- (7) Zoom in/out and rotate: The ability to magnify a part of the computer screen to keep the audience focused on specific segments of the displayed learning content and get a better understanding of it, while the pan effect allows instructors to move smoothly from one part of the computer screen to another;

(8) Additional media: Allows instructors to import video, audio and image files from the computer into the learning content files;

(9) Add Title: Allows instructors to add title information to the beginning and/or end of the video file;

(10) Add Captions: Add comments and text comments to various recordings (note that captions are useful to enhance a video with useful information or comments that are not usually covered in the audio of the video);

(11) Split/join video and audio files: Allows user to trim/remove unwanted (or low quality) video and audio clips from existing audio/video files and insert, if necessary, other parts to the final recording files

Second, Recording System During Class: The Class Activity Recording System should have the following important features:

(1) Screen Recording: The ability to capture content on the computer screen such as videos, PPT slides, animations, computer simulations...;

(2) Live TV: Ability to webcast (over the Internet) online classes for remote students;

(3) Multi-Camera Video: Video must be recorded and presented by multiple video cameras;

(4) Mobile Streaming: Allows instructors to stream live video from various mobile devices;

(5) Capture classroom activities: Every activity (teaching, discussion, presentation,...) in a class should be captured and archived (possibly after class replay) to provide providing (current) classroom effects to remote students;

(6) Customization: Instructors should have the opportunity to create and edit customized instructional content.

(7) Automatic sensing and recording: The ability to sense different activities in a smart classroom and start recording automatically.

(8) Video recording management: The ability to record videos from different angles should be done and properly maintained;

(9) Scheduling and automation: Basic and general purpose activities in the smart classroom should be scheduled and automated (e.g. identification and registration of all local and remote students, turn on automatically and set up all necessary devices in the smart classroom to match the profile of a particular instructor or specific class,...)

Third, Post-Class Support System: The Post Class Activity Support System should have the following important features:

(1) Online video television: Allows teachers to replay live TV active routes during class hours have been recorded to students;

(2) Placing quizzes and polls: Allows teachers to quickly put quizzes and polls and assign it to the whole class or to a single student in the class;

(3) Mobile Streaming: Allows teachers to play videos directly from mobile devices, then students can access those files with their mobile devices;

(4) Upload media: Allows teachers to upload rich multimedia content;

(5) Interactive distance learning: Facilitate teacher interaction (in the sense of active two-way communication) or audio/video conference;

(6) Secure assignment/submission: Allows teachers to post lessons on the course website allowing students to securely submit assignments;

(7) Automatic publishing: Allows teachers to easily publish the course composition and learning content (recorded lectures, assignments, grades, notes, announcements, ...) on the course website learn;

(8) Online video stream management: Allows teachers to manage camera and recording settings, view complex camera feeds, and set alerts for tampering and motion detection;

(9) Planning and Automating: Regular learning activities can be scheduled and/or automated.

Fourth, Web-based Audio and Video Conferencing System: An audio and video conference system should have the following important features:

(1) Recording: Allows users to record audio and/or video conferences and review as needed;

(2) Conversation/text: Allows students and faculty to converse or send instant text messages;

(3) Voice calling: Allows users to make voice calls to other users online;

(4) Video conferencing: Allows users to make video calls to other online users using the Internet;

(5) Web Casting: Allows video meetings to be broadcast live on various media and/or record them for later editing;

(6) Advocacy: Facilitate synchronized voice conversations across various technical platforms such as making or receiving voice or video calls over Wi-Fi with iOS devices and Android;

(7) Screen Sharing: Facilitates faculty and students to share their computer screens with each other and other students (typically, this feature is controlled by the instructor);

(8) File sharing: Allows faculty to share different files with students;

(9) Group chat: Facilitating the creation of various groups of students, one group calls several selected students at the same time and share information between them;

(10) Drawing Tools: Enables users to annotate or highlight certain passages on computer screens and videos to highlight certain things on the screen or video.

Fifth, Collaborative learning system: Collaborative learning system should ensure the following important features:

(1) Flexible web-based meeting: Allows students, learners, lecturers at different locations work as a virtual team, having online meetings/discussions and share content or documents in real time over the Internet;

(2) Shared whiteboard space: Allows in-class and remote students, faculty to work together in real time over the Internet, communicate and share content (using use a dedicated, smart table or board);

(3) Proactive online discussion and communication: Students can openly discuss and share their thoughts with student groups, project team members or everyone in the class;

(4) File upload and sharing: Instructors, students, learners and tutors can upload various files related to groups activity and learning content, and share them online with a group or every classmate;

(5) Problem-based learning: Teamwork on student projects improves student engagement and retention of learning content;

(6) Phone calls and group communications: The student leader or moderator or tutor can call a group virtual meeting and talk to a specific group of students/learners (can be a group member). course project) online using a variety of available web-based communication tools;

(7) Chat, group chat: Students can talk with other students or a group of students and share ideas, thoughts, documents;

(8) Annotate readings: Allows students to add notes to better understand and communicate thoughts/

ideas/questions directly to other members of the student's team or project;

(9) Scheduling: Student group leader or moderator or tutor can schedule different events, meetings, sessions with different groups of students;

(10) Customize the content and materials to be discussed: The student leader or moderator or tutor should be able to customize the content for a group or individual counseling session as needed for each group of students or the individual student;

(11) Collaborative Session Recording: All audio/video collaboration sessions must be recorded for possible playback (if needed later by student group members);

(12) Screen capture: Student leader or moderator or tutor should be able to capture any activity, process, graphic on the main (shared) computer screen or smartboard, record, archiving and replaying them (if needed), which is especially important for meetings or collaborative team-based sessions where students bring, write ideas to the table, virtual desks based on web;

(13) Asking assignments, questions and giving assessment and grading reports: Student group leaders or moderators or tutors should create assignments for different groups of students and provide them with that evaluation results, scoring (such as grading report);

(14) Notice: The student needs to be notified of an upcoming or scheduled event or activity;

(15) Reports: Automatically generate different types of reports on student group activity or individual student learning outcomes (attendance to virtual group meetings, time spent in virtual discussions, time test or quiz completion time, number of virtual team meetings attended per week, etc).

Sixth, Context-aware systems: Context-aware systems should have the following important features:

(1) Adaptation: Perceiving learning contexts and adapting learning activities and teaching styles and that the content is appropriate for (a) the current learning environment, (b) the current student's academic background, (c) the current needs and/or profile of the faculty, (d) the needs of current student, etc;

(2) Dashboard monitoring: Overview, monitor different scenarios and provide metrics. Specifically, monitoring student learning quality, student activities, student performance,...

(3) Face search and recognition: Detecting faces of different people in diverse environmental types school environment: school environment (in class, in laboratory), building environment, campus environment, etc.

(4) Motion detection and recognition: Sensing or detecting movement of people and different objects in classrooms, laboratories, buildings, campus...;

(5) Gesture recognition: Identify the gestures of lecturers, teaching assistants, tutors or students in the learning environment;

(6) Smart supervision: Monitor activities or behavior patterns or any changes in the school environment using different types of smart devices; This feature is important for safety and security in classrooms, labs, buildings, and campus school;

(7) Recording: Automatically record high-quality audio and video from various activities (situations) in classrooms, labs, buildings, and different areas of the campus;

(8) Predictive analytics: Process data obtained from multiple sensors and make predictions about steps, connected actions from learning activities, or location on campus, or safety, security confidentiality,...

(9) Rapid video processing and analysis: Quickly and efficiently process large data from recorded video (for example, video surveillance cameras) and process the resulting data;

(10) Ubiquitous access: Instructors (or safety staff) can easily access to real-time or virtually video, audio, or recorded information from anywhere, anytime.

4. Some recommendations for Academy of Finance

Building a smart university is a development roadmap in the direction of strongly applying information technology to training and scientific research of universities in Vietnam today, which is in line with the trend of university education 4.0. In order for schools to become smart universities, it is necessary to pay attention to the following issues:

First, completing and comprehensively managing the university's activities on the e-university system. Promoting the application of information technology in management, teaching and learning, implementing digital transformation in education training towards building a smart university model. In addition, diversify training programs associated with businesses, innovate training methods associated with open and market-oriented educational models to meet

the requirements of the industrial revolution 4.0.

Second, thoroughly apply information and communication technology in all activities; build an integrated information system, electronic portal, Vietnamese - English bilingual website system according to international standards, inter-connected infrastructure, etc. Furthermore, information technology is widely applied in training activities, scientific research and student activities such as: Smart Online Classroom (DLS); online learning system (LMS); online training management system (Dashboard), etc.

Third, effectively attract a team of educational experts to develop lectures on distance learning modules to quickly apply them to the university's training model. Particularly, it is necessary to build a group of experts selected from the teaching staff of the course in terms of both experience and technology mastery to give regular advice on strategies and policies for developing simulation models in distant training. Additionally, the university need to restructure the curriculum, content and teaching methods; using simulation model as the main tool to implement distance learning. Also, it is necessary to build a data warehouse and an electronic library large enough to ensure greater interaction with learners than traditional education does.

Four, besides investing in advanced technological equipment, it is necessary to have a Business Administration Simulation Center, Accounting Simulation Center etc which use business management softwares in the university infrastructure. Thereby, it would help students to apply specialised knowledge while learning how to tackle problems, developing a handful of essential soft skills, especially the application of information technology in problem solving.

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DETERMINANTS OF MICROCREDIT USING BY POOR HOUSEHOLDS IN THANH HOA PROVINCE

PhD. Le Huy Chinh*

Abstract: *The purpose of this paper is to examine determinants of microcredit using by poor households in Thanh Hoa province. Using Binary logistic regression, the result indicates that there are 6 factors that determine the decision to use microcredit of poor households in the studied area. The most influential factor is Perceived usefulness of microcredit, followed by Belief of poor households in microfinance institutions and theirs microcredit services, Social influences, Employee of microcredit institutions, The Relationship between the microcredit providers and poor households, and lastly the Scale of the organizations providing microcredit service. Based on the analysis results, some recommendations are proposed.*

• Keywords: poor households, decision, microcredit, Thanh Hoa province.

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Tóm tắt: Bài viết nghiên cứu các yếu tố tác động tới quyết định sử dụng tín dụng vi mô của hộ nghèo trên địa bàn tỉnh Thanh Hóa. Sử dụng mô hình hồi quy Binary logistic, kết quả cho thấy, có 6 yếu tố ảnh hưởng đến quyết định sử dụng tín dụng vi mô của hộ nghèo trên địa bàn nghiên cứu. Yếu tố ảnh hưởng nhất là Nhận thức sự hữu ích của tín dụng vi mô, tiếp theo lần lượt là Sự tin tưởng của hộ nghèo vào tổ chức và dịch vụ tín dụng vi mô, Ảnh hưởng xã hội, Đội ngũ nhân viên của tổ chức cung cấp tài chính vi mô, Mối quan hệ giữa tổ chức cung cấp tín dụng vi mô với khách hàng và cuối cùng là Quy mô của tổ chức cung cấp tín dụng vi mô. Dựa vào kết quả phân tích, một số khuyến nghị cũng được đưa ra.

• Từ khóa: hộ nghèo, quyết định, tín dụng vi mô, tỉnh Thanh Hóa.

1. Introduction

Recently, there have been several studies reporting determinants of microcredit using, especially researches conducted in poor countries or poor areas of Asian and African continent.

For Asia area, study by Kausar (2013) found that interest rate, relationship between lenders and borrowers, government policies, gender differences, credit worthiness of borrower,

transaction cost, limited access to credit, economic condition and the availability of information impact on demand for microcredit in Pakistan. For China, using logistic regression, study by Li, Gan, and Hu (2011) pointed out that the rural households' accessibility to microcredit is affected by factors such as educational level, household size, income, interest rates, loan processing time. Another study by Ming Qinet al (2019) about factors affecting use of microcredit for Chinese economy showed that guarantee group membership, village head loan guarantee, and messenger use as well as popular factors such as social capital, production cost, non-labor family members, income have significant impact on demand for microcredit among farmers among farmers in Northern China.

Considering studies for the Africa area, Umoh (2006) expressed that the access to microcredit for Nigeria's Economy is depended on collateral security, loan processing procedures, interest rates and income. Another study for Nigeria by Anyiro and Oriaku (2011) indicated factors influence access to microcredit are age, education, farm income, extension contact and distance between home and loan source. For the case Sudan, Ibrahim and Bauer (2013) showed that savings, value of assets, and incomes are significant variables for determining the credit constrained

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conditions. For the agricultural area in Ghana, the study by Anang et al (2015) revealed that gender, household income, farm capital, improved technology adoption, contact with extension, the location of the farm, and the awareness of lending institutions are factors that influence access to microcredit.

For Vietnam, Barslund and Tarp (2008) investigated rural credit in four different provinces of Vietnam as: Long An in the Mekong Delta, the South of Vietnam, Quang Nam in the Central Highlands, PhuTho in the North Western; and Ha Tay in Red River Delta, now part of Hanoi, the capital of Vietnam. The findings showed regional differences in the demand for microcredit, but in general age of the household head, the number of adults, education, and the distance between home and loan source affect access to microcredit. Another study by Phan Dinh Khoi (2013) about factors affecting access to formal credit and informal credit of the farm households in the Mekong Delta. The findings expressed factors affecting the decision to use credit services are Level of income, Administrative works, and being a member of loan groups. For An Giang, the province located in the Mekong Delta, a study by Tran Ai Ket and Huynh TrungThoi(2013) examined the factors affecting farmers' access to formal credit. The analysis result indicated that household income, household head's status, loan purpose, and asset value affect to decision to use formal credit. Moreover, a study about factors affecting the accessibility of formal credit in KienGiang province by Truong Dong Loc and Tran Ba Duy (2010) shown that the accessibility is positively correlated with the age of household head, what level of educational qualifications they hold, the number of household members, and total assets of the household. Conversely, household land size and household income have a negative influence on credit accessibility.

Regarding the North, a study by Nguyen Quoc Oanh and Pham Thi My Dung (2010) pointed out that household characteristics, including age, social standing, loan procedures affect farmer households' access to formal credit in the suburbs of Hanoi. Furthermore, Nguyen Phuong Le and Nguyen Mau Dung (2011) shown that household

characteristics such as education and gender of the household head, economic status of household, loan procedure, lending interest rate, loan tenor, loan amount and employee enthusiasm of credit institutions affect household' accessibility to formal credit in suburb of Hanoi.

Thanh Hoa is one of provinces with the highest number of poor households in Vietnam and microfinance service providers in the province also play an important role in poverty reduction in recent years. References to the previous research shown that they have focused on investigating factors affecting farmers' accessibility to credit from banking institutions, factors influencing access to microcredit by poor households seem not to attract the attention of researchers in this research area, and to the best of our knowledge, there has not been any research on the factors affecting the decision to use microcredit of poor households in ThanhHoa province. The paper,therefore, attempts to investigate this issue.

The rest of the paper is organized as follows. Section 2 presents the method. Section 3 expresses results. The following section discusses and concludes the paper.

2. Methodology

2.1. Research model

The logistic model is formulated to identify factors affecting poor households' decision to use microcredit service. The model takes the form:

$$Y = \beta_0 + \sum_{i=1}^n \beta_i X_i + u \quad (1)$$

Where: Y = dependent variable, Y has values either 0 or 1.

X_i = independent variables

= parameter

u = residuals

According toCox and Snell (1989), Binary Logistic Equation (1) can be rewritten as follows:

$$\ln \left[\frac{P(Y=1)}{P(Y=0)} \right] = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n \quad (2)$$

Where $P(Y=1) = P_0$ is the probability of poor households' decision to use microcredit

and $P(Y=0) = (1-P_0)$ is the probability of poor households' decision not to use this service.

To identify factors that contribute the microcredit' accessibility of poor households in ThanhHoa province, based on previous studies such as the Theory of Planned Behavior(Ajzen, 1991),a study byRicci and Caratelli (2014),and a research byFrangos et al (2012) we proposed model is expressed as follows:

$$\ln \left[\frac{P(Y = 1)}{P(Y = 0)} \right] = \beta_0 + \beta_1 PU + \beta_2 EU + \beta_3 BL + \beta_4 SO + \beta_5 CR + \beta_6 EP + \beta_7 SI \quad (3)$$

Where: PU denotes Perceived Usefulness; EU represents Easy to Use (microcredit Service); BL stands forBelief (the trust of poor households in microfinance institution and its microcredit service); SO refers toScale of organizations offering microcredit to poor borrowers; CR implies theRelationship between the microcredit providers and poor households; EP indicates Employee of microcredit institutions and SI: Social influence

The main hypotheses to be tested in this study:

Hypothesis H1: The factor "PU" has a positive impact on "the decision to use microcredit services of poor households".

Hypothesis H2: The factor "EU"has a positive impact on "the decision to use microcredit services of poor households".

Hypothesis H3: The factor "BL" has a positive impact on "the decision to use microcredit services of poor households".

Hypothesis H4: The factor "SO" has a positive impact on "the decision to use microcredit services of poor households".

Hypothesis H5: The factor "CR" has a positive impact on "the decision to use microcredit services of poor households".

Hypothesis H6: The factor "EP" has a positive impact on "the decision to use microcredit services of poor households".

Hypothesis H7: The factor "SI" has a positive impact on "the decision to use microcredit services of poor households".

2.2. Data

The data used in this study is extracted from the database in the study by Le Huy Chinh (2019) that assesses the impact of microfinance services on income and consumption of poor households in Thanh Hoa Province. The data includes 466 valid survey questionnaires made by the convenient sampling method. Data analysis is performed by the SPSS 20 software.

3. Results

The results of Omnibus Tests

Table 1 shows Omnibus Tests of Model Coefficients.

Table 1. Omnibus Tests of Model Coefficients

	Chi-square	df	Sig.
	316.821	7	.000
Block	316.821	7	.000
Model	316.821	7	.000

Source: analyzed by author

It can be seen that Chi-square = 316.821 and Sig. = 0.000 < 0.05. It implies that the overall fit (variance explained) of the model.

The results of Testing the Fit of the Logistic Regression

Table 2 displays the results ofTesting the Fit of the Logistic Regression with Log likelihood, Cox&Snell square and Nagelkerke square with its values, respectively.

Table 2: Testing the Fit of the Logistic Regression

-2 Log likelihood	Cox & Snell R ²	NagelkerkeR ²
77.491	.493	.864

Source: analyzed by author

The value of Log likelihood expresses that the estimated model fits the data. Cox & Snell R2 = 0.493 and Nagelkerde R2 = 0.864 indicate 86.4% the proportion of variance in the outcome that the model successfully explains.

Regression analysis testing

Table 3 expresses the regression coefficients.

Table 3: Regression analysis results

	Variable	B	S.E	Wald	Df	Sig.	Exp(β)
Step 1	Constant	-20.224	3.288	37.828	1	.000	.000
	PU	2.585	.652	15.718	1	.000	13.265
	EU	.695	.449	2.399	1	.121	2.004
	BL	1.982	.630	9.902	1	.002	6.875
	SO	1.138	.526	4.673	1	.031	3.120
	CR	1.530	.526	8.461	1	.004	4.620
	EP	1.581	.589	7.190	1	.007	4.858
	SI	1.853	.780	5.643	1	.018	6.377

Source: analyzed by author

The Wald tests imply that with the exception of the EU variable, the coefficients have the expected signs and are statistically significant. The Binary logistic regression equation is

$$\frac{P(Y = 1)}{P(Y = 0)} = -20,224 + 2,585PU + 0,695BL + 1,138SO + 1,530CR + 1,581EP + 1,853SI \quad (4)$$

The model on the whole is well specified and various points can be made.

Firstly, when the awareness of the usefulness of microcredit services increases, the poor are more ready to use this service. The coefficient of PU variable is 2.585, it indicates PU increases by 1 unit, while other factors are constant, the log of proportion of probability between deciding to use microcredit services and not to use increases by 2.585 units. In other words, the probability of deciding to use microcredit services increases by 13.265 times ($e^{2.585}$) compared to the probability of not using the services of poor households.

Secondly, when the poor have trust in microfinance services and the organizations, they are more willing to use microcredit services. The estimated results can be interpreted that probability of deciding to use microcredit services increases by 6.875 times ($e^{1.928}$) compared to the probability of not using the services of poor households.

Thirdly, the scale of the organizations that provide microcredit services increases, poor households' desire to use these services become greater. The analysis of estimated results suggests that probability of deciding

to use microcredit services increases by 3.120 times ($e^{1.138}$) compared with the probability of not using these services of poor households in ThanhHoa province.

Fourthly, the relationship between the microcredit institutions and poor households has a positive impact on decision making for using microcredit services. The estimated result points out that the probability of poor households' decision using this kind of services increases 4.620 times ($e^{1.530}$) compared to the probability of not using microcredit services.

Fifthly, the estimated results shows that the better staff microfinance organizations have, the more ready poor households are to decide to use microcredit services. In the same way, analysis of the results obtained indicates the probability of poor households decide to use microcredit services increases to 4.858 times ($e^{1.581}$) compared to the probability of not using the services.

Finally, constructive social factors have a positive influence on poor households' decision to use microcredit services. Estimated result implies that the probability of poor households' decisions using microcredit services increases 6.377 times ($e^{1.853}$) compared to the probability of not using the services.

The impact levels of influential factors affecting the decision to use microcredit service is shown in Table 4

Table 4: The impact levels of influential factors

Hypotheses	Independent variable	β	e ^β	The impact levels	Conclusion
H1	PU	2.585	13.265	1	Accepted
H3	BL	1.982	6.875	2	Accepted
H4	SO	1.138	3.120	6	Accepted
H5	CR	1.530	4.620	5	Accepted
H6	EP	1.581	4.858	4	Accepted
H7	SI	1.853	6.377	3	Accepted

Source: analyzed by author

It can be seen that all hypotheses are accepted and the impact levels of influential

factors affecting the decision to use microcredit services, in order of decreasing, are Perceived usefulness, Belief in microfinance institutions and its services, Social factors, Employees of organizations, the Relationship between customers and the organization, and the Scale of the organizations providing microcredit.

4. Discussion and conclusion

The purpose of this paper is to examine the factor affecting poor households' decision on using microcredit services in Thanh Hoa province. The result indicates that there are 6 factors affecting the decision to use microcredit services of poor households in Thanh Hoa province, namely: Perceived Usefulness of microcredit services; Belief of poor households in microfinance institutions and their microcredit services; Social influences; The relationship between the microcredit providers and the customers; Staff and Scale of the organizations providing microcredit service.

Based on the analysis results, some recommendations are proposed for organizations providing microcredit service in Thanh Hoa province, as follows: i) Microfinance institutions should strengthen and convey quickly information about the microcredit services can bring benefits to poor households. Because Perceived usefulness of microcredit services has the strongest influence on poor households' decision of using microcredit services; ii) Microfinance institutions should improve service quality, image brand and reputation to generate more trust in order to attract more poor households; iii) Developing effective customer service policies; iv) Improving the quality of human resources in microfinance institutions; v) Expanding transaction networks of microfinance institutions throughout Thanh Hoa Province.

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FACTORS AFFECTING ORGANIZATIONAL CITIZENSHIP BEHAVIOR OF OFFICIALS AND EMPLOYEES OF TAN SON NHAT INTERNATIONAL AIRPORT

PhD. Vu Truc Phuc*

Abstract: The research objective of the topic is to identify factors affecting organizational citizenship behavior (OCB) of officials and employees at Tan Son Nhat International Airport. The author proposes recommendations to improve OCB at the company from the expected results. Through a survey of 206 employees, six identified factors explained 68,81% influence on OCB: Service leadership (SL), Justice in the organization (JO); Job satisfaction (JS); Employee work engagement (WE); Organizational support (OS); Psychological capital (PC). In which, service leadership (SL) is the strongest factor affecting the OCB of officers and employees at Tan Son Nhat (TSN) International Airport.

• Keywords: organizational citizen behavior, the cohesion, service leadership.

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Tóm tắt: Mục tiêu nghiên cứu của đề tài là xác định các yếu tố ảnh hưởng đến hành vi công dân tổ chức (OCB) của cán bộ, nhân viên tại Cảng Hàng không quốc tế Tân Sơn Nhất. Từ đó tác giả đề xuất các hàm ý quản trị nhằm nâng cao hành vi công dân tổ chức của nhân viên tại đơn vị. Thông qua khảo sát 206 người, với 6 yếu tố được xác định đã giải thích được 68,81% ảnh hưởng đến OCB đó là: Lãnh đạo phụng sự (SL), Sự công bằng trong tổ chức (DJ); Sự hài lòng công việc (JS); Sự gắn kết công việc nhân viên (WE); Sự hỗ trợ của tổ chức (OP); Vốn tâm lý (PC). Trong đó, yếu tố Lãnh đạo phụng sự (SL) là yếu tố ảnh hưởng mạnh nhất đến OCB của cán bộ, nhân viên tại Cảng Hàng không quốc tế Tân Sơn Nhất.

• Từ khóa: hành vi công dân tổ chức, sự gắn kết, lãnh đạo phụng sự.

Investment business: Exploiting airport infrastructure and equipment; Providing aviation security assurance services; Providing maintenance services for aircraft and aviation equipment; Providing ground-based commercial engineering services; Services at passenger and cargo terminals; Import and export, purchase and sale of aviation supplies, spare parts and equipment; Agency services for airlines, transport companies, tourism, manufacturers, supply of materials and equipment specialized in aviation; Passenger and cargo transportation business services; Hotels, motels.

The total number of employees at TSN International Airport is 2305 people from professional departments, centers and professional teams in the fields of airport operation of TSN. Officials and employees of TSN International Airport are a resource associated with human capital, representing the image of the business and the face of the country. Therefore, each member of TSN International Airport must always transform himself and must show behaviors that represent the face of the business and the country, that is the organizational citizenship behavior (OCB)

1. Introduction

Tan Son Nhat (TSN) International Airport is the unit that manages investment capital and directs production and business at TSN International Airport, one of the most important international airports in Vietnam.

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to create the image of peace and development of Vietnam in the world.

The goal of the study is to determine the factors affecting the organizational citizenship behavior of TSN International Airport employees and propose governance implications to help the managers, officers, and employees of the TSN International Airport improve organizational citizenship behavior.

2. Theoretical foundations and research models

The concept of Organizational Citizenship Behavior first appeared in Barnard's studies (1938 quoted according to Novicevic et al., 2005). By 1988, Organ clarified the nature of OCB as "individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organization".

TSN international airport is in the service industry, so in this study, the author uses the definition of Bettencourt and colleagues (Bettencourt et al., 2001) combined with Organ (1997): individuals voluntarily beyond the roles and duties described in the job, for the purpose not to receive organizational rewards but to contribute to the improvement of organizational performance. Besides, it also acts towards providing quality service. Accordingly, employees are the representatives of the organization to the outside, officers and employees can both enhance and reduce the image of the organization as the basis for their research.

According to Nur and Organ (2006), OCB has 7 types of behaviors as follows:

Altruism: Also known as helping behavior, is appropriate discretionary behavior directed towards helping and motivating other employees in performing their duties effectively and helping others to solve their problems.

Generalized Compliance: this is also the act of Conscience, focusing on the important issues to limit mistakes. Always strive to perform well beyond the required role behavior to enhance the effectiveness of both an individual and a team. This behavior is aimed at emphasizing the voluntary consciousness of employees. That is, employees

voluntarily comply with the regulations, rules, and labor agreements in the organization without being forced or affected by any.

Sportsmanship: To improve the overall performance, sometimes the leader needs to make some changes in the structure and operation of the organization. This change often gives rise to objections and grievances from employees, but for those who have a sense of noble behavior, even though they are not satisfied with the leader's changes, they still show a positive attitude, put aside their dissatisfaction and try to get the job done for the benefit of the whole organization. They will not protest unfairness or express dissatisfaction with the organization or leader.

Civic Virtue: Civic ethics is the willingness to participate responsibly and constructively based on the organization's policies and management processes. According to Graham and Lee (1986), it is the voluntary dedication of individual employees in an organization, a common behavior in people with a sense of responsibility, always working according to the motto and policies of the organization.

Courtesy: This is the behavior to avoid causing difficulties for colleagues at work. It is a preventive behavior that prevents the occurrence of personal conflicts that must be resolved. Reduce or avoid causing difficulties for colleagues' work, inform colleagues in advance about the content issues of the upcoming work, thereby helping them to be better prepared before starting work.

Loyalty: This is a behavior that shows trust and pride in the organization with people outside the organization. According to George and Brief (1992), loyalty behavior is demonstrated by trying to protect the image of the organization from the criticisms of others and always talking about the highlights of the organization in talks, and talking to people.

Self-Development: is an automatic behavior that takes steps to develop skills and knowledge related to work such as employees actively learning to improve their professional qualifications and skills, thereby meeting job requirements better.

Individual Initiative: Any behavior that goes beyond what is necessary to prevent or solve a problem.

In this study, the author focuses on OCB behavior including Altruism; Courtesy; Loyalty; Sportsmanship; Civil Virtue; Conscientiousness; Individual Initiative.

Previous studies

Summary of factors and related previous studies, Table 1

Table 1: Summary of related studies

No.	Author	Factors affecting OCB
1	Blau (1968)	There are 3 factors that affect OCB Psychological capital; Jobsatisfaction; Jobengagement; Received organizational support
2	Podsakoff et al (2000)	There are 4 factors that affect OCB Individual characteristic; Organizational characteristic; Leadership behaviors; Task characteristic
3	Asgari et al (2008)	There are 3 factors that affect OCB Leader - Member Exchange Perceived organizational support; Interactional justice
4	Yates (2014)	There are 3 factors that affect OCB Ethical leadership; Jobsatisfaction; Organizational commitment
5	Ngô Thị Thanh Huyền (2019)	There are 4 factors that affect OCB Psychological capital; Workengagement; Job Satisfaction; Perceived organizational support

Source: Author's compilation, 2022

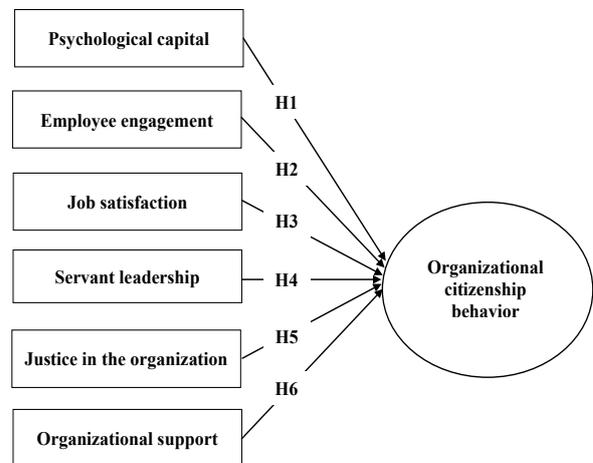
The author inherits previous studies and conducts discussions to adjust the scales.

4. Proposed research model and hypothesis

4.1. Research models

Based on the theory of organizational citizenship behavior of officers and employees and the results of previous studies, the author has inherited and developed and adjusted the scale to suit the practices of Vietnamese enterprises. From there, the author proposes a model to study the influencing factors of the OCB of the officers and employees of the TSN International Airport as follows (Figure 1):

Hình 1: Research model proposed by the author



Source: Author's compilation and recommendation, 2022

4.2. Research hypothesis

4.2.1. Relationship between Psychological Capital and OCB

According to Pradhan et al. (2016): Psychological capital is a state of positive psychological development of an individual, described by confidence to take on and perform challenging tasks, always making necessary efforts to achieve success; having an optimistic attitude about success in the present and the future; Persevering towards the goal, overcoming obstacles and, when necessary, being able to turn the goal around to achieve success. The author then hypothesized the following:

Hypothesis H1: Psychological capital has a positive effect (+) on the organizational citizenship behavior of officers and employees.

4.2.2. The relationship between employee job engagement and OCB

Schaufeli et al (2002), "Job engagement is a positive mental state related to employee job completion characterized by enthusiasm, dedication, and passion". Job engagement is an important aspect for organizations because it brings many positive results, which have a significant effect on both employees and the organization (Saks, 2006). Employees with job engagement are physically and emotionally attached to their organization, leading to

better job performance and more positive work outcomes (Schaufeli & Bakker, 2004). Employee engagement includes: Enthusiasm, Dedication, and Positive Emotions.

Hypothesis H2: Job engagement has a positive (+) positive impact on organizational citizenship behavior.

4.2.3. The relationship between job satisfaction and OCB

The relationship between job satisfaction and organizational citizenship behavior has been tested by many researchers in experimental studies. Bateman and Organ (1983) found a significant relationship between job satisfaction and organizational citizenship behavior.

Hypothesis H3: Job satisfaction has a positive (+) positive impact on organizational citizenship behavior.

4.2.4. Relationship between Servant Leadership and OCB

Servant leadership is a leadership style that puts the interests of others before their own. Servant leaders identify the needs and concerns of many stakeholders (J. W. Graham, 1991). Podsakoff (2000) researched and gave the results that when upper-level leaders support lower-level employees will be more conscious of implementing organizational citizenship.

Hypothesis H4: Servant leadership has a positive (+) positive impact on organizational citizenship behavior.

4.2.5. The relationship between fairness in the organization and OCB behavior

Equity theory was developed by Adams (1965 quoted by Folger, 1986). Applying the theory of Social Exchange to the organization, Adams (1965 quoted by Folger, 1986) proposed the theory of equity to explain the behavior and motivation of employees in the organization. Employees evaluate fairness by comparing what they give and receive with what others pay and receive (Adams, 1965 quoted by Folger, 1986).

Hypothesis H5: Equity in the organization has a positive (+) positive impact on organizational citizenship behavior.

4.2.6. Relationship between Organizational Support and OCB behavior

In the concept of the relationship between organizational support (OS) and organizational citizenship behavior (OCB), the author uses social exchange theory and its related indicators in the impact of social exchange. According to Eisenberger et al. (1990), one reason why organizational support is related to organizational citizenship behavior is that it affects employees' perception when they are appreciated by their organization. A common perception that an organization supports its employees will lead to reciprocal contributions from its employees in acts of extra responsibility.

Hypothesis H6: Organizational support has a positive (+) positive impact on organizational citizenship behavior.

3. Research methods

Quantitative research method through regression analysis, multiple regression model is a linear regression model for unadjusted β coefficient of the form:

$$OCB = \beta_1 \times SL + \beta_2 \times JO + \beta_3 \times WE + \beta_4 \times OS + \beta_5 \times PC + \beta_6 \times JS + u$$

3.1. Building a scale

Inheriting the results of previous studies and discussing them with experts, the author proposes 6 factors influencing OCB as described in Table 2.

Table 2: Description of the scale

No.	Observed variables	Symbol	Source of the scale
Psychological capital (PC)			
	I confidently set work goals for myself	PC1	Pradhan et al (2016)
2	I confidently discuss, contribute ideas and initiatives for the production and business activities of the unit.	PC2	
3	I always hope to solve all the difficult problems at work.	PC3	
4	I usually overcome the stress at work	PC4	
5	I always pursue to the end when I have determined the work goal to be achieved.	PC5	
Employee engagement (WE)			

No.	Observed variables	Symbol	Source of the scale
1	This job is all my passion; I really love it.	WE1	Kang (2014) and discussion results
2	I always get the job done well even when it's not going well.	WE2	
3	I am willing to do challenging work.	WE3	
4	I can work continuously without taking a break when needed.	WE4	
5	Overall, work is an important part of my life	WE5	
Job satisfaction (JS)			
1	I am satisfied with the nature of my work.	JS1	Podsakoff et al (2000)
2	I am satisfied with my relationships with colleagues.	JS2	
3	I am satisfied with the level of income I get from this job.	JS3	
4	I feel the salary being received is fair for everyone.	JS4	
5	I am satisfied with the advancement opportunities that I have.	JS5	
Servant leadership (SL)			
1	A leader is someone who puts my best interests before his own.	SL1	Fabrigar et al (1999) and discussion results
2	A leader is someone who has the talent to help me manage my emotions.	SL2	
3	Leaders are good at anticipating the consequences of decisions.	SL3	
4	A leader is someone who gives me compelling reasons to work.	SL4	
5	A leader is someone who takes steps to prepare an organization to make a positive difference in the future.	SL5	
Justice in the organization (JO)			
1	The income I get is worth the results I have produced.	JO1	Colquitt (2001) and discussion results
2	My personal performance is measured in accordance with the labor agreement and ethical standards.	JO2	
3	Leaders never comment, make rude comments about me.	JO3	
4	Leaders communicate information about work to me in a very timely manner.	JO4	

No.	Observed variables	Symbol	Source of the scale
Organizational support (OS)			
1	The organization really cares about my life and health.	OS1	Rhoades & Eisenberger (2002)
2	The organization is very interested in my completion of the assigned tasks.	OS2	
3	The organization values my contributions to the organization.	OS3	
4	The organization is very attentive to my goals and views.	OS4	
5	The organization creates conditions for me to study to improve my qualifications.	OS5	
Organizational citizenship behavior (OCB)			
1	I arrange a scientific work schedule to have time to help colleagues.	OCB1	Bateman & Organ (1983) and discussion results
2	I volunteer to participate in community activities to enhance the image of the organization.	OCP2	
3	I always follow the rules and regulations of the organization even without supervision.	OCP3	

Source: Compiled by the author, 2022

3.2. Research sample

According to Hair et al (1998), in order to choose the sample size suitable for the EFA exploratory multivariate analysis, the minimum sample size is $N > 5 * X$ (X is the total number of observed seas). Within the scope of the topic of analyzing 6 independent variables and 1 dependent variable with 32 observed variables, the minimum number of survey samples applicable to the above formula will be: $N = (32 * 5) = 160$ samples (survey). To ensure satisfactory data collection rate, the author issued 210 votes, and the number of valid votes collected was 206. Survey subjects are officers and employees working at TSN International Airport.

4. Research results and discussion

4.1. Scale test results

The results of the test of the scale (Table 3) show that the scales all meet the testing requirements and are included in the analysis in the next step.

**Table 3: Cronbach's Alpha factor
Organizational support**

Observed variables	Corrected Item-Total Correlation	Cronbach's Alpha ItemDeleted
Psychologicalcapital (PC). Cronbach's Alpha 0.924		
PC1; PC2; PC3; PC4; PC5	0.707; 0.834; 0.777; 0.813; 0.887	0.926; 0.900; 0.911 0.904; 0.889
Organizational support (OS). Cronbach's Alpha 0.888		
OS1; OS2; OS3; OS4; OS5	0.753; 0.694; 0.740 0.623; 0.841	0.859; 0.872; 0.862 0.886; 0.836
Job satisfaction (JS). Cronbach/Alpha 0.906		
JS1; JS2; JS3 JS4; JS5	0.768; 0.586; 0.763 0.871; 0.849	0.885; 0.913; 0.886 0.862; 0.867
Employee engagement (WE). Cronbach's Alpha 0.928		
WE1; WE2; WE3 WE4; WE5	0.711; 0.871; 0.820 0.783; 0.871	0.930; 0.900; 0.909 0.917; 0.899
Servant leadership(SL). Cronbach's Alpha: 0.913		
SL1; SL2; SL3; SL4; SL5	0.704; 0.814; 0.803; 0.833; 0.748	0.909; 0.886; 0.888 0.882; 0.901
Justice in the organization (JO). Cronbach's Alpha: 0.876		
JO1; JO2; JO3; JO4	0.774; 0.710; 0.666; 0.787	0.824; 0.851; 0.866; 0.820
Organizational citizenship behavior (OCB). Cronbach/Alpha: 0.900		
OCB1; OCB2; OCB3	0.773; 0.826; 0.808	0.883; 0.837; 0.852

Source: Author's analysis results, 2022

4.2. Exploratory factor analysis

4.2.1. Factor analysis explores independent variables affecting organizational citizenship behavior

From the results of the reliability analysis of the scale above, the EFA analysis was conducted with 29 observed variables of 6 independent variables affecting the organizational citizenship behavior of TSN International Airport.

The results of the analysis (Table 4) achieved the coefficient of KMO = 0.887 > 0.5 and the Barlett's test value was 5205,326 with the significance level Sig = 0.000 < 0.05, showing that the observed variables belonging to the same factor have a close relation to each other. At the same time, the total variance extracted is 75.439% > 50%, showing that these 6 factors explain 75.439% of the variation of the data set, and the Eigenvalue = 1.232 > 1 is eligible for factor analysis.

Table 4: EFA analysis results of independent variables

Observed variables	Factor					
	1	2	3	4	5	6
JS4	0.837					
JS5	0.780					
JS1	0.775					
JS3	0.654					
JS2	0.651					
OS5		0.883				
OS2		0.815				
OS1		0.810				
OS3		0.772				
OS4		0.652				
SL3			0.794			
SL2			0.761			
SL4			0.760			
SL5			0.693			
SL1			0.586			
WE5				0.835		
WE3				0.815		
WE4				0.805		
WE2				0.796		
WE1				0.682		
JO4					0.853	
JO1					0.844	
JO2					0.764	
JO3					0.698	
PC5						0.894
PC2						0.851
PC4						0.811
PC3						0.794
PC1						0.686
KMO Sig.						0.887 0.000
Eigenvalue						1.232
Cumulative						75,439

Source: Author's data analysis, 2022

4.2.2. Exploratory factor analysis for the variable organizational citizenship behavior (OCB)

The factors affecting organizational citizenship behavior of employees have 3 variables, the results of the analysis are shown in Table 5.

Bảng 5: The results of EFA analysis of the dependent variable

Observed variables	Factor loading
OCB1; OCB2; OCB3	0.828; 0.810; 0.832
KMO	0.747
Sig.	0.000
Eigenvalue	2.502
Cumulative	8,401

Source: Analysis of survey data, 2022

In the data fit test, the KMO coefficient = 0.747 > 0.5 and Barlett's test has a value of 384,282 with the significance level Sig. = 0.000 < 0.05, showing that the observed variables belonging to the same factor are closely correlated. At the same time, the total variance extracted is 83.40% > 50%, showing that this newly extracted factor explains 83.40% of the variation of the data set, and the Eigenvalue = 2.502 > 1 is eligible for factor analysis.

4.3. Multiple Linear Regression

4.3.1. Evaluate and test the fit of the model

Table 6: Anova

Model	Sum of Squares	df	Mean Squares	F	Sig.	
1	Regression	103.310	6	17.218	78.344	0.000 ^b
	Residual	43.736	199	0.220		
	Total	147.046	205			

Source: Analysis of survey data, 2022

Looking at Table 6, we see that the value of F = 78.344 at the Sig level of significance is very small (sig = 0.000 < 0.05). Therefore, we can conclude that the independent variables are related to the dependent variable and explain the change of the dependent variable.

Table 7: The results of multiple regression analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig. Tolerance	Collinearity Statistics	
	B	Std. Error	Beta			VIF	
F_OS	0.125	0.040	0.142	3.113	0.002	0.717	1.394
F_PC	0.150	0.053	0.138	2.800	0.006	0.618	1.619
F_JS	0.147	0.058	0.143	2.548	0.012	0.475	2.105
F_WE	0.122	0.057	0.115	2.157	0.032	0.527	1.896
F_SL	0.373	0.059	0.370	6.269	0.000	0.429	2.332
F_JO	0.195	0.050	0.182	3.879	0.000	0.679	1.474

Source: Analysis of survey data, 2022

From Table 7, we see that all t values have significance (sig.) < 0.05. Therefore, the null hypothesis H0 is rejected. So, there is a linear relationship between each independent variable with the dependent variable, that is, the given independent variables can all explain the variation of the dependent variable.

+ Multicollinearity test:

From Table 7, the variance exaggeration coefficients of the variables are all less than 3, so multicollinearity does not occur. Thus, the relationship between the independent variables does not affect the interpretation of the multiple linear regression model.

+ Check the fit of the model

From Table 8, the coefficient of determination R² (R Square) is 0.703 and the adjusted R² (Adjusted R Square) is 0.694, which means that the linear regression model has been built properly, the independent variables in the model have been explained get 68% (>50%) of the variation of the dependent variable.

Table 8: Criteria to evaluate the fit of the model

Model	R	Adjusted R	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.828 ^a	0.703	0.694	0.6881	2.072

Source: Analysis of survey data, 2022

+ Check residual assumptions

* Assume there is no correlation between the residuals: This assumption is tested by the Durbin-Watson statistic, 1 < Durbin-Watson < 3 is in the acceptance region. The results show that the Durbin-Watson coefficient is 2.072 (suitable) so there is no correlation between the residuals.

In summary, the above test results show that the regression model is suitable and statistically significant. The regression model with normalized beta coefficient is:

$$\text{Organizational Citizenship Behavior (OCB)} = SL * 0.370 + JO * 0.182 + JS * 0.143 + WE * 0.115 + OS * 0.142 + PC * 0.138$$

5. Conclusions and managerial implications

5.1. Conclusion

The study is a combination of theory and practice to elucidate the causal relationship. The conclusion consists of 6 factors affecting the organizational citizenship behavior of employees of TSN International Airport.

The results of scale testing, exploratory factor analysis, multiple regression, and hypothesis testing of the OLS regression model all show that the model is consistent with the research data. The initial research hypotheses are all consistent.

5.2. Management Implications

Service Leadership: Leaders need to listen, empathize, understand, and set an example to promote organizational citizenship behavior of employees; need the foresight to promote organizational citizenship behavior of workers; need to be persuasive, and build a community to promote organizational citizenship behavior of workers.

Issues of fairness in the organization: It is necessary to implement fairness in income distribution, to implement fairness in the process of evaluation, promotion, and reward; increase the fairness of information exchange and constructive feedback within the organization;

The issue of Job satisfaction: Need to improve the performance evaluation and the nature of the work; have solutions to improve the remuneration regime, strengthen training policies and promotion opportunities;

Issues of Job Engagement: It should be noted that compensation and benefits affect work engagement; Job satisfaction, equal opportunities, and fair treatment affect job engagement;

Issues of Organizational Support: The organization should take into account the goals and perspectives of individuals; care should be taken to promote the spirit of mutual affection and mutual help, especially for long-time employees; need to share and help new employees to the industry; management should set an example of individuals who have a good level of interaction and support for colleagues;

need to listen to and care about subordinates about work and spiritual life.

Psychological Capital Issues: Understanding the psychological capital of each employee; Assessing the psychology of employees will help employees always work positively and share the community attitude.

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IMPROVING THE QUALITY OF INDEPENDENT AUDITORS SUPPORTING THE ADOPTION OF INTERNATIONAL FINANCIAL REPORTING STANDARDS IN VIETNAM

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Abstract: *Currently, the roadmap for the adoption of International Financial Reporting Standards (IFRS) in Vietnam has opened up many opportunities and challenges for many parties such as businesses, investors, analysts, etc. In this context, independent auditors play a huge role in confirming that information on financial statements is well-prepared in accordance with IFRS. However, not only the number of independent auditors who are knowledgeable about IFRS in Vietnam, but also the quality of independent auditors, is limited. Therefore, it is necessary to improve the quality of independent auditors to support the adoption of IFRS in Vietnam. This paper will analyze the current situation of independent auditors in the context of adopting IFRS in Vietnam and propose several suggestions to improve the quality of independent auditors in the current context.*

• Keywords: *quality of independent auditors, independent auditor, application of IFRS.*

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Tóm tắt: Lộ trình áp dụng các Chuẩn mực Báo cáo tài chính quốc tế (IFRS) tại Việt Nam được ban hành đã mở ra nhiều cơ hội và thách thức cho các bên liên quan như doanh nghiệp, nhà đầu tư và thị trường nói chung. Trong quá trình áp dụng các IFRS, các kiểm toán viên độc lập đóng vai trò rất lớn trong việc đảm bảo các thông tin trên các Báo cáo tài chính được lập theo IFRS. Tuy nhiên, số lượng và chất lượng kiểm toán viên độc lập am hiểu IFRS tại Việt Nam còn rất hạn chế. Do đó, việc nâng cao chất lượng nguồn nhân lực kiểm toán độc lập trong bối cảnh IFRS được tiến hành triển khai áp dụng tại Việt Nam là rất cần thiết. Bài viết sẽ phân tích thực trạng nguồn nhân lực kiểm toán viên độc lập dưới góc tiếp cận của việc áp dụng IFRS tại Việt Nam và gợi ý một số giải pháp nhằm nâng cao chất lượng nguồn nhân lực kiểm toán viên độc lập trong bối cảnh hiện nay.

• Từ khóa: *chất lượng kiểm toán viên độc lập, áp dụng IFRS.*

1. The necessity of adopting IFRS in Vietnam

According to the International Accounting Standards Board (2022), 167 jurisdictions have declared to apply IFRS in different forms. Of which, about 119 jurisdictions have requested a full application of IFRS to all or most of the public enterprises, the remaining jurisdictions allow the application of IFRS in different forms. Many countries that have not yet introduced sanctions to apply IFRS are also in the process

of adjusting their national financial reporting standards system to gradually harmonize with IFRS. The magnitude of IFRS adoption by each country depends on their current economic and social context as well as their future strategies.

In Vietnam, on March 16, 2020, the Ministry of Finance issued Decision No. 345/QĐ-BTC approving the scheme for application of International Financial Reporting Standards in Vietnam. This is a signal that Vietnam is actively using the global accounting language in the

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process of integrating with the world economy. The roadmap to apply IFRS is divided into 3 phases, including:

- Phase 1 is a period of IFRS readiness preparation (from 2019 to the end of 2021). In this phase, necessary preparations for the adoption roadmap are made by the Ministry of Finance, in order to support businesses adopting IFRS from 2022 onwards. These preparations include publishing the Vietnamese translation of IFRS standards, training, building guidelines for IFRS implementation, etc.

- Phase 2 is voluntary application (from 2022 to the end of 2025). In this phase, the IFRS will be put into practice in certain companies, such as state-owned enterprises, listed companies and large-scale unlisted public companies. FDI companies may adopt IFRS for their separate financial statements on a voluntary basis, provided that they supply all required information and transparent reports to the authorities about their contributions to the State budget.

- Phase 3 is compulsory application (from 2025 onwards). In this phase, IFRS will be compulsory for consolidated financial statements of all state-owned enterprises, listed companies and large-scale unlisted public companies. Other businesses that operate as parent companies may create IFRS consolidated financial statements on a voluntary basis. All remaining businesses may adopt IFRS for their separate financial statements on a voluntary basis, provided that they supply all required information and transparent reports to the authorities about their contributions to the State budget.

IFRS is considered as a global accounting language, so the application of IFRS will definitely bring many benefits to businesses, investors and the market in general, specifically:

- For businesses, the application of IFRS shall create conditions for qualified businesses to list on international exchanges, or approach preferential loans from international financial

institutions such as the World Bank, the International Monetary Fund, the Asian Development Bank, etc. FDI enterprises that are subsidiaries of transnational corporations will no longer have to pay extra costs to convert financial statements from Vietnamese Accounting Standards (VAS) to IFRS for the purpose of consolidating financial statements with parent companies abroad.

- For investors, the application of IFRS will improve the transparency of financial statements, helping to protect investors' interests because IFRS requires items of financial statements to be recognized and presented according to their nature, rather than the form or the name of the transaction, so it will minimize the impact of the transaction form on the accounting method, thereby increasing the comparability between the financial statements of the Vietnamese enterprise with other enterprises over the world.

- For the market, the application of IFRS will create a legal framework for accounting for a variety of financial instruments, assets and liabilities at fair value. The development of specific regulations on financial instruments and derivatives trading strongly affects both the primary market (the market for issuing financial instruments) and the secondary market (the trading market). For the primary market, banks and financial institutions have a clear legal basis to account for newly issued financial instruments such as futures, forwards, options contracts, and swaps. For the secondary market, a fully promulgated financial reporting standard system will contribute to promoting investment activities in financial derivatives such as securities on a centralized exchange. In particular, the application of IFRS is one of the factors to upgrade Vietnamese stock market.

The current IFRS system includes more than 40 standards, of which several new standards have been issued and applied in recent years, such as IFRS 15 about Revenue from contracts with customers, IFRS 16 about Lease, etc. Meanwhile,

the Vietnamese Accounting Standards (VAS) system only includes 26 standards that have been drafted and promulgated for a long time (the period 2001 - 2005) and are gradually revealing many shortcomings and not being able to keep up to changes in the economy. Some standards in the VAS system are not even updated in time compared to newly issued circulars, such as Circular 200/2014/TT-BTC. Thus, it is easy to see that there is a large gap between IFRS and VAS, therefore, a full application of IFRS in Vietnam requires great efforts and changes from many related units such as: state management agencies, entities applying IFRS, accountants, auditors, accounting and auditing training institutions, etc.

2. Current situation of independent auditors in the context of adopting IFRS in Vietnam

As mentioned above, a successful adoption of IFRS in Vietnam requires the changes of the many of related units such as state management agencies, application entities, accountants, auditors, accounting and auditing training institutions, etc. This paper will focus on analyzing quality of independent auditors in general in the context of adopting IFRS in Vietnam.

Independent auditors are those directly involved in process of auditing financial statements of entities applying IFRS in Vietnam. However, in reality, the number and quality of independent auditors who are qualified to participate in IFRS audits of financial statements are still very limited, specifically:

Firstly, the number of auditors with intensive training in IFRS are mostly from large auditing firms. This comes from the fact that the majority of enterprises that are currently applying IFRS in preparing financial statements are FDI enterprises, at the same time, they often choose to sign assurance audit contracts with the same auditing firms that their parent enterprises are selecting. Therefore, only a

few large international auditing firms have the opportunity to access IFRS financial statements audit contracts. Therefore, only a small number of auditors of these auditing firms have much access to IFRS, while auditors working at small auditing firms rarely have the opportunity to work with IFRS, they could mainly only works with VAS.

Secondly, the number of auditors with intensive training in IFRS in large auditing firms is also very limited. In fact, even in large audit firms, the number of auditors who are truly knowledgeable about IFRS is not much. The explanation for this situation is that many FDI enterprises only require the preparation of reports to be sent to their parent companies under IFRS, not a complete set of financial statements according to IFRS. Less workload means less experience. In addition, at many auditing firms, only a small number of auditors are actually trained and worked extensively with IFRS reports due to job assignments. That is, these auditors will be specifically assigned to clients who have reporting requirements under IFRS. Therefore, although working in the same large auditing company, there is only one department specializing in IFRS, the remaining auditors still only specialize in working with clients who prepare financial statements according to VAS.

Thirdly, the current IFRS reporting process still focuses on the conversion of financial statements, not really the process of recording and preparing financial statements under IFRS. In fact, the preparation of financial statements under IFRS is done based on financial statements prepared under VAS and conversion entries, therefore, the nature of arising economic transactions has not been directly reflected by IFRS but still through VAS. Thus, the reality is that many auditors are very good at preparing financial statement by using conversion entries, but do not really understand all international financial reporting standards.

3. Suggestions to improve the quality of independent auditor in the context of adopting IFRS in Vietnam

In order to fully prepare for the application of IFRS in Vietnam, it is necessary to improve the quality of independent auditors for IFRS. In this paper, several suggestions will be proposed as follows:

Firstly, audit firms should provide extensive training sessions to their auditors on IFRS. Currently, most of the training at IFRS is done during the actual audit process, thus, the auditors learn from each other based on working experience. A formal training process on IFRS has not been widely implemented across enterprises. Some individual auditors are really knowledgeable due to self-improvement and self-study. Therefore, in order for all independent auditors to have a certain understanding of IFRS on a common ground, it is necessary for auditing firms to organize extensive training sessions.

Secondly, auditing firms may consider rotating works between groups of auditors within the company. Instead of having only one group of auditors specializing in working with IFRS financial statements, auditing firms can consider assigning IFRS related works to different groups of auditors. In this way, the number of auditors who are familiar with IFRS will increase, thus, their experience of working with IFRS will also increase. Of course, this assignment of works should not be done during busy season because it will put great pressure on the performance of the auditors.

Thirdly, accounting and auditing training institutions should add more courses on IFRS. Currently, many accounting and auditing training institutions do not have IFRS related subjects, they only focus on training accounting practices under VAS. Therefore, learners do not have many opportunities to access IFRS at school. Regarding this issue, the Academy of Finance has already offered a course on IFRS in the training program. However, the number of

taught standards is limited, and at the same time, some of the taught standards are still familiar standards, such as IAS 16 about Properties, Plants and Equipment.

Fourthly, state management agencies should organize training sessions on IFRS for enterprises in general and auditors in particular. In fact, the Ministry of Finance has organized many seminars related to this issue, however, the coverage is still limited due to the low number of people who know the information of the seminars. Therefore, it is recommended that there should be a widely shared information channel so that many interested individuals and groups can easily access information and participate in these useful seminars.

Above recommendations is for the purpose of improving the quality of independent auditors in the context that IFRS is being implemented and applied in Vietnam. The process of applying IFRS in Vietnam still faces many challenges, in the process of implementation, related entities should gradually remove challenges to achieve the best results after this application roadmap.

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DETERMINANTS OF CAPITAL STRUCTURE: AN EMPIRICAL STUDY OF COMPANIES LISTED ON THE VIETNAM STOCK EXCHANGE

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Abstract: *This study investigates the determinant of the capital structure of 317 Vietnam companies listed on the Stock Exchange of Vietnam during the period 2010 to 2019 by using GLS model. The study indicates that Firm Size, Fixed asset ratio, and Inflation rate have a positive influence on capital structure. Meanwhile, the Current ratio, Enterprise Revenue Growth rate, Interest Coverage Ratio, and Gross domestic product have a negative influence on a firm's capital structure.*

• Keywords: *capital structure, determinants, Vietnam stock market.*

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Tóm tắt: *Bài nghiên cứu thực hiện nghiên cứu các nhân tố ảnh hưởng đến cơ cấu nguồn vốn của 317 doanh nghiệp đang niêm yết trên thị trường chứng khoán Việt Nam trong giai đoạn từ năm 2010 đến 2019 bằng mô hình GLS. Nghiên cứu đã chỉ ra rằng quy mô doanh nghiệp, cơ cấu tài sản và lạm phát có ảnh hưởng tích cực đến cơ cấu nguồn vốn. Trong khi đó khả năng thanh toán hiện thời, tốc độ tăng trưởng doanh thu, khả năng thanh toán lãi vay và GDP ảnh hưởng tiêu cực đến cơ cấu nguồn vốn.*

• Từ khóa: *cơ cấu nguồn vốn, các nhân tố ảnh hưởng, thị trường chứng khoán Việt Nam.*

1. Introduction

One of the most important decisions of the enterprises is setting a reasonable capital structure to maximize the firm value. Many studies had pointed out that there are severe factors that influence the capital structure, Frank & Goyal, 2009; Getzmann (2010) suggest that enterprise growth rate, enterprise size, profitability, and fixed asset ratio impact on capital structure. Moreover, Frank and Goyal (2009); Deesomsak et al. (2004) indicate that macro conditions such as GDP and Inflation rate also influence capital structure. Over many years of empirical research, the key factors influencing the ideal capital structure have been

disputed. Particularly, what variables affect how businesses choose the categories of securities to issue is seen as being in doubt. Additionally, when debt levels are both above and below desired leverage, the majority of businesses change their capital structures. Consequently, companies change their capital structures in the direction of the objective capital structures when leverage diverges from that structure, however, the rates of adaptation are viewed with suspicion.

Additionally, examination of financing options, particularly leverage level, is essential. Since firms have a lot of assets that may be used as collateral for loans, the sector requires a significant amount of funding to invest in land and property. Thus the choice of capital structure and how quickly it adjusts to the desired amount of leverage need more research for enterprises. Thus, the study aims to examine the determinants of capital structure of Vietnamese firms listed on the Vietnam Stock Exchange in the context of effects of the economic downturn (2010-2019). This findings of this study may provide some insights to management in steering the corporate structure of firms.

The rest of this paper is organized as follows: Section 2 reviews the prior literatures and develop the hypothesis. Section 3 presents the data and methodology, while Section 4 shows the empirical findings and discussion. Finally, conclusions are presented in Section 5.

* *Academy of Finance*

2. Literature Review and Hypothesis

The capital structure of a firm is defined as a Debt ratio and is the combination of debt and equity that it utilizes to support its activities. A company's capital structure may include a variety of components such as ordinary stock, various classes of preferred stock, bonds, debt with varying durations and maturity dates, and retained profits. The debt to equity ratio (DER) assesses the degree to which loan capital is employed in comparison to equity investment. Companies must decide whether to employ borrowed funds, capital raised through the issuing of notes or shares, or their portion of retained profits. The optimal capital structure refers to the ratio of equity to debt capital in such a manner that the cost of capital is minimized and business risks are minimized while business value is maximized.

Several studies showed that capital structure might be influenced by both internal and external factors. Furthermore, changes in the stock market and explicit stock prices have a significant impact on capital structure decisions. Frank and Goyal (2009); Getzmann et al (2010); Deviani and Sudjarni (2018); Almeida and Campello (2007); Dimitris Hatzinikolaou, et al (2002) investigations make an effort to look at capital structure factors. Industry leverage, revenue growth, business size, potential growth, liquidity ratio, annual inflation, and stock market return are the main aspects impacting capital structure decisions that need to be examined. Based on previous studies and empirical research, this study will analyze the factors that impact capital structure. The main goal is to identify the influence direction and influence level of each factor on capital structure.

Stakeholder co-investment is more important to growing businesses. As a result, according to the trade-off principle, expansion diminishes leverage. The pecking order theory, on the other hand, suggests that enterprises with higher investments should collect more debt over time while keeping profitability constant. According to the pecking order idea, growth prospects and leverage are positively associated. Moreover, Jean J. Chen's (2004) and Supa Tongkong's (2012) study showed that the Growth rate has a positive impact on capital structure.

H1: Growth rate has a positive impact on capital structure

Based on Trade-off theory; large companies tend to have more potential to raise money from borrowing than SMEs (small and medium enterprises). Frank and Goyal (2009); and Getzmann et al (2010) result gave that there is a positive impact between firm size and capital structure. Since large enterprises will have more advantages in accessing the market and mobilizing external capital. In addition, asymmetric information might lead to a rise in costs for SMEs in raising funds from external resources. To begin with, financial leverage and company size, according to the equilibrium theory, have a negative relationship. Because the corporation is vast and diverse, the correlation is proportionate (Titman et al. Welsels, 1988). To put it another way, when it comes to working with financial institutions, huge organizations have an edge over smaller businesses.

H2: Size has a positive impact on capital structure

The current ratio represents the Liquidity of the firm. This ratio reflects the ability to convert assets into cash to cover current liabilities. According to the trade-off principle, businesses can pay with debit, but they must maintain a high liquidity ratio. The correlation between debt and company liquidity is positive. Pecking order theory, on the other hand, shows that liquidity and debt ratio have the opposite connection. When a company's liquidity ratio is high, it is more likely to use its funds instead of borrowing. In addition, Myers and Rajan (1998) show that the more liquid companies borrow less. By determining this factor, it is possible to assess a company's debt repayment. This improves the credibility of the company itself from the investor's perspective, makes it more attractive to investors, and increases the value of the company. According to Deviani and Sudjarni (2018), and Mohd. NawiPurba et al (2020), the current ratio has a negative impact on capital structure. Because the higher the current ratio, the better the liquidity condition company is.

H3: Liquidity has an impact on capital structure

The trade-off theory assumes that when the firm uses debt capital, it incurs an interest cost.

The higher the interest expense, the lower the company's borrowing capacity, and vice versa. This means that there is a relationship between interest expense and the capital structure of the firm. Interest expense is calculated as interest expense divided by earnings before interest and taxes, so interest expense is inversely proportional to earnings before interest and taxes. The higher the interest expense, the lower the profit before interest and taxes. Suhaila (2008) and Harris and Raviv (1990) demonstrate that the interest coverage ratio has a negative impact to leverage. Because the rise in debt could rise the default probability, which means a lower interest coverage ratio indicates a higher debt ratio.

H4: Interest coverage has a negative impact on capital structure

The following metrics represent the business's performance: Fixed Asset turnover ratio (TANG), Asset Turnover Ratio (ATR), Receivable turnover ratio (ARR), and Inventory turnover ratio (IT). Operational performance refers to the ability to create operational results when consuming inputs in an industrial enterprise's business process. Almeida and Campello (2007) suggest that it also serves as the foundation for managers when performing business evaluations, business partners, suppliers, and competitors' managers, therefore, be able to make more accurate decisions with each company choice. The degree of management and use of business capital of the firm, the movement of commodities, capital... in the enterprise, and the status of the enterprise are all reflected in operational efficiency. On the other hand, ErwanMorellec (2001) showed the is a negative impact between the asset structure and leverage ratio since it might risk for firms that have strong access to a liquid fixed asset. EkaAgustiningtias's (2016) study showed that Inventory turnover has a negative effect on capital structure. Since companies generally usually strive for a high inventory turnover. After all, a high inventory turnover minimizes the level of cash in stock, enhancing solvency and financial health. Furthermore, maintaining a high inventory turnover lowers the danger of their goods turning owing to spoilage, damage, theft, or technical inadequacy. In certain circumstances, a high inventory turnover is caused by the firm holding

inadequate inventory, which may imply that it is missing out on prospective sales. According to the pecking order principle, corporations are more likely to pick finances from internal sources rather than external ones, and debt is an external financing source that becomes the second option following internal funding sources. Effective capital turnover allows the business to control its operational costs. The receivables turnover ratio indicates how long it takes for a company's invested capital in collections to become money again in a given time (Aprilia, 2017). According to Kasmir (2010), a greater ratio indicates that the working capital invested on receivables is smaller, which is favorable for the business. Debts are frequently used to fund a company's operating capital. As stated previously, greater debt levels may boost profit while lower debt levels may diminish profit since businesses miss out on commercial opportunities. In contrast, growth in the number of loans may reduce profit since the advantage from tax savings and the incremental benefit are insufficient to pay the expenses associated with increased utilized debts.

H5: Operational performance has a negative impact on capital structure

The trade-off theory of capital structure posits that the firm incurs interest expenses when it uses debt. The greater the interest expense, the lesser the enterprise's borrowing capacity, and vice versa. This suggests that there is a negative link between interest expenditure and the firm's capital structure. Dimitris Hatzinikolaou, Katsimbris, and Noulas (2002) claimed that inflation has a strong positive impact to leverage since the increased interest rate risk could lead to an increased cost of debt. Furthermore, a high inflation rate limits the quantity of debt-financed investment projects. As interest rates become more unclear, higher inflation may restrict the number of capital investments that a business performs. The rate of interest uncertainty is exacerbated by rising inflation uncertainty. To compensate for this risk, an additional risk premium may be applied to the loan cost. As a result, the cost of debt will rise, reducing the amount of debt issued by businesses.

H6: Inflation has a positive impact on capital structure

Firms tend to choose a higher extent of financial leverage when operating in a period of

rapid economic development, associated with high cash inflows and a low likelihood of bankruptcy. Throughout a downturn, on either side, the opposite is true. GDP, as a measure of financial performance, may also be seen as an indicator of how much simpler it will be to incur debt and service debt expenses. Furthermore, Zia Ur Rehman (2016) and Hsien-Hung Yeh & Eduardo Roca (2010) suggest that GDP has a positive with the leverage ratio. Since it might possible for business expansion to rise during periods of economic expansion, increasing company

H7: GDP has a positive impact on capital structure

Table 1: Summary of empirical shreds of evidence and predicted relationships of capital structure determinants under different theories

Determinants	Predicted signs	Sample empirical evidence
Size	+	Frank and Goyal (2009); and Getzmann et al (2010)
Growth	+	Frank and Goyal (2009); and Getzmann et al (2010)
Current ratio	+/-	Deviani and Sudjarni (2018), and Mohd. NawiPurba et al (2020)
Fixed asset ratio	-	Almeida and Campello (2007), and Morellec (2001), EkaAgustiningtias (2016), Aprilia, (2017), Kasmir (2010)
Asset turnover	-	
Receivable turnover ratio	-	
Inventory turnover ratio	-	
Interest coverage	-	Suhaila (2008) and Harris and Raviv (1990)
Inflation	+	DimitrisHatzinikolaou, Katsimbris, and Noulas (2002)
GDP	+	Zia Ur Rehman (2016) and Yeh and Roca (2010)

Note: (+) is a positive effect and (-) is a negative effect.

Source: Compiled by the author

3. Data and methodology

3.1. Data collection

This study would cover the data of 317 companies, with a total of 3,170 observations., listed on the Vietnam Stock Exchange over the period of 10 years (from 2010 to 2019) which was gathered mostly from company financial

statements, corporate associate announcements, reports, and yearbooks from the Stock Exchange and Fin's Pro Exchange computer system. Panel data was selected which allows for accounting for the variability of business particular factors. Combining both time series of all cross-section observations is more effective, instructive, and provides more flexibility while minimizing collinearity across variables.

3.2. Data analysis

We used a package of STATA software version 13 to estimate the regression equations that we proposed above. First off, bivariate relations among variables were explored via examining correlation. Next, we used ordinary least square (OLS) to examine the effect of factors on capital structure. Then, Hausman's test was employed to discover which models are more suitable for the data set between Fixed Effects Model (FEM) and Random Effects Model (REM). The result suggests that FEM is suitable for the character of data in this research. The research also examined some necessary test for regressive assumption to ensure the result of regression is blue such as autocorrelation, multicollinearity and heteroskedasticity.

Finally, to validate our research results, GLS was performed to recalculate standard errors in case the models violate regressive assumptions.

3.3. Variables

Dependent variable

The dependent variable in this study is the capital structure. The dependent variable is Capital structure will measure by the Debt to Assets Ratio (TDTA).

Independent variable

Variables of the model used for determining capital structure include: Fixed Asset ratio (TANG), Interest Coverage Ratio (EBIT/I), Current ratio (CUR), Firm Size (SZ), Revenue growth rate (GROWTH), Asset turnover (ATR), Inventory turnover (IT), Receivable turnover ratio (ARR). Vietnam firms faced the difficulties of the economy, such as: high interest rate, high inflation in 2011, GDP and CPI of Vietnam in the research period also are considered in this paper.

Table 2: Variable definition and Proxies

Variable name	Definition	Proxies
TDTA	Debt ratio	Total Debt/Total Asset
CUR	Current ratio	Current Assets/Current Liabilities
ICR	Interest Coverage Ratio	EBIT/Interest expense
GROWTH	Enterprise Revenue Growth rate	Increase in the total Revenues/Total Revenues from the prior year's
SZ	Enterprise size	The Logarithm of Total Assets
TANG	Fixed asset ratio	Fixed Asset/Total Asset
ATR	Asset turnover ratio	Net Sales/Average Total Sales
IT	Inventory turnover ratio	COGS/Average Inventory
ARR	Receivable Turnover Ratio	Net sales on credit/ Average accounts receivable
GDP	Gross domestic product	Growth in gross domestic in 2010-2019
INF	Inflation rate	The annual inflation rate in 2010-2019

Source: Compiled by the author.

To study the factors that impact the capital structure listed on the Vietnam Stock Exchange, the model is built as follows:

$$TDTA = \beta_0 + \beta_1 \cdot GROWTH_{it} + \beta_2 \cdot SZ_{it} + \beta_3 \cdot CUR_{it} + \beta_4 \cdot ICR_{it} + \beta_5 \cdot TANG_{it} + \beta_6 \cdot ATR_{it} + \beta_7 \cdot IT_{it} + \beta_8 \cdot ARR_{it} + \beta_9 \cdot GDP_{it} + \beta_{10} \cdot INF_{it} + u_{it}$$

4. Results and discussion

4.1. Descriptive statistic

Table 3: Descriptive Table

Variable	N	Mean	SD	Min	Max
TDTA	3170	0.4940394	0.2173385	0.0109895	1.763201
CUR	3170	2.297288	3.420812	0.14	105.7035
ATR	3170	1.164833	1.11782	-0.0032087	14.50128
INF	3170	0.06081	0.049704	0.0063	0.1868
SZ	3170	11.91704	0.6938279	10.12417	14.6061
TANG	3170	0.0648177	0.8793785	-7.337697	48.13833
GROWTH	3170	0.3449815	3.935065	-1.039212	176.1942
GDP	3170	0.06311	0.0059469	0.0525	0.0708
ICR	3170	11.14928	46.18568	-106.0244	743.5007
ARR	3170	31.31731	416.5027	-.04	14816.87
IT	3170	18.6847	107.0571	-2	4147.777

Source: Compiled by the author.

Over a span of ten years, the GROWTH variable peaked at 176.1942 while ICR peaked at 743.5007 percent. In general, these statistical findings of business performance from 2010 to 2019 might imply that Vietnam's listed firms had

strong success. This is because the Vietnam stock market reached a record high in 2017, surging by almost 48 percent from the year before. The stock market achieved approximately 73 percent of the GDP due to the strong performance of several companies, including well-known companies like Petrolimex, Vietjet, and others, and positive economic growth.

The ARR is significantly different; the variable's range ranges from -0.04 to 14816.87. This may be a result of the traits that distinguish different companies on the Vietnamese stock market, such as hospitality and agriculture, which have the lowest ARR while mining and industrial chemicals are more likely to need a high ARR.

Variables like CUR, TANG, ATR, ICP, and SZ observe an average of 2.2972, -7.337, 1.1648, 11.14928, and 11.917 sequences each.

The average value of the capital structure variable TDTA is 0.4940, while the maximum value is 1.7632 and the lowest is 0.0109. The difference between the highest and lowest values is considerable. This means firms tend to raise external resources from debt.

Between the range of -2 and 4147.777, there is a substantial variance in IT. Since the Inventory Ratio helps the manager plan and shows how quickly the company exchanges its goods and services for cash. The more the ratio is greater, the more liquid the company is since it shows how much stock has been sold and how frequently profits are made.

4.2. Correlation

The results of pairwise correlation analysis in Figure 3 showed the correlation between Size and CUR, ATR has a significantly negative effect followed by -0.1623, -0.2491. This means the SMEs tend to have mostly higher solvency, asset structure, and working capital turnover than larger enterprises listed on the Vietnam Stock Exchange.

SIZE has a significant positive correlation with TDTA ($r=0.3011$). Explain the correlation which could be macro firms might prefer debt financing to small and medium enterprises. Variables such as INF, TANG, and ATR have a positive correlation with TDTA, especially TANG ($r=0.0942$), However, TDTA has a low positive correlation with ATR ($r=0.0276$). This means

during this period listed companies on Vietnam Stock Exchange tend to utilize asset effectively and generates more revenue. Therefore, to expand the business they might raise one small proportion by debt financing.

CUR has negative significantly with TDTA ($r = -0.4160$). Businesses that have a large current asset proportion might be capable of paying obligations due to a larger proportion of short-term asset value relative to the value of their short-term liabilities.

Figure 2: Coefficient of correlation

	TDTA	CUR	ATR	INF	SZ	TANG	GROWTH
TDTA	1.0000						
CUR	-0.4160* 0.0000	1.0000					
ATR	0.0276 0.1197	-0.0692* 0.0001	1.0000				
INF	0.0315 0.0760	-0.0471* 0.0080	0.0309 0.0820	1.0000			
SZ	0.3011* 0.0000	-0.1623* 0.0000	-0.2491* 0.0000	-0.1094* 0.0000	1.0000		
TANG	0.0942* 0.0000	-0.0194 0.2752	-0.0126 0.4791	-0.0031 0.8604	-0.0067 0.7069	1.0000	
GROWTH	-0.0243 0.1710	0.0438* 0.0136	-0.0000 0.9983	0.0297 0.0942	0.0097 0.5833	0.0042 0.8134	1.0000
GDP	-0.0265 0.1357	0.0544* 0.0022	-0.0130 0.4627	-0.3642* 0.0000	0.1051* 0.0000	0.0176 0.3211	0.0005 0.9779
ICR	-0.0244 0.1696	-0.0188 0.2892	-0.0087 0.6230	-0.0418* 0.0185	0.4366* 0.0000	-0.0008 0.9652	-0.0058 0.7441
IT	-0.1097* 0.0000	0.0330 0.0631	0.0375* 0.0347	-0.0174 0.3278	-0.0590* 0.0009	-0.0020 0.9121	0.0461* 0.0094
ARR	-0.0090 0.6111	0.0048 0.7887	-0.1066* 0.0000	-0.0109 0.5391	-0.0409* 0.0212	-0.0008 0.9659	-0.0025 0.8880
		GDP	ICR	IT	ARR		
GDP	1.0000						
ICR	0.0462* 0.0093	1.0000					
IT	0.0118 0.5072	-0.0126 0.4785	1.0000				
ARR	-0.0176 0.3230	-0.0012 0.9441	0.0791* 0.0000	1.0000			

Source: Compiled by the author.

Panel unit root test

The Levin-Lin-Chu test was employed in this study (LLC Test - 2002). One of the earliest unit root tests for tabular data was by Levin, Lin, and Chu (2002). At the 1% significance level, the test

findings on the sample data reveal that all variables are stationary. Therefore, the regression model's projected findings on the variables are trust worthy.

Table 4: Levin-Chu Panel root test

Variable	P-value	Result
TDTA	0.0000	Stationary
CUR	0.0000	Stationary
ATR	0.0000	Stationary
SZ	0.0000	Stationary
TANG	0.0000	Stationary
INF	0.0000	Stationary
GROWTH	0.0000	Stationary
GDP	0.0065	Stationary
ARR	0.0000	Stationary
IT	0.0000	Stationary
ICR	0.0000	Stationary
ARR	0.0000	Stationary

Source: Compiled by the author

4.3. Findings and Discussion

For the sample of our research, the fixed effects method is more appropriate than the random effects. This assumption was also formally tested. Hausman test is used to consider between FEM and REM. The result of the p-value is zero so the FEM model is suitable for the situation, which showed below:

Figure 3: The result of the Hausman Test of the factors that influence the firm capital structure

	Coefficients			
	(b) re	(B) fe	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
CUR	-.011213	-.0104578	-.0007552	.0000489
ATR	-.0050839	-.0138364	.0087525	.
INF	-.2157925	-.2353027	-.0195101	.
SZ	-.1223425	-.1306248	-.0082822	.
TANG	.0207692	.0204366	.0003325	.0003123
GROWTH	-.0001418	.0000206	-.0001623	.00006
GDP	-1.349875	-1.47397	.1240954	.0055932
ICR	-.0004796	-.0003827	-.0000969	.
IT	-8.45e-06	2.63e-06	-.0000111	2.00e-06
ARR	3.12e-06	2.72e-06	3.96e-07	.

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$\chi^2(8) = (b-B)'[(V_b-V_B)^{-1}](b-B) = 106.78$$

Prob>chi2 = 0.0000
(V_b-V_B is not positive definite)

Source: Compiled by the author

After choosing, the suitable model FEM, this research would continuously perform tests to identify the Heteroscedasticity, Autocorrelation, and Multicollinearity. The result is given as follows:

Figure 4: The result of the Heteroscedasticity test

```
Modified Wald test for groupwise heteroskedasticity
in fixed effect regression model

H0: sigma(i)^2 = sigma^2 for all i

chi2 (317) = 1.3e+05
Prob>chi2 = 0.0000
```

Source: Compiled by the author

Utilizing the Wald test to identify Heteroscedasticity, indicated that Prob>chi2 = 0.0000 is lower than the 5% significant level, $\alpha = 0.05$, and the model has Unequal variance.

Figure 5: The result of the Autocorrelation test of the factors that influence the firm capital structure

```
Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
F( 1, 316) = 327.952
Prob > F = 0.0000
```

Source: Compiled by the author

Utilizing the Wooldridge test to identify autocorrelation, indicated that Prob>chi2 = 0.0000 is lower than the 5% significant level, $\alpha = 0.05$, and the model has the Autocorrelation.

Figure 6: The result of the multicollinearity test

Variable	VIF	1/VIF
SZ	1.42	0.704995
ICR	1.26	0.794066
INF	1.16	0.858778
GDP	1.16	0.859273
ATR	1.11	0.901655
CUR	1.06	0.945250
ARR	1.02	0.982038
IT	1.01	0.986883
GROWTH	1.01	0.994042
TANG	1.00	0.998740
Mean VIF	1.12	

Source: Compiled by the author

Utilizing the VIF test for multicollinearity, mean VIF = 1.12, and all the VIFs are lower than 10, therefore the model does not have multicollinearity error.

After choosing, the suitable model FEM through the Hausman test with With the result Prob> chi2 = 0.0000 < 0.05 at a significant level of 5%, this research would continuously perform tests to identify the GroupWise Heteroscedasticity, Autocorrelation, and Multicollinearity by using xttest3, xtserial and vif command in Stata. The result is given as the model has the Unequal variance and Autocorrelation but does not contain

the Multicollinearity. Figure 7 showed the result of the regression model of factors that influence the firm capital structure of companies listed on the Vietnam Stock Exchange from 2010 to 2019, with the dependent variable TDTA after identifying the error and correcting the model.

Since the p-value of ATR, IT, and ARR, is more than 0.05 at the significance level of 5%. This means to correct the model the ATR, IT, and ARR should be eliminated from the model. And with Prob> chi2 = 0.0000, the model GLS can be utilized in analyzing the factors that impact capital structure.

The Model final multiple regression model is given below:

$$TDTA = -1.249883 - 0.0005779 \text{ GROWTH} + 0.1542538 \text{ SZ} - 0.0185252 \text{ CUR} - 0.0006937 \text{ ICR} + 0.0202881 \text{ TANG} - 0.7248624 \text{ GDP} + 0.1180825 \text{ INF} - 0.0044006 \text{ ATR} - 0.0000164 \text{ IT} + 0.0000119 \text{ ARR}$$

Figure 9: Linear Regression for factors that impact the firm capital structure after correction

Cross-sectional time-series FGLS regression

```
Coefficients: generalized least squares
Panels: heteroskedastic
Correlation: common AR(1) coefficient for all panels (0.8268)

Estimated covariances = 317      Number of obs = 3,170
Estimated autocorrelations = 1    Number of groups = 317
Estimated coefficients = 11       Time periods = 10
Wald chi2(10) = 1654.18
Prob > chi2 = 0.0000
```

TDTA	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
CUR	-.0185252	.0008679	-21.35	0.000	-.0202262 -.0168243
ATR	-.0044006	.0027585	-1.60	0.111	-.0098073 .0010061
INF	.1180825	.0250513	4.71	0.000	.0689829 .1671821
SZ	.1542538	.0059708	25.83	0.000	.1425512 .1659564
TANG	.0202418	.0015632	12.95	0.000	.017178 .0233055
GROWTH	-.0005779	.000294	-1.97	0.049	-.0011542 -.1.68e-06
GDP	-.7248624	.2284729	-3.17	0.002	-1.172661 -.2770637
ICR	-.0006937	.0000758	-9.15	0.000	-.0008422 -.0005451
IT	-.0000164	.0000233	-0.70	0.481	-.000062 .0000292
ARR	.0000119	8.45e-06	1.41	0.160	-4.68e-06 .0000284
_cons	-1.249883	.0731937	-17.08	0.000	-1.39334 -1.106426

Source: Compiled by the author.

SZ has a positive influence on capital structure TDTA. It consists of the previous hypothesis, and the study of Frank and Goyal (2009); and Getzmann et al (2010). The larger the firm, the stronger it is financial potential, and the smaller the chance of bankruptcy. Due to their good reputation, large-

scale firms will have easier access to external finance sources. Hackbarth et al (2007) found that Small and Medium Enterprises tend to loans from the bank for investing in the new project, while the Macro firms mostly raise debt from the public. Therefore, the lower the bank fixed cost from debt, the more loans are too Small and Medium Enterprises.

CUR has a negative influence on TDTA, which consist with the previous study by Deviani and Sudjarni (2018). This means a firm with high liquidity tends to remain a significant short-term asset. Therefore, internal funding is utilized except for raises from outside resources. This consist of the theory of pecking order, corporations would prioritize their funding options (from domestic to external) and reserve equity financing as a last resort. Domestic funds are used first, then debt is issued once they are gone. When issuing more debt isn't a good idea, equity is issued instead. Therefore, listed firms on the Vietnam stock exchange might tend to maintain the debt structure follow by the pecking order theory.

TANG has a positive influence on TDTA. Explaining this influence, most firms in this period had utilized debt. Therefore, expanding the fixed asset amount might require more external resources raise from debt. Due to the general prospect of bankruptcy in the case of insolvency, tangible assets also tend to lower the firm's financial expenses. For debtors, it might be utilized as a kind of security (Almeida et al, 2007). Furthermore, having a high amount of securitized physical assets may reduce the tension between managers and shareholders, as directors would not have much free capital to invest in unproductive projects. Given these considerations, creditors may likely be willing to lend to a firm with a significant level of physical assets than to a business with a level lower of physical assets.

GROWTH negative influence on capital structure TDTA. This outcome recommends that organizations with a higher resource development rate will keep a lower obligation proportion. This can be made sense of that whenever there are learning experiences, for example, more deals, recorded organizations available would not generally acquire from outside, predominantly from banks, or credit establishments.

ICR has a negative influence on TDTA. This means most firms during the period could have better performance. Although to remain the production activities, firms need to borrow short-term loans despite the fact interest rate may increase. However, more earnings are gained to meet interest payments. This result is consistent with Assad NaimNasimi's (2016) study. This indicates that profitability is negatively connected to the interest coverage ratio and that increasing debt will raise the risk of default. As a result, a high-interest coverage ratio indicates a low risk of liquidity, as default probability is related to the probability of liquidity problems. This means that the firm's financial health is strong during this period, and the corporation is more capable of satisfying interest payments. Businesses can afford to pay their debts when they become due; therefore, they are not at risk of going bankrupt if they have not discovered a source of new capital.

GDP has a negative influence on TDTA. As explained by the pecking order theory therefore enterprises have increased internal funds, which they rate as the primary financial resource. During moments of peak business growth, companies tend to generate larger profits and net earnings. This allows the company to fund additional investments without having to issue bonds or shares. This is not supported by Zia Ur Rehman (2016) and Hsien-Hung Yeh& Eduardo Roca (2010), since they suggest that GDP has a positive with the leverage ratio. It might possible for business expansion to rise during periods of economic expansion, increasing the company. However, this consist with the study of Zouhaier, H., & Fatma, M. (2014), which found that GDP has a negative influence on the debt ratio.

INF has a positive influence on TDTA. Consistent with previous research by DimitrisHatzinikolaou et al. (2002), since the company issues debt and the business climate deteriorates; the company may be obliged to issue additional shares on unfavorable terms within the long term. The higher the inflation rate, the lower the capital structure. Furthermore, inflation raises corporate risk by causing more variable operating income, cash flows, and interest tax shielding. As a result, the advantages of taking out a loan are diminished and also raise interest rate uncertainty, leading to increased loan costs.

5. Conclusion

This study investigates the determinants of capital structure of 317 companies listed on the Vietnam Stock Exchange. The study indicates that Asset turnover, Inventory turnover, and Account Receivable turnover do not influence the capital structure. While Firm Size, Fixed asset ratio, and Inflation rate have a positive influence on capital structure. Furthermore, the Current ratio, Enterprise Revenue Growth rate, Interest Coverage Ratio, and Gross domestic product have a negative influence on a firm's capital structure.

These findings have important implications for capital structure decision of Vietnamese firms. Even though highly attempts in bring about clear evidence cuts via empirical results, our study still remains a lot of limitation with highly demand for future fulfilment: sample size is limited; the study is based on secondary data. Future studies should be done to include a wider number of Vietnamese firms.

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PESTLE - AN APPROACH FOR FDI ENVIRONMENT ANALYSIS A CASE STUDY FOR VIETNAM AND SOME ASEAN COUNTRIES

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Abstract: *There is a widespread belief that foreign direct investment (FDI) generates positive productivity effects for receiving countries. To developing economic, FDI has been viewed as a power financial resources and therefore, attracting FDI has been considered as a main target of policymakers in those countries. However, there is a shortage of qualified and various quantitative data to access exactly how the FDI environment situation is and to compare the environment among developing countries as well. To provide a bird's eye view of the whole environment from many different angles that investors want to check and keep a track of while contemplating on a certain business, this paper applies PESTLE analysis (Political - Economic - Social - Technology - Legal - Environmental) to shape FDI environment in Vietnam by PESTLE framework. By reviewing an amount of macro indicators of Vietnam involved in PESTLE from 2005, combining with FDI data in country level, the result has shown that (i) every six points in PESTLE framework have been in relation with FDI inflow into Vietnam; and (ii) AEC commitments have been broadening the PESTLE hexagon of Vietnam to attract FDI, especially in terms of economic and legal angles.*

• Keywords: FDI, PESTLE, FDI environment.

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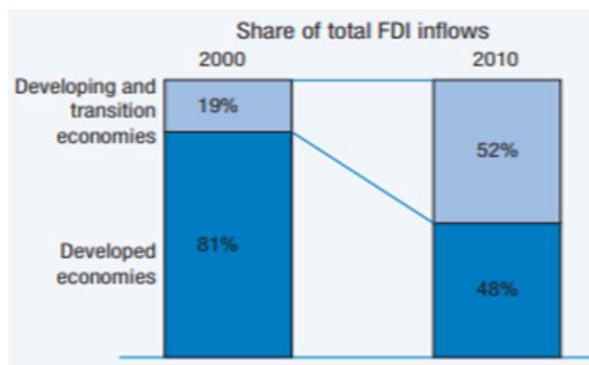
Tóm tắt: Trong thời gian vừa qua, đầu tư trực tiếp nước ngoài (FDI) luôn được đánh giá là một kênh tạo ra hiệu ứng năng suất tích cực cho các nước tiếp nhận đầu tư. Đối với các nền kinh tế đang phát triển, FDI còn được xem là nguồn tài chính quan trọng và do đó, thu hút FDI được coi là mục tiêu chính của các nhà hoạch định chính sách ở các nền kinh tế đang phát triển. Tuy nhiên, thực tế cho thấy, các dữ liệu định lượng để tiếp cận chính xác tình hình môi trường FDI, qua đó có thể so sánh môi trường giữa các nước đang phát triển còn rất hạn chế. Để cung cấp một cái nhìn toàn cảnh về toàn bộ môi trường từ nhiều góc độ khác nhau cho nhà đầu tư khi cân nhắc đầu tư vào một lĩnh vực kinh doanh nhất định, nghiên cứu này áp dụng phân tích PESTLE (Chính trị - Kinh tế - Xã hội - Công nghệ - Pháp lý - Môi trường) để khảo sát một số đặc điểm về môi trường FDI tại Việt Nam. Bằng cách xem xét một số chỉ tiêu vĩ mô của Việt Nam theo khung PESTLE từ năm 2005, kết hợp với dữ liệu FDI ở cấp quốc gia, kết quả cho thấy (i) cả sáu tiêu chí trong khung phân tích PESTLE đều có liên quan đến dòng vốn FDI vào Việt Nam; và (ii) Các cam kết AEC đã và đang mở rộng hình lục giác PESTLE của Việt Nam để thu hút FDI, đặc biệt là về góc độ kinh tế và pháp lý.

• Từ khóa: FDI, PESTLE, môi trường thu hút FDI.

1. Introduction

Foreign direct investment is often seen as an economic blessing for developing nations. Foreign direct investment can be described as money that a company invests in buildings, factories, machines or other infrastructure outside of the company's home country.

Figure 1. More FDI into developing and transition economies in 2010 than that in 2000



Source: International Financial Corporation - IFC, 2011

There are promising trends in global foreign direct investment (FDI) flows for developing and transition economies. Each year more and more FDI is flowing not only from developed

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into developing economies but also from one developing or transition economy to another. Indeed, developing and transition economies' share of global FDI inflows rose from roughly 19 percent in 2000 to 52 percent in 2010 -for the first time exceeding half the total (Figure 1), and half the top 20 FDI recipients in 2010 were developing or transition economies (International Financial Corporation - IFC, 2011).

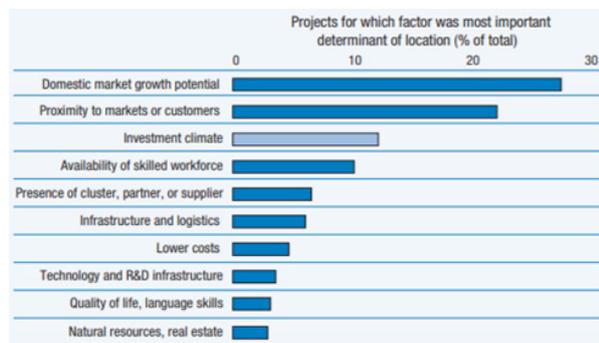
However, there is a shortage of qualified and various quantitative data to access exactly how the FDI environment situation is and to compare the environment among developing countries as well. Therefore, PESTLE analysis for FDI environment has been designed for very first purpose of FDI investors: Survey and analysis business environment in a specific economy before any FDI decisions.

2. PESTLE framework for FDI environment in developing country

Many researchers have identified motivations driving companies to undertake different types of FDI (USAID, 2005), including:

- *Natural-resource-seeking FDI* - to gain access to a natural resource not available in the company's home market.
- *Market-seeking FDI* - to gain access to new customers, clients, and export markets.
- *Efficiency-seeking FDI* - to reduce production costs by gaining access to new technologies or competitively priced inputs and labor.
- *Strategic-asset-seeking FDI* - to go after strategic assets in a local economy, such as brands, new technologies, or distribution channels.

Figure 2. Market size and investment climate matter for the location of FDI



However, the determinants identified as significant vary depending on the countries, sectors, years, and types of investment studied. Those above drivers do not highlight the market features and investment climate in the host economy - which may be one of the most importance factor to foreign companies in the context of globalization (Figure 2).

Market size: It cannot deniable that market size matter for attracting FDI. The world's largest economies attract the most FDI. Together, the world's 10 largest economies accounted for 47 percent of all FDI inflows in 2010. The United States, the world's largest economy, remained the top FDI destination, receiving US\$228 billion. Following is China, the most populous, which received more than US\$106 billion (UNTACD, 2011). *Source:* (International Financial Corporation - IFC, 2011)

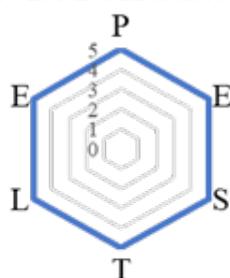
Market potential: Market potentials concern about potential profit of FDI investors. For developing and transition economies, market growth potential is more important than market size. The economic growth expectations based on population and income growth prospects mean that many emerging economies offer foreign investors high potential returns on investment- and there has been an FDI boom in the world's leading emerging markets (International Financial Corporation - IFC, 2011). Research by the McKinsey Global Institute (2010) suggests that Africa has more high-return investment opportunities than any other developing region. A survey by Ernst & Young (2011) forecasted FDI inflows for Africa of US\$150 billion in 2015.

Investment climate: The investment climate clearly matters for the location decisions of foreign investors (Mukim, 2010). Investment climate is a key factor in guarantee the success of FDI projects and is considered as a key tool in promoting inbound FDI plants of authorities. Although lowering effective tax rates can help boost FDI, the effect is eight times as strong for countries with a good investment climate (James, 2009). Most important, the quality of the investment climate may better allow for the beneficial spillovers from FDI-providing

the welfare gains through technology transfer to local suppliers that many economies seek (Blalock, 2008).

To cover almost factors which may matter decision of foreign investors, PESTLE framework seems useful for analyst to overcome econometric identification challenges in developing and emerging economies. PESTLE framework for FDI environment has included six factors: Political - Economic - Social - Technology - Legal - Environmental with 5mark levels, including: 0. Very bad; 1. Bad; 2. Low-middle; 3. Middle; 4. Acceptable and 5. Perfect (Chart 1). PESTLE framework is a useful tool for FDI investors to compare FDI environment between developing and emerging economies before any FDI decisions.

Chart 1. PESTLE framework



Source: Author's analysis

PEST model was first published by Michael Porter and used to analyze macro factors in business environment of an enterprise. Because business environment is also a crucial factor that matters FDI decisions of investors, PEST is applied to analyze business climate for FDI perspective. Additionally, the two additional factors, including L - legal and E - environment, are added into the model and made the PEST become PESTLE.

P - The Political aspect of PESTLE Analysis focuses on political stability. The stable politic ensures a safe business climate for any economic activities and protect FDI potential profit. A stable political scene is one where the ruling government is favored by the population and does not experience strong indicators of social unrest. Political stability and economic development are deeply interconnected. The relationship between FDI, economic growth and stability refers to the

manner, in which the political stability of a nation can lead to its economic growth and then FDI.

E - The Economic portion of the analysis targets the key factors of market size and market potential. Through this factor, FDI investors examine the economic issues that are bound to have an impact on the company. This would include factors like inflation, interest rates, economic growth, the unemployment rate and policies, and the business cycle followed in the country.

S - The Social factors may be included demographics and age distribution, cultural attitudes, and workplace and lifestyle trends. With the social factor, an FDI business can analyze the socio-economic environment of host potential market via elements like customer demographics, cultural limitations, lifestyle attitude, and education. With these, a business can understand how consumer needs are shaped and what brings them to the market for a purchase.

T - The Technological component considers the specific role and development of technologies within the sector and organization, as well as the wider uses, trends and changes in technology. Innovation index may also be a point of interest in this area. T would be an important factor to determine type and quality of FDI flow into a country.

L - Legal system addressed in PESTLE analysis refers to content in investment policy in a country, including tax guidelines, trade regulations, safety regulations, and employment laws and other policies involved in facilitating business environment. It is obvious that investor cannot perform their FDI activities without permission of authorities in host country. In the context of economic global integration, legal system would be the most important factor that integrating to a common legal system and directly motivates FDI flow.

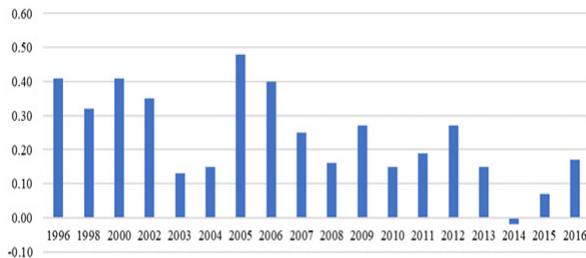
E - Environmental factors have recently been analyzed as a determinant of FDI in receiving countries. In manufacturing sectors, investors must follow environmental regulation in host countries, while those regulations have become stricter and stricter. Therefore, there is a

relationship between environment and FDI. The impact of environmental regulations on FDI may address as the choice of plant location.

3. PESTLE framework for FDI environment - the case of Vietnam in AEC context

To attract FDI in AEC effectively, it is necessary to set out strengths and weaknesses of Vietnam in compare with another AEC members. PESTLE analysis is a method to do so.

Chart 2. Vietnam Political Stability Index in 1996-2016



(-2.5 weak; 2.5 strong) Source: https://www.theglobaleconomy.com/Vietnam/wb_political_stability/

Political - P: Vietnam is a one-party state ruled by the Communist Party of Vietnam which provides strategic direction and decides all major policy issues. Vietnam is one of the more politically stable countries in South East Asia¹. The World Bank provides data for Vietnam from 1996 to 2016. The average value for Vietnam during that period was 0.25 points with a minimum of -0.02 points in 2014 and a maximum of 0.48 points in 2005 (Chart 2).

In 2016, Vietnam ranked 5th in Political stable index in AEC (Table 1).

Table 1. Political Stability Index in AEC 2016

AEC member	Index*	PESTLE mark**	AEC member	Index*	PESTLE mark**
Singapore	1.53	5	Malaysia	0.1	3
Brunei	1.26	5	Indonesia	-0.38	2
Laos	0.5	4	Thailand	-0.93	2
Cambodia	0.18	3	Philippines	-1.3	1
Vietnam	0.17	3			

(*) -2.5 weak; 2.5 strong; (**) Author's mark: >1:5; 0.5-1:4; 0-0.5:3; -0.5-0:2; <-0.5:1

Source: https://www.theglobaleconomy.com/Vietnam/wb_political_stability/

Economic - E: In recent years economic growth averaged 6.2%. Vietnam's economy grew at 6.8% in 2017. GDP per capita has increased by 350% since 1991 (2nd only to China) and Vietnam now has the fastest-growing middle-class in South East Asia². In this paper, economic factor refers to economic freedom index by the reason of economic global integration in AEC context.

Vietnam's economic freedom score is 53.1, making its economy the 141st freest in the 2018 Index. Its overall score has increased by 0.7 point, with improvements in fiscal health, government integrity, and judicial effectiveness offsetting lower scores for the trade freedom, property rights, and labor freedom indicators. Vietnam is ranked 35th among 43 countries in Asia-Pacific region, and its overall score is below the regional and world averages³. In AEC, Vietnam's index is in a lowest top of 2018 economic freedom index (Table 2).

Table 2. 2018 index of economic freedom in AEC

AEC member	Index*	PESTLE mark**	AEC member	Index*	PESTLE mark**
Singapore	88.8	5	Indonesia	64.2	3
Malaysia	74.5	4	Cambodia	58.7	2
Thailand	67.1	3	Laos	53.6	2
Philippines	65	3	Vietnam	53.1	2
Brunei	64.2	3			

(*) Out of 100; (**) author's mark: >80:5; 70-80:4; 60-70:3; 50-60:2; <50:1

Source: https://www.theglobaleconomy.com/Vietnam/wb_political_stability/

Social - S: The Social factors may be included variety of analysis, such as demographics and age distribution, cultural attitudes, and workplace and lifestyle trends... In this paper, author focus on labor force as a main factor represented for S in PESTLE because, most AEC member are considered as developing and emerging economies with abundant labor advantage. In AEC, Vietnam is highly advantageous in labor force with more than 57 million employment in 2017 (Table 3).

² <https://www.gov.uk/government/publications/overseas-business-risk-vietnam/overseas-business-risk-vietnam>

³ <https://www.heritage.org/index/country/vietnam>

Table 3. Employment in AEC member in 2017 (Mill. People)

AEC member	Number of employments	PESTLE mark*	AEC member	Number of employments	PESTLE mark*
Indonesia	127.11	5	Cambodia	9.31	1
Vietnam	57.5	4	Laos	3.6	1
Philippines	44.64	4	Singapore	3.31	1
Thailand	39.14	3	Brunei	0.22	1
Malaysia	15.44	2			

(*) Author's mark: >60:5; 40-60:4; 20-40:3; 10-20:2; <10:1

Source: https://www.theglobaleconomy.com/rankings/labor_force/

Technology - T: To capture the differences in technology, global innovation index is used. It is an annual ranking of countries by their capacity for, and success in, innovation. The innovation index analyses the energy innovation landscape of the next decade and identifies possible breakthroughs in fields such as energy production, storage, distribution, and consumption. It also looks at how breakthrough innovation occurs at the grassroots level and describes how small-scale renewable systems are on the rise. Therefore, innovation index refers to the technology level in long term. In 2017, Vietnam reached 38.3 point in Global Innovation Index and ranked the 3rd position in group of 8 ranked member of AEC (Table 4).

Table 4. 2017 Global Innovation Index in AEC

AEC member	Index*	PESTLE mark**	AEC member	Index*	PESTLE mark**
Singapore	58.7	5	Brunei	32.9	3
Malaysia	42.7	4	Philippines	32.5	3
Vietnam	38.3	3	Indonesia	30.1	3
Thailand	37.6	3	Cambodia	27	2

(*) Out of 100; (**) Author's mark: >50:5; 40-50:4; 30-40:3; 20-30:2; <20:1

Source: https://www.theglobaleconomy.com/rankings/GII_Index

Legal system - L: Over the past 30 years of foreign direct investment (FDI) attraction, due to the global shifts in demand and supply, FDI policies have been constantly changing, leading to fluctuations in the capital inflows to Vietnam. Additionally, other legal systems including environment law, enterprise law, tax law... progressed significantly to motivate FDI flow. Under AEC context, Vietnamese authorities have forced to apply those legal system to achieved

target of economic growth. However, regulatory quality index - an indicator captures perceptions of ability of government to formulate and implement sound policies and regulations that permit and promote private sector development, of Vietnam ranked 123/193 in 2017⁴. That refers to a disadvantage of Vietnam in compare with other AEC members (Table 5).

Table 5. 2017 Regulatory quality index

AEC member	Index*	PESTLE mark**	AEC member	Index*	PESTLE mark**
Singapore	2.18	5	Indonesia	-0.12	2
Malaysia	0.71	3	Vietnam	-0.45	2
Brunei	0.59	3	Cambodia	-0.47	2
Thailand	0.17	3	Laos	-0.73	1
Philippines	0	3			

(*) -2.5 weak; 2.5 strong; (**) Author's mark: >2:5; 1-2:4; 0-1:3; -0.5-0:2; <-0.5:1

Source: https://www.theglobaleconomy.com/rankings/wb_regulatory_quality/

Environment - E: Environmental regulation may affect on FDI decision. the stricter the regulations in host countries in Asia the lower the FDI both intensively and extensively to those countries (Heshmati, 2017). Environmental Performance Index provides a gauge at a national scale of how close countries are to established environmental policy goals⁵ and refers in some aspect how the stricter authorities in host country require to FDI investors. In 2018, Vietnam got 46.96 mark in this indicator and ranked 132/180 countries.

Table 6. 2018 Environment Performance Index of AEC members

AEC member	Index*	PESTLE mark**	AEC member	Index*	PESTLE mark**
Singapore	64.23	5	Vietnam	46.96	2
Brunei	63.57	5	Indonesia	46.92	2
Malaysia	59.22	4	Myanmar	45.32	2
Philippines	57.65	4	Cambodia	43.23	1
Thailand	49.88	2	Laos	42.94	1
Timor Leste	49.54	2			

(*) Out of 100; (**) Author's mark: >60:5; 55-60:4; 50-55:3; 45-50:2; <45:1

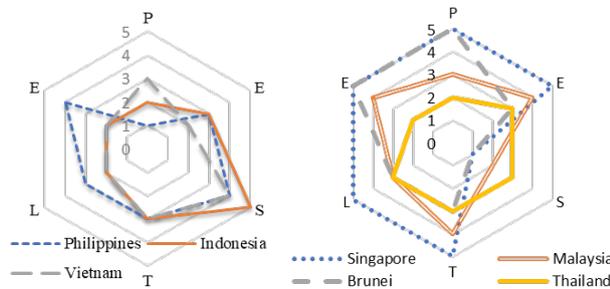
Source: <https://epi.envirocenter.yale.edu/epi-countries>

⁴ https://www.theglobaleconomy.com/rankings/wb_regulatory_quality/

⁵ <https://epi.envirocenter.yale.edu/>

Through indicators in PESTLE analysis, it can be recognized the PESTLE framework in FDI environment in Vietnam (and compare with other AEC members) (Chart 4).

Chart 4. PESTLE framework in AEC



Source: Author

It can be recognized that Vietnam has a same PESTLE hexagon as Indonesia and Philippines with labor advantages. There is a considerable opposition between Vietnam’s PESTLE hexagon and that hexagon of ASEAN 6.

In terms of PESTLE, FDI environment in Vietnam is more convenient than that of Cambodia, and is less convenient that of Singapore, Malaysia, Brunei and Philippines. The direct competitors of Vietnam in attracting FDI include Thai Lan. Stable politic and social characteristics are advantages of Vietnam, but economic condition is being disadvantage of Vietnam to compare with Thailand (Table 7).

Table 7. PESTLE hexagon in FDI environment in AEC members

	Singapore	Malaysia	Brunei	Thailand	Philippines	Indonesia	Vietnam	Cambodia
P	5	3	5	2	1	2	3	3
E	5	4	3	3	3	3	2	2
S	1	2	1	3	4	5	4	1
T	5	4	3	3	3	3	3	2
L	5	3	3	3	3	2	2	2
E	5	4	5	2	4	2	2	1
Average	4.33	3.33	3.33	2.67	3.00	2.83	2.67	1.83

4. Conclusion

With strong commitments and efforts to improve the investment environment of both local and national administration, it is expected

that the FDI flows into Vietnam will continue to rise effectively in the coming time. In the context of the country’s growing international economic integration, importantly including the formation of the ASEAN Economic Community, many foreign investors are promoting their investment in Vietnam because of its internal advantages. However, PESTLE analysis has pointed out that, among AEC members, FDI environment of Vietnam has been more attractive than only that of Cambodia. Except for stable politic and abundant labor, other factors in PESTLE hexagon of Vietnam are ranked lower than that of other AEC members. Therefore, to grasp this huge opportunity to obtain FDI from AEC for sustainable development, Vietnamese Government should activate effective solutions to stimulate national comparativeness for international investment. PESTLE analysis could be a good way, in author’ perspective, for authorities to set up solution frameworks to dealing with every aspect of FDI environment, and to attract FDI effectively in AEC context.

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EXPERIENCE FOR PREVENTION AND ANTI-CORRUPTION OF SOME COUNTRIES AND LESSONS FOR VIETNAM

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Abstract: *Corruption has now become a problem in almost every country and territory in the world. The fight against corruption has always received special attention from our Party and State as well as the entire political system and people of the country. Countries such as China, the US, the UK, and Singapore, along with the World Bank's experience, all expose that they have a system of policies on anti-corruption which is regularly revised to keep up with practical conditions and for the goal of preventing corruption, gradually repelling corruption and waste. Therefore, studying experiences of these countries will help Vietnam with valuable lessons to further improve its ability and capacity on the anti-corruption front.*

• Keywords: *corruption; anti-corruption; prevention of corruption.*

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Tóm tắt: Tham nhũng hiện nay đã trở thành vấn nạn ở hầu khắp các quốc gia và vùng lãnh thổ trên thế giới. Đấu tranh phòng, chống tham nhũng luôn nhận được sự quan tâm đặc biệt của Đảng và Nhà nước ta cũng như toàn hệ thống chính trị và nhân dân cả nước. Các nước như: Trung Quốc, Mỹ, Anh, Singapore cùng với kinh nghiệm của Ngân hàng thế giới đều cho thấy họ có hệ thống chính sách về phòng, chống tham nhũng và được sửa đổi thường xuyên cho phù hợp với điều kiện thực tiễn với mục tiêu là: ngăn chặn, từng bước đẩy lùi tham nhũng, lãng phí. Vì vậy, nghiên cứu kinh nghiệm của họ sẽ giúp cho Việt Nam có được các bài học quý giá nhằm nâng cao hơn nữa khả năng và năng lực trên mặt trận phòng, chống tham nhũng.

• Từ khóa: *tham nhũng; chống tham nhũng; phòng, chống tham nhũng.*

1. Experiences of some developed countries on anti-corruption

China's experience

China is a country with very active views and actions in the world's leading anti-corruption, especially during the tenure of President Xi Jinping. Anti-corruption under General Secretary and President Xi Jinping has become a huge revolution in Chinese politics. By October 2015, according to statistics, 138,867 members of China Communist Party (CCP) have been publicly punished with

various degrees. In order to manage grassroots Party members, the Chinese government has issued regulations on working hours and issues related to people's normal daily life, and introduced a number of measures to enhance anti-corruption, specifically:

The first measure is to enhance international cooperation, build up unrestricted strict punishment and a strong and powerful monitoring system.

- *Strengthening international cooperation in anti-corruption.*

In the times of economic globalization and the easy movement of resources between countries nowadays, especially financial resources and migration sources, if the international cooperation in anti-corruption is not strong and powerful enough, the prevention and fighting against corruption will be ineffective when individual officials with more than two nationalities can easily flee abroad. Therefore, China has carried out comprehensive international cooperation activities, signed judicial cooperation agreements, mutual legal assistance agreements or criminal extradition agreements.

According to the CCP Central Commission for Discipline Inspection, as of November 2020, China has established 169 extradition treaties and signed mutual legal assistance treaties with 81 countries around the world⁽¹⁾. In 2019, the CCP's Central Disciplinary Committee signed a memorandum of understanding with the United Nations on anti-corruption cooperation.

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Strengthening multilateral cooperation, especially with the United Nations, G20, APEC, BRIC, China also signed bilateral cooperation agreements on compliance with regulations related to international law, judicial regulations and international law enforcement which has brought encouraging results, repatriated and recovered quite a lot of lost assets.

In 2016 “sky net” campaign, Chinese authorities arrested and brought home 1,032 corrupt criminals hiding in more than 70 countries and territories around the world; including 134 former officials of state agencies; 19 of them are on the urgent wanted list, having recovered 2.4 billion yuan (US\$346 million). China has extradited a corrupt enterprise hidden in the United States, Lich Hoan Thanh and his brother Lich Jihua (former chief of the Party Central Committee, assistant to former president Hu Jintao). Some media reports said that Lach Hoan Thanh was involved in at least 3 corruptions and money laundering cases with a scale of up to 1 billion USD.

According to 2018 statistics, more than 1000 Chinese people who have fled abroad have been brought back home with a total amount of illegal embezzlement of 519 million USD. Among 1,335 people returned, 307 were Communist Party members or government employees, of which five were on the list of 100 fugitives with red notices. Especially, the former banker of China in Guangdong province Xu Chaofan who is suspected of embezzling \$485 million has fled to the US since 2001 and Jinqi, the former deputy district chief who has been extradited from Bulgaria, this is the first fugitive extradited from a European country to be returned home.

Reported by Xinhua News Agency that in an effort to speed up international cooperation for legal transparency in order to maximize the recovery of lost assets; within 6 years from 2014 to 2020; China has arrested 7,831 fugitives from more than 120 countries, of which 60 fugitives are on the list of 100 fugitives in the red wanted notice, recovering 19 billion yuan. In spite of the period of implementing a fierce anti-Covid-19 campaign, the Chinese government still vigorously implements anti-corruption work. According to China News, from January to August 2020, China arrested 799 defectors in the “Sky Net 2020” campaign.

China has ratified the United Nations Convention on anti-corruption, however, the OECD convention on combating bribery of foreign public officials in international business transactions has not yet been signed

- Strictly and thoroughly punish corruption without any forbidden zones and exceptions

China carries out monitoring and reviewing to find out corrupt individuals in public agencies. The main problem here is that anti-corruption not only focuses on low-level officials, there is no forbidden zone, no exception regardless of who is corrupt. Typically, the campaign “beating tigers and killing flies” started from the 2nd session of the 18th National Party Congress (tiger means big corruption, flies mean minor corruption); this campaign is implemented with the aim of deterring and giving the clearest warning to cadres and party members so that they can be aware of and fearful so as not to be corrupt.

The Criminal Law of China provides for the criminal offense of bribery, including active and passive bribery in both the public and private sectors. In terms of scale, the relatively large bribe is from 30,000 CNY to 200,000 CNY; huge bribes from more than 200,000 CNY to 3 million CNY; especially large is more than 3 million CNY. Penalties for relatively large cases are: imprisonment for up to 3 years and fines; Massive bribery imprisonment from 3 years to 10 years fines and confiscation of property; Particularly large bribes are punishable by imprisonment from 10 years to life or death. In addition, bribes below the “relatively large” threshold are also considered for officials involved in important management or supervision positions or judges. For the criminalization of bribing foreign officials, these bribes can be punishable by imprisonment for up to 10 years and fines. Briberies of relatives or people close to state employees are also criminalized.

Some results of China’s anti-corruption in recent years, specifically:

In 2016, 19 big tigers were convicted, of which Mr. Ton Chinh Tai, the former Politburo member, former Secretary of the Chongqing City Party Committee, the highest-ranking person was sentenced to life in prison for accepting bribes of more than 170 million yuan (about 26 million USD); In 2018, after six years of carrying out Zhi Xi’s anti-corruption campaign, China captured 23 “big tigers” five times more than five years ago. Five big tigers were sentenced to life in prison in 2018 (Ma Jian, former deputy minister of public security; Chen Xu, former chief prosecutor of Shanghai; Wei Danzhou, former vice chairman of the Shaanxi legislature; Yang Chong). Dung - former vice-chairman of the Hebei legislature and 14 other high-ranking officials were sentenced to more than 10 years in prison).

According to a survey by Transparency International (TI), in the eight years of President Xi Jinping's dynasty, two-thirds of Chinese people believe that corruption has decreased in China, 80% of the respondents said that The government has done a good job of preventing and combating corruption.

- *Setting up a strong & powerful monitoring system.*

For judgement of the right person, the right crime, identifying correctly, sufficiently, accurately and timely the briberies and people involved in corruption is a very important task of the Party and State. To do so, it is necessary to have a supervisory system which is strong and empowered enough for the specialized agency to implement and operate effectively without being manipulated by underground forces in the state power apparatus. Therefore, the Chinese government has actively promoted the promulgation of legal documents, the highest being the National Surveillance Law (March 13, 2018)⁽⁸⁾, this is a clear legal basis, firmly for the National Supervisory Commission (NSC). This Super Monitoring Committee is organized from central to local levels; this mandate system covers all agencies of the Party, the State, organizations and the private sector.

Nominally, the National Supervisory Committee is an independent agency directly under the National Assembly on a par with the Government, the Supreme People's Court, and the Supreme People's Procuracy. In essence, this is an agency led by the General Secretary, the President, and directly directed by the Party Central Inspection Committee. Because it is directly led and managed by the Central Inspection Commission, it is often separated from the legislative, executive and judicial systems. Because of such power, the Committee can handle even high-ranking Party and State officials; carry out anti-corruption both large and small according to the campaign "beating tigers and killing flies" in order to eradicate corruption easily.

Second, building a complete and transparent legal policy system

With the view of controlling the power of the leader, China focuses on building a system of policies to prescribe clear and transparent frameworks and regulations to eliminate corruption possibilities, giving the leader no chance of corruption. With the motto of locking power into clear regulations, making it impossible for leading cadres to corrupt through protesting against group interests and transparent disclosure of assets and income.

In order to avoid conflicts of public and private interests, tightening regulations to prevent corruption restricts group interests. One of the examples is the labor recruitment regulations such as no recruitment of relatives and family members to positions of agencies under their charge and leadership. This regulation clearly demonstrates integrity, publicity and transparency in personnel selection. In addition, China also introduced regulations on Party leadership, local governments do not appoint their local people.

For the transparent declaration of incomes and assets of leading cadres, China strictly implements the policy of declaring assets and income for leaders at all levels in the public apparatus and organizations and units using the budget, in order to control assets and annual incomes. With many regulations on rewards and punishments in declarations, state officials do not dare to make false declaration; they are responsible for the transparency of income assets when declaring. An important regulation is that the leader's family members also have to declare assets and incomes. This regulation has limited many cases of income legalization for the purpose of dispersing assets and income when their corruptions are detected. Many leading officials who are subject to corruption hid their corrupted assets which were found in their homes during inspections by government authorities.

Sanctions for commercial bribery related to the sale of goods and services for profit (Anti-Competition Act-AUCL), clearly stipulates that the State Administration of Industry and Trade (SAIC) enforces it and AUCL investigation. In the process of implementing anti-corruption, many agencies also clearly define rules within their agencies through the levels of gifts. Some corrupt practices are also clearly defined in the Anti-Money Laundering Law and the Anti-Money Laundering Regulations related to financial institutions. Although some government agencies can investigate, only the People's Procuracy has the right to prosecute. Corruption in the private sector is often investigated by the Department of Public Security and SAIC. Corruption whistle blowers are protected under the Criminal Procedure Act under the clause on "reporting Crimes to SPP".

Third, Party cadres should be politically and ideologically educated to perfect their personality of "free of corruption".

Humans naturally have both good and bad personalities. In certain situations, one of them will reveal itself. Cadres in general and senior officials in particular are all excellent individuals in the

leadership apparatus of the Party and the State; these people have been carefully selected by many levels of leadership standards. However, at a certain time, the perception was not clear, not stable in the leadership thought, but fell against the political ideology of the Party and the State.

For many years, China has paid great attention to the political and ideological education of its party cadres, especially key cadres and their successors. The educational process is carried out from general education, to professional education and then to lifelong education.

Those who don't want to corrupt are the ones who have been imbued with pure ideas about the ideals of the Party and the State. To do so, it is necessary to strengthen political and ideological education for Party members and cadres and focus on a number of contents⁽¹⁰⁾, specifically:

- Enhancing legal awareness education, education on integrity and professional ethics, and improving Party members' sense of law observance. It is conducted in various forms in Party and administrative training schools, from general education to vocational education, so as to form a new generation of people who are both "pink" and "specialized".

- Supplementing the Party's charter on cultivating morality and lifestyle, supplementing educational content on moral training and behavior of party members in the system of training schools of the Party. Besides, the Party organizations promulgate resolutions and directives related to moral training, manners and taking into account the annual emulation review of party members in the process of striving.

- Integrating the role and qualities of the individual's virtue in the sphere of influence with the family and society, thereby instilling patriotism, love for the people, and a sense of responsibility of party officials in execution of work for the community.

Fourth, there is a policy to take care of the lives of party cadres and members so that they can live on their salary.

In general, corruption is often caused by insufficient income for the living costs of officials and their unstable political ideology. Recently, the Chinese government has implemented many policies related to income such as salary policy, social insurance and health insurance policy, thereby helping cadres feel secure in their work, no need for corruption due to significant gradual changes. However, to do so, it is

not overnight but a tough and difficult battle in the conditions of a cumbersome and overlapping state management system.

The US experience

America's fight against corruption is accomplished through a complex and extensive legal system. Regarding public corruption, there are "RICO Acts" and "Hobbs Acts" that provide for the investigation, prosecution and criminal penalties for acts of public corruption through abuse of position and extortion. Regarding commercial relations, there is the "Act Criminalizing Bribery of United States Officials and Commercial Bribery". Money Laundering is criminalized by the "Money Laundering Control Act". Regarding corruption in the corporate system, there is the "Sarbanes-Oxley Act (SOX)" to ensure the transparency and accuracy of the information disclosed by businesses with a maximum penalty of 10 years in prison in case of corruption. Regarding resource extraction management there is the "Dodd-Frank Act"; However, under President Trump regime, he has mandated that companies must report payments in excess of \$100,000 to the US or foreign government. Concerning public asset management applicable to administrative agencies, the military, and some state-owned companies, there is a "Federal Acquisition Regulation" to prevent corruption risks.

Regarding anti-corruption involved with foreign people, the "Foreign Corrupt Practices Act" (FCPA) was promulgated in 1977, supplemented and amended in 1998 (Pub.L. 105-366 dated 10/11/1998)

The provisions of the FCPA cover two main areas: (1) anti-corruption and (2) transparent implementation of paperwork. The FCPA prohibits U.S. citizens and businesses from offering, soliciting, promising, or actually giving anything of value to a foreign official, foreign political party, in order to obtain or maintain a some benefit. The FCPA's adjustment objects include not only U.S. citizens and businesses, but also „green card“ residents in the country, as well as any companies that operate under U.S. law or companies whose headquarters are based in the U.S.. Since 1998, FCPA has expanded to apply to foreign companies and foreign individuals who commit corruption while in the United States.

The regulated bribes include offering, suggesting, and promising to bribe, not just the act of giving money; the FCPA stipulates that anything, not limited to cash, of value that is used to bribe a foreign official to gain an improper advantage is illegal from

a dynamic perspective. The purpose is not important in terms of quantity.

U.S. Foreign Corrupt Practices Law defines “foreign official” as any official or employee of a foreign government or any of its departments, agencies or organizations, or a public international organization, or any person acting under the authority of or on behalf of any government or department, agency or organization, or on behalf of any public international organization.

The comprehensive solution to anti-corruption in the United States is to build a powerful control mechanism to prevent corruption practices. Through the system of „separation of powers“, the US powerful control mechanism curbs the balance between the legislative, executive and judicial branches of power, political competition between opposing parties; is loyal to social supervision and criticism. With such institutions, power is always limited within the framework of the law, supervised by many different subjects, thereby avoiding the concentration of power which can lead to arbitrary, autocracy and corruption in the exercise of state power.

In order to make the law practically effective, these institutions have created a political environment that allows the judiciary to prosecute corruption subjects, even high-ranking state officials or even foreigners. Thus, even the highest positions in the public system are replaced under the control and supervision of the authorities, namely the judicial system and the anti-corruption agencies.

Singapore’s experience

It is necessary to ensure publicity and transparency, thereby preventing the act of withholding information and taking advantage of unusual relationships between state officials in high positions and businesses for benefits, corruption and bribes. The key point in each plan is that government agencies must ensure the people’s right to access information about government activities and state policies at the highest level. The plan also includes a series of measures to strictly control government spending, clean up election campaigns and political activities.

Singapore has accumulated a lot of experience in detecting, preventing and handling unusual relationships between officials and business owners for benefits, thereby contributing to the prevention and fight against corruption. In the process of development, the government has gradually improved the legal system, improved administration, created conditions

for government agencies to work effectively, thereby improving supervision, reducing opportunities for corruption. Singapore has also deeply and widely applied modern information technology, minimizing the direct contact between the public and potentially corrupt departments by administrative procedures, thereby nullifying the abnormal relationship between people in positions of power and rights and individuals and businesses for personal gain. Singapore’s anti-corruption system works effectively thanks to the strengthening the power of the Anti-Corruption Investigative Body (CIB), which severely punishes abnormal relationships between officials and individuals and businesses for bribery and corruption.

In order to enforce transparency and accountability, Singapore attaches great importance to solutions to prevent abnormal relations between state officials and individuals & businesses for benefits, to implement the “three no” principle, specifically: “no need to corrupt, impossible to corrupt and dare not to corrupt”, by educating political ideology, morality, perfecting the legal system; paying appropriate wages, in accompanied with controlling the income of civil servants, appreciating auditing and inspection, especially regular inspection of politicians.

The Singapore government stipulates that all citizens have the right to access to official information and documents of state agencies from central to local levels. All of these documents must be published publicly in the press and the Internet (except for state confidential documents). Hotlines are set up to receive information on crime in general and corruption in particular; even anonymous denunciations should be considered to detect corruption, in case the law is incomplete and whistleblowers are threatened, the whistleblower must be allowed to remain anonymous and anonymous letters should be accepted.

Civil servants must declare assets, especially civil servants in leadership positions. Their family members, spouses and children also have to both make pre-declaration and post-declaration of assets when being recruited, promoted, elected. At the same time, the result of asset declaration of civil servants is publicly announced, if they can’t make explicit the source of their assets, that property will be confiscated for the state fund.

Currently, Singapore is applying the United Nations Anti-Corruption Convention, according to which all assets corrupted must be confiscated and returned to the country where the property was lost to be returned to its owner or to the state fund and a part

should be spent on joint anti-corruption efforts; a part on the discovery and seizure of such property.

British experience

The UK's most prominent experience in combating crime of foreign corruption is the enactment and implementation of anti-corruption laws with foreign subjects.

The Anti-Bribery Act 2010 of the United Kingdom (original English: "Bribery Act"), passed on April 8, 2010. In section 6, chapter 23, bribes for foreign officials and handling measures are regulated as follows:

First, violation is identified when bribing a person in an executive, administrative or judicial position of any kind (whether appointed or chosen) in a foreign country or territory outside England, or bribing a person who performs a public function on behalf of a territory outside England, or for any public body or enterprise of that country or territory, or an official body of an international public organization.

Second, violation is identified when a person offers, promises to give any benefit to a foreign official as requested or consented, and in the circumstance the written law of the country where the violation occurred does not authorize or require the affected foreign official to exercise his or her powers as a foreign official through the offer, promise or gift. Bribery must be made with the intent to influence foreign officials who have authority as a foreign official and obtain or retain some business or an interest in conduct business.

The above regulations apply to individuals and companies (as required by British Law, in case such acts are caused by individuals who are "mind driven". or spirit of the organization"). These violations also refer to bribery committed within or outside the UK, where individuals or companies have a close relationship with the UK (e.g. companies of the UK, UK partners, UK citizens or habitants in the UK).

Accordingly, individuals involved in any of the above violations may be imprisoned for up to 10 years and/or subject to an unlimited fine. Companies can incur unlimited fines. If a company is found to be in violation, a senior officer of the company (such as a board member, manager, company secretary or similar title) can be imprisoned for up to 10 years and/or subject to an unlimited fine if the court defined that they have "consented or involved in" the violation. It means that it is impossible for the board members to ignore the bribery taking place within their

organization.

Thus, any bribery for foreign officials by British citizens or companies inside or outside the country will be handled in accordance with the provisions of the Anti-Bribery Law mentioned above. Such specific regulations create a legal basis for dealing with corruption (bribery) with foreign elements.

2. World Bank's experience in anti-corruption

The World Bank (WB) has planned an anti-corruption strategy, which prioritizes the fight against poverty on a global scale, raising standards in poverty reduction lending projects. The organization places special emphasis on the role of multinational companies which push up bribery and corruption in poor countries. More than 330 companies have been sanctioned by the World Bank and banned all transactions using their funds⁽¹¹⁾.

At an international conference held in London, England (October 23-25, 2012) on "anti-corruption and bribery to prevent abnormal relations between civil servants, government officials, local governments abroad with businesses for profit", one of the important topics and contents was the exchange of representatives of enterprises around the implementation of anti-corruption and bribery in general, especially experience in anti-corruption and bribery to prevent abnormal relationships between civil servants, government officials, local authorities and businesses for profit. Anti-corruption is reflected in some of the following contents:

Actively prevent and prevent abnormal relations between civil servants, government officials, local authorities abroad and enterprises for profit.

- Enterprises all believe that corruption and bribery cause harms to socio-economic development in general and business activities of enterprises in particular (in some cases, when bribery occurs, enterprises must spend millions of USD to settle), so, it is necessary to have the right awareness so that on the one hand, enterprises voluntarily comply with national and international regulations on prevention and combat of corruption within enterprises; on the other hand, enterprises must take initiative in anti-bribery measures within the enterprise through training, fostering and propagandizing in various appropriate forms for officials and workers of enterprises on anti-corruption and bribery laws to have the right awareness and implementation. At the same time, they should actively cooperate with responsible agencies and organizations in providing

information to serve the investigation, review and handling of corruption and bribery cases without affecting confidential businesses of the enterprise.

- Corruption and bribery not only cause financial damage to enterprises, but also cause difficulties and obstacles for enterprises in the process of production and business; damage the reputation of the business.

- Enterprises need to firmly grasp the law on anti-corruption and bribery to comply well in two aspects: Firstly, not to bribe partners and government officials to facilitate production & trading. Second, grasp the provisions of international law, the law of their own country and the law of the host country (where the investment is made) to proactively take measures to refuse partners, government officials who have relevant when being suggested to bribe so that there will be no cases of corruption or bribery, thereby not causing damage to the business, not taking risks in business, and not letting government officials and partners get involved in corruption cases.

Formulate and organize the implementation of enterprise's anti-corruption and bribery action programs

- Enterprises must have a risk assessment when making an investment. When assessing risks, it is necessary to include the risk of corruption and bribery problems to proactively prevent and help business achieve high results. However, risk assessment is very difficult because it depends on different political regimes (some enterprises have disclosure and transparency of information, but some others don't and depend on different agreements), depending on whether the information is complete or incomplete, so that results of evaluations are much different. Therefore, it is necessary to assess the likely level of risk with business partners of your business to develop criteria to prevent risks, including the risk of corruption and bribery. (If there is a high risk, do not establish a partnership, if there is a medium or low risk, a partnership can be established).

- Enterprises must carefully study the laws of each specific country to make it easier to do business, prevent partners from taking advantage of them for profits, especially paying attention to countries where the law is incomplete, corruption still exists. After establishing a partnership, a risk mitigation solution must be developed, including the establishment of a bribery-related provision and a measure to prevent bribery, the implementation process must review the partner in each stage in terms of specific performance to adjust accordingly on the following grounds:

related to financial issues; the relationship is about to build with the partner; compliance with the agreement between the two parties.

Before investing in any particular field, region or country, each enterprise must conduct specific research and assessment of its partners as well as learn specific laws, customs of that country to have a specific plan to prevent corruption, bribery. This is actually a challenge for businesses if government officials in the host country make a request for bribes in any form, such as gifts, buying plane tickets to entertain officials' families for holidays or purchases, etc. in exchange for licensing investment, production and business; otherwise, they will cause difficulties for businesses in the licensing process. On the other hand, enterprises should also make clever and lawful refusals so that officials cannot make excess extortion, apart from the enterprises' regulations on gifts to officials (especially in countries with a gift-giving culture such as China, Vietnam and some countries in Africa).

There must be a cooperative withdrawal prevention program in the disbursement process between banks to ensure useful withdrawals and prevent illegal withdrawals. To do so, it is necessary to exchange information completely between businesses and banks, helping them to prevent illegal money transfers and withdrawals. They should discuss and agree with each other before cooperation, transaction, negotiation because each country has its own legal regulations. However, it is very difficult to identify clean money without corruption, so it is necessary to have sufficient information to ensure the operation of enterprises.

- The enterprise's Website should be established so that people can access the information to share their ideas for evaluation; to complete the form of exchanged information with customers; Any organization that wants to give a gift must clearly declare the value, type of gift and form of gift; identify which items in the approved list and which are not allowed, to avoid those promulgated in a list of 10 types of inappropriate gifts. The above information should be publicly provided for both giver and receivers of gifts for correct and legal implementation and prevention of violation.

- Enterprises need to proactively plan to develop policies and skills to avoid officials suggesting gift, not only to government officials, officials of partner enterprises, but even officials in the business, especially the head and his assistants.

- Enterprises carry out propaganda programs through events for everyone in the enterprise to better understand the anti-bribery regulations; encourage individuals to report issues related to bribery to raise awareness of anti-bribery in enterprises. Group discussion should be made to analyze policies, consult and dialogue on anti-corruption for members of the enterprise; a survey questionnaire should be given to officials and employees in the enterprise to get their answer, or suitable training courses should be organized. There must be a high consensus from business leaders to officers and employees in the enterprise in the whole system; officials and employees of enterprises need to update the anti-corruption and bribery law for implementation or for sharing ideas about better solutions; leaders and officers and employees of enterprises need to sign a commitment not to involve in corruption and bribery, in which the leader must make an example in implementing the commitment for everyone to follow.

- It is necessary to determine the criteria for gifts and donations suitable for each country and ethnic group in order to carry out the gift giving in accordance with regulations on the following bases: complying with the culture of that country; helping to facilitate the project implementation; based on the enterprise's financial capacity, but not the partner's requirement, depending on the corporate culture in relations with partners, people in the business, and government officials to the extent permitted; consider gifts in specific conditions of enterprises in which country to have appropriate criteria. Some businesses believe that gift giving is inevitable, so there should be a general regulation on the maximum value of gifts without any exceptions, leading to accurate compliance of standard regulations without any exceptions.

- Many businesses admit that, in the process of investment, enterprises have encountered the suggestions of government officials and partners for bribes, their investment production and business are impossible if there are no bribes. This phenomenon is common in underdeveloped and developing countries in Asia and Africa. Therefore, it is necessary to build an environment for production, business, investment and healthy competition among foreign enterprises in the countries where the investment is made; building healthy and goodwill relations between agencies, government officials, local authorities and investors to minimize losses and risks for investors; building the government, public servants with integrity and

purity, preventing corruption, bribes and unhealthy relations between government activities and production and business activities.

Participating in and coordinating in detecting, investigating and handling corruption and bribery cases, preventing abnormal relations between civil servants, government officials, local authorities and enterprises for profit

- Enterprises must research whether their partners have corruption or bribery. Because of the anti-corruption and bribery laws outside the country, it is forbidden to pay foreign officials to gain profits for business activities; it also forbids individuals to intentionally commit acts of bribery, the violated people will be fined and prosecuted. However, this law also has a provision that if an individual still bribes because of the lack of understanding, his or her penalty can be considered to be mitigated.

- Develop and define criteria for crimes against corruption and bribery to know who they are and their motive for crime in order to have a specific coordinated investigation plan.

- When an enterprise has someone accused of corruption or bribery, the enterprise can invite a local lawyer to study and propose measures to protect people of the enterprise.

- Enterprises may also collect information about allegations of workers from various sources, maybe from the direct manager of the alleged worker to both protect the employee as well as protect the business reputation.

- Businesses with an ethics and integrity department should be able to help with investigations directly or indirectly (dialogue or email...). In many cases, the coordination with investigative agencies to help the investigation faces difficulties and obstacles, enterprises must hire a consultant, based on flexible measures of each country, to pursue the investigation of the authorities who are in charge of the corruption and bribery. Some enterprises build up a special fund to pay for participating in investigations and handling lawsuits related to bribery and corruption occurring in the enterprise.

The cooperation of enterprises with the investigation agency of the host country in investigating cases related to corruption and bribery occurring in branches and subsidiaries of enterprises in host countries, especially in China, faced many difficulties and challenges, such as: the long lasted investigation process, sensitive issues

due to non-publicity, and political culture affecting the investigation process.

- Difficulties in protecting business secrets of enterprises, gathering and finding out information, and laws in host countries because the laws of those countries are not perfect, so the coordination of investigating is not easy. Therefore, some businesses have preferential regulations on business security. However, the line between incentives and accountability must be clearly defined. In addition to the State's investigation, enterprises must also actively conduct internal investigations before presenting evidence to the authorities so as not to affect their business secrets.

- Enterprises must be flexible in determining criteria for special incentives and accountability in order to really promote the investigation process to quickly complete the case. Enterprises should have correct awareness and accountability to find evidence for the investigation, without affecting the reputation of the enterprise; must comply with investigations related to allegations of corruption and bribery. In some countries, the human rights issues limit the investigation process, they take advantage of human rights to prevent the investigation process.

- Enterprises also share experiences of coordination to promote a favorable investigation process, either through an investigation agency in the host country or through an independent investigation company to conduct an investigation. It is possible to sign with the investigating authority in the UK to facilitate investigations in Asian countries because these countries have difficulties in terms of different political systems, in sharing evidence, in the complicated system of investigation agencies is, not meeting European standards. With the strong power of state agencies, it is difficult to find out evidence because it is difficult to access. On the other hand, the ideology and national spirit of unacceptance and reaction of Eastern-styled culture leads to lack of cooperation in the investigation process from both government agencies and workers in Asian countries. Therefore, in addition to cooperating with government authorities to investigate, it is also necessary to cooperate with large independent investigative companies to enhance the process of collecting the evidence.

- In fact, it is difficult to access information through the official channel, it is more efficient through the channel of independent investigating company. For countries with a high risk of corruption, the more important is political will, if the leadership in that

country is interested, the investigation is favorable. Countries with widespread corruption, although each country has an anti-corruption agency, but has a kinship relationship, which hinders investigations, while the investigative powers of these agencies are limited, despite the law it is very difficult to prosecute violators.

3. Lessons on anti-corruption for Vietnam

Through learning about anti-corruption of countries and businesses around the world, we see that corruption is a serious problem in many countries, eradicating it is not possible overnight. All countries have a system of anti-corruption policies, which are regularly revised to suit practical conditions and have also achieved considerable results. Through studying international experiences, we can have some lessons for preventing and fighting against corruption as follows:

Firstly, anti-corruption should put an emphasis on prevention.

With good anti-corruption, we can avoid loss of cadres. The elite cadres of the Party and State have been trained for many years to have political moral qualities and are loyal to the ideals of the Party and the State. Prevention of corruption is an important task in order to minimize anti-corruption work and reduce the loss of life and property to the country.

In order to prevent corruption, it is necessary to strengthen propaganda and increase the political education for cadres, party members, key officials and leaders at all levels; upholding the exemplary spirit of party members, the higher the leader, the purer they must be, with the clear motto "clean water upstream", "clean top". The experience of some countries shows that the very purity of the Government cleans up the leadership team of public agencies, a transparent and reliable Government will shape a purified society. Simultaneously, the purity must be accompanied with high political determination in preventing and fighting corruption and turning that determination into concrete actions, first of all by senior leaders who "speak together with action". Senior leaders must be truly exemplary, clean, non-bureaucratic, non-self-serving, pure superiors, and subordinates will take that as an example to follow.

Second, constantly perfect the legal framework on anti-corruption.

Corruption is increasingly sophisticated. Therefore, the legal framework must also be gradually perfected to keep up with the development of

corruption crimes. Legislation for bribery regulation should be strengthened, as this is an important cause of corruption; there is a strict handling mechanism for this behavior due to the extent of damage as well as the degree of self-interest caused by this act. The system of complete, synchronous, transparent, and disclosed policies helps to minimize loopholes in tax law. In particular, there is a Code of Conduct for cadres and civil servants, which clearly stipulates the requirements to be performed and the prohibitions for cadres and civil servants; it is strictly forbidden for leading cadres to take advantage of their positions and unusual relationships with enterprises for their own gain.

- *Third, perfecting regulations on property control and power of cadres, party members and leaders at all levels.*

It is necessary to concretize regulations on functions, duties and powers of officials with positions and powers; minimize the possible corruption acts. Strictly comply with regulations on asset declaration and disclosure of assets by persons with positions and powers. At the same time, handle corruption thoroughly and completely. During the implementation, there is no boundary along with strict and tough measures to act as a deterrent. Anti-corruption deals with both large and small corruption cases without omitting any criminal, handling the right people with the right crime and without any boundary.

- *Fourth, in order to make anti-corruption work effective, these anti-corruption agencies must be independent and politically powerful.*

In order to enhance the responsibility, the role of anti-corruption agencies, to help them to handle corruption cases without any boundary, these agencies must have strong and legal powers promulgated by the law. They can perform the function of monitoring, investigating and prosecuting any corruption criminal. However, due to sophisticated and complex corruption, especially political corruption, anti-corruption agencies must have their own independent and transparent operating mechanism.

- *Fifth, international cooperation in anti-corruption should be strengthened*

In the context of globalization, the free flow of capital and the expansion of migration policies between countries are the cause of cross-border corruption, creating conditions for corruption criminals, especially officials to evade its own laws

and finds a haven in which corruption acts are more slightly punished. Therefore, in order to both strictly handle corruption acts and confiscate the corrupted assets, almost all countries in the world have issued regulations on crime prevention and control involving foreign elements, extradition agreements, signing of bilateral and multilateral agreements on judicial cooperation, mutual legal assistance, etc.

- *Sixth, implementing the principle of publicity and transparency, under the supervision of the public.*

International experience shows that many activities of the state and leading cadres are required to transparently disclose their assets and income; Many countries also require transparency in the assets and income declaration of family members in order to minimize corruption via requests for disclosure of financial statements, procurement of public assets, disclosure of personal property & income before and after their appointment.

At the same time, media agencies also give a great contribution to anti-corruption. It is necessary to combine the detection of corruption behavior by government agencies with the public discovery of anti-corruption; to perfect the legal framework and mechanisms to protect whistleblowers and reflectors of corruption. Adequate remuneration are prioritized for leading cadres in combination with training and fostering political ideology to be firm against the temptations of life so that they never want and need to corrupt.

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THE FINANCIAL CONTAGION EFFECTS OF THE COVID-19 PANDEMIC: EVIDENCE FROM ASIAN DEVELOPED COUNTRIES

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Abstract: *This study investigates the existence and extent of the effect of financial contagion between the Asian developed stock market and the Bitcoin market, as well as between these stock markets and the gold market, during the global Covid-19 period. The time-varying correlation coefficients of DCC-GARCH were tested using daily data from 2016 to 2021. The empirical results show that, with the exception of Japan, the dynamic correlation between stocks and Bitcoin increased significantly during the Covid-19 turmoil period in four developed Asian countries, while the DCCs between stocks and gold increased significantly in three countries, including Japan, Korea and Taiwan, indicating that the global Covid-19 pandemic caused financial contagion in the form of a shift in dynamic correlation between stocks and Bitcoin a, as well as between stocks and gold in these countries. However, the magnitude of the increase in DCCs was greater for the stock-Bitcoin pair than for the stock-gold pair, implying that Bitcoin plays a more important role in financial contagion transmission than gold and that gold has a greater potential to be considered as a hedge or safe haven tool for Asian developed stock investors in the light of this rapidly escalating pandemic.*

• Keywords: contagion, cryptocurrency, gold, covid-19.

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Tóm tắt: Nghiên cứu này điều tra sự tồn tại và mức độ ảnh hưởng của sự lây lan tài chính giữa thị trường chứng khoán phát triển châu Á và thị trường Bitcoin, cũng như giữa các thị trường chứng khoán này và thị trường vàng, trong suốt thời kỳ Covid-19 toàn cầu. Hệ số tương quan thay đổi theo thời gian của DCC-GARCH đã được kiểm tra bằng cách sử dụng dữ liệu hàng ngày từ năm 2016 đến năm 2021. Kết quả thực nghiệm cho thấy, ngoại trừ Nhật Bản, mối tương quan động giữa cổ phiếu và Bitcoin đã tăng đáng kể trong thời kỳ dịch Covid-19 trong 4 nước châu Á phát triển, trong khi DCC giữa chứng khoán và vàng tăng đáng kể ở ba quốc gia, bao gồm Nhật Bản, Hàn Quốc và Đài Loan, cho thấy rằng đại dịch Covid-19 toàn cầu đã gây ra sự lây lan tài chính dưới dạng sự thay đổi tương quan động giữa chứng khoán và Bitcoin, cũng như giữa chứng khoán và vàng ở các nước này. Tuy nhiên, mức độ gia tăng của DCC đối với cặp chứng khoán-Bitcoin lớn hơn đối với cặp chứng khoán-vàng, ngụ ý rằng Bitcoin đóng một vai trò quan trọng hơn trong việc truyền lây lan tài chính so với vàng và vàng có tiềm năng lớn hơn được coi là một công cụ phòng hộ hoặc trú ẩn an toàn cho các nhà đầu tư chứng khoán phát triển ở Châu Á trong bối cảnh đại dịch đang leo thang nhanh chóng này.

• Từ khóa: sự lây lan, tiền điện tử, vàng, covid-19.

1. Introduction

Today, many investors are always looking for strategies to diversify their portfolios in order to protect their investments from market hazards. Most assets are influenced in some way by market shocks such as crises, epidemics, etc. Some investors are gravitating toward safer assets, namely, they move from risky assets to safer assets (Caballero & Krishnamurthy, 2008). Furthermore, gold has long been regarded a secure and effective asset in the stock market, particularly during times of market volatility (Baur & Lucey, 2010; Beckmann, Berger & Czudaj, 2015; Wen & Cheng, 2018). Historically, gold has been used as a hedge in portfolio diversification and as a safe haven during times of severe economic and financial instability (Baur et al., 2010; Bredin et al., 2015; O'Connor et al., 2015; Lucey et al., 2017; Bilgin et al., 2018). It is reasonably stable during deflationary or deflationary periods, and it has the potential for diversification during periods of inflation, as assessed by the Consumer Price Index (CPI) (Baur et al., 2010a; Bredin et al., 2010a; Bredin et al., 2015).

Another appealing asset is Bitcoin, a completely decentralized cryptocurrency that is not dependent on any government or authority and can be

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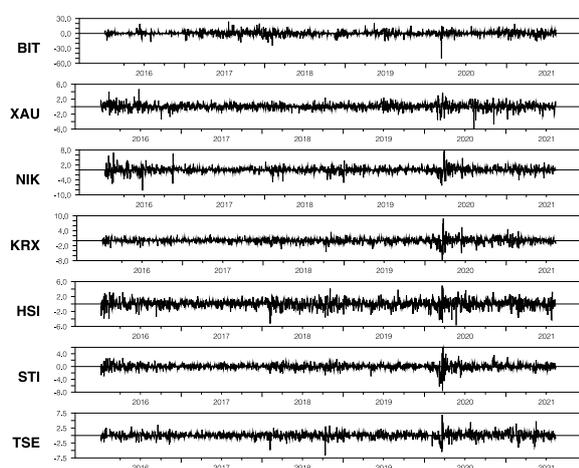
exchanged anonymously through a third party, such as a digital wallet (Urquhart et al., 2016; Nadarajah et al., 2017). Bitcoin was mentioned in the prospectus for a peer-to-peer payment protocol by anonymous Satoshi Nakamoto in 2008, and it began to be used as a means of transaction and an alternative to cash on January 3, 2009. Relying on the blockchain and its application to Bitcoin makes it the first digital currency to solve the problem of double spending and make it safer. Although its returns are often accompanied by significant fluctuations, Bitcoin has become an investment asset due to its tradability on specialized exchanges (Polasik, Piotrowska, Wisniewski, Kotkowski & Lightfoot, 2015). According to the literature, Bitcoin has a relatively weak link to traditional assets, making it an effective diversifier, as well as a somewhat unconnected relationship to other assets, making Bitcoin an ideal hedging tool. Bitcoin is also a highly stable asset, making it appealing to investors looking for a safe haven. Bitcoin is viewed as a “safe haven asset” that helps hedge against global economic volatility (Bouri et al., 2017a; Aysan, Demir, Gozgor, & Lau, 2018; Bouri, Molnar, Azzi, Roubaud & Hagfors, 2017; Shahzad et al., 2019). It has provided investors with resilience during times of crisis. In the study by Luther and Salter (2017) in Cyprus, this point was proved in the context of the banking crisis in the period 2012–2013 and the European public debt crisis 2010–2013. However, Conlon, Corbet, & McGee, 2020; Klein, Autumn, & Walther, 2018; Smales, 2019; have another study that gives the opposite opinion. With the advent of Bitcoin, the virtual currency has moved from the periphery to the center of the financial world. The CME Group and CBOE released futures contracts that use Bitcoin as an underlying asset in December 2017, further confirming it. This has enabled Bitcoin to trade alongside commodities such as gold in futures markets, eventually becoming a mainstream investment alternative. The Bitcoin literature will occasionally incorporate gold and other commodities into its empirical research, with the aim of examining the link between gold and Bitcoin. Bitcoin values are determined by a unique set of qualities such as appeal (Kristoufek, 2015), user anonymity (Ober, Katzenbeisser, & Hamacher, 2013), or unlawful activities (Yelowitz & Wilson, 2015). On the one hand, Bitcoin’s allure may be tied to its monetary properties. Although gold differs from bitcoin in many respects, there are similarities between the two assets. The absence of a central

authority to control Bitcoin mining and transactions makes it independent of inflation (Baur et al., 2018). Bitcoin and other cryptocurrencies are separate from financial and economic assets. It is unknown if Bitcoin and gold (commodities) play similar safe-haven roles in a sample of global and national stock market indexes.

As corporate investors became increasingly concerned about the accumulation of corporate debt and the considerable liquidity shortfall that had developed, the Covid-19 pandemic transformed into an economic crisis magnified through financial channels through a whipsaw pattern (Ramelli & Wagner, 2020). Following the huge worldwide impact of the Covid-19 pandemic, literature on the impact of the Covid-19 pandemic on the financial market (Cepoi, 2020; Le et al., 2021; Okorie & Lin, 2021; Yarovaya et al., 2021), its contagion effect (Akhtaruzzaman, Boubaker, & Sensoy, 2021; Corbet et al., 2020, 2021) or safe haven properties of financial assets like gold or cryptocurrencies during this crisis time (Akhtaruzzaman, Boubaker, Lucey, et al., 2021; Conlon & McGee, 2020) has started to grow rapidly. In this study, we follow the definition of ‘shift contagion’ proposed by Forbes & Rigobon (2001), that is, a shift contagion is a significant increase in correlation between two markets followed by a crisis in one market, to examine the existence of the financial contagion effect in terms of a change in dynamic correlation between the Asian developed stock market and Bitcoin, as well as between these stock markets and the gold market, during the Covid-19 period. Using daily data from January 2016 to August 2021, the DCC-GARCH model was used to test for a significant change in dynamic correlation for Bitcoin-stock and gold-stock pairs during the global Covid-19 pandemic. Our findings indicate that the dynamic correlation between stock and Bitcoin increased significantly during the Covid-19 turmoil period in four Asian developed countries, except Japan and the DCCs between stock and gold increased significantly in three countries including Japan, Korea, and Taiwan. Thus, the global Covid-19 pandemic has caused a financial contagion effect in terms of a shift in dynamic correlation between stock and Bitcoin as well as between stock and gold in these countries. However, the magnitude of the increase in DCC was greater for the pair of stock and Bitcoin than for the pair of stock and gold, implying that Bitcoin plays a more important role in financial contagion transmission than gold and that gold has a greater

potential to be considered as a hedge or safe haven tool for Asian-developed stock investors during the Covid period.

Figure 1: Bitcoin, gold and Asian developed stock return over the period 2016-2021



This study is presented as follows. Section 2 presents a review of the literature. Section 3 delves into our empirical models. Section 4 presents the empirical result and discussion. Finally, Section 5 presents our conclusions.

2. Literature review

In the past, gold was seen as a safe haven, whereas other asset classes were frequently volatile. Furthermore, gold is used as a hedge or diversification for other financial assets such as equities or foreign currencies. This is evidenced by the fact that gold is not correlated or adversely connected with various asset types (Bouri et al., 2020; Reboredo, 2013; Baur & Lucey, 2010). According to Baur et al. (2010), gold is seen as a safe haven asset in financial markets and may be utilized as a store of value during times of financial instability. Baur and Lucey (2010) established the definition of a safe haven in their study. Based on Baur and McDermott (2010) research, gold has adequate foundations to fulfill the character of a safe-haven asset for stock investors in Europe and America in the short term. However, Australia, Canada, Japan, and emerging countries have yet to benefit from a safe haven and hedging asset. Ciner et al. (2013) investigated the amount and condition of each asset, including stocks, bonds, oil, gold, and the US dollar. The findings demonstrate that, with the exception of oil, gold acts as a safe haven for most assets. Furthermore, Anand & Madhogaria (2012) validated the gold safe-haven hypothesis by examining the causal association between gold and stock market returns in six nations

and concluded that gold does indeed act as a safe-haven asset. Joy (2011), on the other hand, used the GARCH model multivariable with dynamic conditional correlation to examine the exchange rates of sixteen currencies against the US dollar as well as the price of gold during 23 years. According to the author, gold functions as a hedge against the US currency and is a less secure refuge. Similarly, Dee et al. (2013) study whether gold may be used as a security or as a hedge against inflation in the Chinese mainland market. According to empirical evidence, gold does not protect short-term investors from inflation and equity risks. If an investor retains gold for an extended period of time, it can serve as a reliable hedge against the stock market or inflation. However, gold is hardly a safe haven for investors in China's capital markets, which are already fraught with equities and inflation concerns. According to Theo Dee et al. (2013), investors should not pursue gold mindlessly.

Since the inception of Bitcoin, there have been a variety of perspectives on Bitcoin as a fantastic solution (Bouri et al., 2017; Luther & Salter, 2017). Several investigations have been conducted to investigate the attractiveness of Bitcoin and its hedging property. Its dangers are comparable to those described by Dyhrberg (2016), and as a result, Bitcoin can be incorporated into a portfolio to reduce risk. Baur et al. (2015) evaluated the properties of Bitcoin and found correlations. There is no significant difference between digital assets (Bitcoin) and traditional asset classes such as stocks, bonds, and commodities in normal times and in turbulent financial times. This analysis shows whether Bitcoin can act as a hedge and a safe-haven investment for the US stock market, showing that Bitcoin's role as a hedge and a safe-haven is time-varying. Furthermore, Bouri et al. (2017a) evaluated the role of Bitcoin as a diversifier, a hedge, or a safe haven for the movement of energy derivatives but not for non-energy commodities. They realize that Bitcoin may be used as an effective hedge and a safe haven against swings in commodity indices but not in non-energy commodities. Other studies on cryptocurrencies, particularly Bitcoin, have yielded conflicting results. For example, Klein et al. (2018) and Smales (2019), for example, contend that Bitcoin fails as both a hedge and a safe haven for developed markets. In Covid-19, Cheema et al. (2020), Conlon & McGee (2020), and Conlon et al. (2020) found equivalent results. According to Wu et al. (2019), their article uses the GARCH model to

investigate whether gold or Bitcoin may operate as a hedge for economic policy uncertainty. The impact of gold and Bitcoin on an investor's portfolio is correlated with a bear or bullish market situation, and these two assets can be considered for portfolio diversification in the normal market. Bitcoin is more responsive to shocks of economic policy uncertainty and gold maintains stability with smaller safe-haven and hedge coefficients. Their results suggest that Bitcoin could be a gold-like alternative to hedging against uncertainty, which is partially consistent with Bouri et al. (2017) and Demir & Wang (2018). Stenss et al. (2019) investigated the diversification, hedging and safe-haven capabilities of Bitcoin in financial markets in different markets and regions. Regarding Bitcoin's ability as a hedge, the article finds evidence of differences between developed and developing markets regarding Bitcoin's ability as a hedge. In the study by Bouri et al., in 2020, the dependence of Bitcoin, gold, commodities, and the stock market on the US stock market was not so strong. The ranking of Bitcoin as the least dependent and most dependent commodity emerges clearly, even though they are all highly correlated. Selmi et al. (2018) said that the outcomes of Bitcoin and gold can act as a hedge, a safe haven, and a deterrent against oil price swings. The relationship between Bitcoin/gold and oil prices appears to be nonlinear. The global Covid-19 pandemic is one of the recent crises that has affected the crude oil and stock markets around the world. To protect investors from such catastrophic losses, it is necessary to reassess the safe haven ability of traditional assets, namely gold.

According to Manohar et al. (2021), the article was driven by a large body of previous work. The cross-quantum histogram approach of Han et al. (2016) was used for tail analysis in this work. By examining possible variability across a wide range of quanta, the analytical approach allows complete monitoring of safe-haven assets. Daily statistics on energy and gold sector indices of a variety of nations strategically tied to significant commodities, such as gold and oil, and also heavily influenced by Covid-19, have been of interest. According to Manohar et al. (2021), the findings show that, prior to the Covid crisis, gold was no longer a safe haven or hedge against a specific cluster of nations' energy sector indices. Saudi Arabia, Russia, and Canada are among the largest oil exporters and the energy industry contributes significantly to their profits. Due to the obvious Covid-19 pandemic, these

nations' energy industries have been seriously hit, and investors have turned to gold, the traditional safe-haven alternative. Melki et al. (2022) compare the hedging and safe-haven features of three cryptocurrency giants, Bitcoin, Ethereum, and Ripple, to the stock, forex, and commodities markets. Using a quadratic LSTR model, the Covid-19 inquiry provides an early testing ground for crypto's safe-haven features. The authors demonstrate that Ripple is considered a weak safe-haven asset for the commodity and forex markets in times of pandemic crisis. For the commodity and forex markets, Bitcoin and Ripple provide a safe haven and a hedge function, respectively. The behavior of Ethereum was an unexpected discovery. During both the pre-crisis and Covid-19 periods, the coin outperformed Bitcoin by providing a stronger safe haven for commodity markets.

3. Data and Methodology

3.1. Data

The DCC-GARCH model was estimated for the largest market capitalizations of cryptocurrencies, namely Bitcoin; and 5 Asian developed stock indices: South Korea (KRX 100), Hong Kong (HSI), Japan (NIK), Singapore (STI) and Taiwan (TSE 50). The daily price of Bitcoin and Ethereum has been collected from the website www.CryptoDataDownload.com. This website provides historical time series data for traded prices using the Application Programming Interface (API) service. We choose five main cryptocurrency exchanges, including Bitstamp, Gemini, Poloniex, Bitfinex, and Binance, which are common exchanges for the two cryptocurrencies under consideration. We then computed the market capital-weighted indices of Bitcoin and Ethereum based on the five exchanges. Data on Asian stock indices were obtained from Investing (2021). In order to control for the (possibly) distorting effects of the common currency denomination of stock market indices, Bitcoin, and gold prices, we have used the local currency-denominated price to calculate the daily return of stock indices and the USD-denominated price series to calculate the daily return of Bitcoin. From the daily closing price, we calculate the daily returns as natural logarithmic price differences. Since cryptocurrencies are traded 7 days a week, we only consider the price of cryptocurrencies during the week to synchronize our data set.

The sample period spans from 4 January 2016 to 13 August 2021, thus yielding 1463 daily

observations. Our sample periods cover both the pre-Covid-19 period (1 January 2016 to 29 January 2020) and the Covid-19 period (30 January 2020 to 13 August 2021). We choose 30 January 2020 as the first day for Covid period because WHO declares the novel coronavirus outbreak a public health emergency of international concern (PHEIC), which is the highest level of alarm of WHO. The turbulence dummy variable was created to capture the impact of the Covid-19 pandemic on the return and the spillover of volatility between the Asian stock market and the cryptocurrency market. To be more specific, a DCOV dummy is constructed for days after the Covid-19 arrival date in each country.

Table 1: Variable Definition

Variable	Description
RBIT	Bitcoin log returns
RETH	Ethereum log returns
RNIK	NIK log returns (Japan)
RKRX	KRX 100 log returns (South Korea)
RHSI	HSI log returns (Hong Kong)
RSTI	STI log returns (Singapore)
RTSE	TSE 50 log returns (Taiwan)
COVID	Dummy variable for the Covid-19 period in country. It takes the value of 1 for the period from 30 January 2020 to 13 August 2021.

Notes: The data cover the period from 4 January 2016 to 13 August 2021.

3.2. Methodology approach

We employ the DCC-GARCH approach proposed by Engle (2002) to examine the time-varying and dynamic relationships across return series. The DCC representation of GARCH model is used to parameterize the conditional correlation directly and has the flexibility of a univariate GARCH model (Engle, 2002). For the purpose of this study that is investigating the dynamic cross correlation and given the large number of return series, the DCC model is estimated for each pair of return series separately.

The estimation of the bivariate GARCH-DCC model is carried out in two steps. In the first step, the univariate GARCH (1,1) model is estimated. In the second step. The time-varying correlation matrix is computed using the standardized residuals of the first-step estimate.

The mean equation of the DCC-GARCH model is as follows:

$$r_t = \mu_t + \omega r_{t-1} + \varepsilon_t \quad (1)$$

$$\varepsilon_t = H_t^{1/2} \eta_t \quad (2)$$

Where r_t is a logarithmic difference matrix for price indexes, μ_t is a fixed parameter matrix, ω is a coefficient matrix of cross-mean transmission and own-lagged, η_t is a innovation matrix, ε_t is a vector of residuals and $H_t^{1/2}$ is the conditional volatility matrix. The variance equation is expressed as:

$$H_t = c + \alpha \varepsilon_{t-1}^2 + \beta H_{t-1}$$

Where c is the constant, α is the parameter which captures the ARCH effect or the short-run persistence and β represents the GARCH effect or the long-run persistence of volatility.

The equation of DCC (1,1) equation is given by Q_t , which is the time-varying conditional correlation of the residuals. Q_t is specified as:

$$Q_t = (1 - \alpha - \beta) \bar{Q} + \alpha \varepsilon_{t-1} \varepsilon_{t-1}' + \beta Q_{t-1} \quad (3)$$

Where α and β are parameters that represents the effects of previous shocks and previous DCCs on the current DCC respectively. α and β are non-negative scalar parameters with $\alpha + \beta < 1$. Q is the unconditional correlation matrix of the standardized residuals ε_t .

The conditional correlation between assets i and j is represented as:

$$\rho_{ij,t} = \frac{q_{ij,t}}{(\sqrt{q_{ii,t}} \sqrt{q_{jj,t}})} \quad (4)$$

To ensure that the DCC model is well fitted, the existence of autocorrelation and heteroskedasticity in the return series will be examined through diagnostic tests.

According to Forbes & Rigobon (2002), a tranquil period is the period of relative market stability, and a turmoil period is a period directly after a shock or crisis. We follow their definition and define the turmoil period as the Covid period, whereas the tranquil period is pre-Covid period. To examine the contagion effect between stocks and Bitcoin as well as between stocks and gold during Covid-19 pandemic, we used t tests to evaluate whether there is a significant increase in the dynamic correlation between stock and gold/bitcoin during this pandemic period as follows:

$$H_0: \rho_c = \rho_{nc}$$

$$H_1: \rho_c > \rho_{nc}$$

Where ρ_c denotes the dynamic correlation between stock and gold/bitcoin during crisis period and ρ_{nc} refers to the dynamic correlation between stock and gold/bitcoin during the tranquil period. If the null hypothesis is not rejected, we are convinced that there is no contagion, only interdependence.

4. Result and Discussion

Table 2: Summary statistics of daily return (Full sample)

	Obs	Mean	Standard Deviation	Min	Max	Skewness	Kurtosis	Jarque-Bera
RBIT	1464	0.321	4.758	-50.423	23.812	-0.857	11.472	8206.700
RXAU	1464	0.034	0.857	-5.893	4.693	-0.362	4.463	1246.752
RNIK	1464	0.028	1.238	-8.253	7.731	-0.210	6.572	2645.400
RKRX	1464	0.038	1.071	-7.925	8.868	-0.086	9.462	5463.200
RHSI	1464	0.015	1.137	-5.720	4.925	-0.453	2.402	402.100
RSTI	1464	0.008	0.904	-7.637	5.895	-0.519	9.943	6095.773
RTSE	1464	0.056	1.019	-6.637	6.943	-0.245	5.357	1765.200

The time series of the dynamic conditional correlation coefficients ($\rho_{ij,t}$) between the pair of Bitcoin and Asian developed stock and the pair of Gold and Asian developed stock during the period from 2016 to 2021 are extracted from the DCC-GARCH model and graphed in Figure 2 and Figure 3 respectively. These figures show that the dynamic correlation between stock and Bitcoin, as well as between stock and gold, vary over time. The sign of the correlation coefficients between stock and Bitcoin is primarily negative for the Japanese and Singapore equity markets and positive for the Korean, Hong Kong and Taiwan markets, indicating that Bitcoin could be used as a portfolio hedge in these three countries. Almost throughout the sample period, the DCCs between gold and stock returns in Japan, Hong Kong and Singapore are negative, indicating that gold may be a hedge for these equity indices, whereas the DCCs between gold and stock returns in Korea and Taiwan are positive, indicating that gold is neither a hedge nor a safe haven asset, but rather a diversifier. The extent of the negativity/positiveness and variability of the correlation coefficients is distinct for each asset pair. It should be noted that the dynamic correlation of almost all asset pairs considered shows a significant variation during the Covid-19 pandemic. Some of them have increased while others have decreased.

Figure 2: Dynamic Conditional Correlations Between Bitcoin and Stock

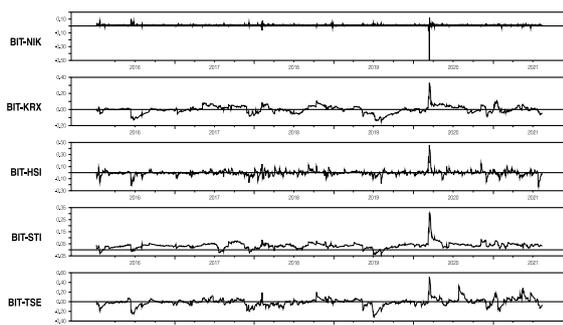


Figure 3: Dynamic Conditional Correlations Between Gold and Stock

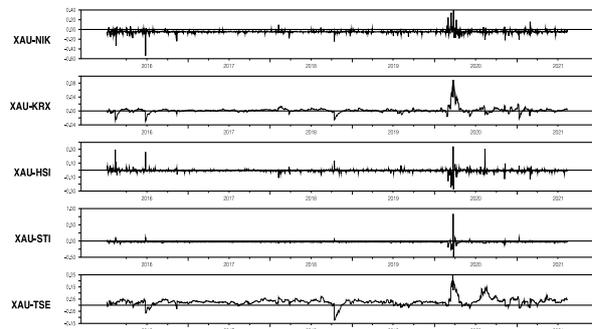


Table 3: Parameter estimates for the mean and variance equations of the DCC-GARCH model for the Bitcoin-stock pair

Variable	Japan	Korea	Hong Kong	Singapore	Taiwan
Mean Model(RBIT)					
Constant	0.315***	0.311***	0.327***	0.324***	0.322***
RBIT{1}	-0.000	-0.004	-0.009	-0.005	-0.011
RNIK{1}	0.094	0.185*	0.017	0.098	0.131
Mean Model(RNIK)					
Constant	0.058**	0.035	0.030	0.021	0.075***
RBIT{1}	0.020***	0.009**	0.013***	0.009**	0.010**
RNIK{1}	-0.049*	-0.017	0.004	0.025	0.005
Conditional variance equation					
C(1)	1.376***	1.373***	1.362***	1.365***	1.363***
C(2)	0.076***	0.027***	0.018***	0.031***	0.054***
A(1)	0.155***	0.161***	0.153***	0.157***	0.155***
A(2)	0.123***	0.076***	0.048***	0.113***	0.088***
B(1)	0.804***	0.800***	0.806***	0.804***	0.805***
B(2)	0.822***	0.893***	0.937***	0.839***	0.856***
DCC(A)	-0.006***	0.013	0.028	0.007	0.027**
DCC(B)	-0.001	0.956***	0.734***	0.934***	0.909***
Q test	33.29194	53.40265	43.70081	52.22994	39.46304
Sign Q test	0.35626	0.00745	0.06474	0.00991	0.1416
ARCH test	6.08	4.74	3.17	4.51	6.9
Sign ARCH test	0.73151	0.85672	0.95721	0.87463	0.64744
Observation	1463	1463	1463	1463	1463

Note: This table reports the estimates of the DCC-GARCH model for the pair of Bitcoin and Asian developed stock return. ***, ** and * indicate statistical significance at the level of 1%, 5%, and 10%, respectively.

Table 4: Parameter estimates for the mean and variance equations of the DCC-GARCH model for gold-stock pair

Variable	Japan	Korea	Hong Kong	Singapore	Taiwan
Mean Model(RXAU)					
Constant	0.029	0.017	0.024	0.016	0.017
RXAU{1}	-0.010	0.008	0.014	0.015	0.006
RNIK{1}	-0.041**	0.005	0.009	0.007	0.006
Mean Model(RNIK)					
Constant	0.071**	0.038*	0.008	0.027	0.075***

Variable	Japan	Korea	Hong Kong	Singapore	Taiwan
RXAU{1}	-0.124***	0.047*	0.068**	-0.003	0.051*
RNIK{1}	-0.049*	-0.019	-0.020	0.030	0.001
Conditional Variance Equation					
C(1)	0.013***	0.009*	0.010***	0.010*	0.009*
C(2)	0.043***	0.026***	0.019***	0.031***	0.050***
A(1)	0.062***	0.045***	0.046***	0.047***	0.045***
A(2)	0.101***	0.075***	0.050***	0.111***	0.083***
B(1)	0.920***	0.941***	0.939***	0.938***	0.941***
B(2)	0.870***	0.895***	0.934***	0.841***	0.866***
DCC(A)	0.028*	0.002	-0.014**	-0.009***	0.008
DCC(B)	-0.050	0.884***	-0.050	0.531**	0.915***
Q test	27.24568	39.70099	35.64227	38.88733	31.78824
Sign Q test	0.65978	0.13592	0.25906	0.1561	0.42705
ARCH test	13.21	5.75	3.28	11.16	4.68
Sign ARCH test	0.15326	0.76488	0.95223	0.2648	0.86128
Observation	1463	1463	1463	1463	1463

Note: This table reports the estimates of the DCC-GARCH model for the pair of gold and Asian developed stock return. ***, ** and * indicate statistical significance at the level of 1%, 5%, and 10%, respectively.

Table 5: DCCs between Bitcoin and stock (Panel A) and gold and Stock (Panel B)

	Japan	Korea	Hong Kong	Singapore	Taiwan
Panel A: BIT-STOCK					
Mean DCC in tranquil period	0.0158	-0.0061	-0.0073	0.0295	-0.0219
Mean DCC in turmoil period	0.0137	0.0151	0.0011	0.0489	0.0330
Difference in Mean DCC	-0.0021	0.0211	0.0084	0.0193	0.0549
Reject Ho:		***	***	***	***
Panel B: XAU-STOCK					
Mean DCC in tranquil period	-0.0491	0.0006	-0.0049	-0.0307	0.0229
Mean DCC in turmoil period	-0.0432	0.0043	-0.0078	-0.0342	0.0420
Difference in Mean DCC	0.0059	0.0037	-0.0030	-0.0035	0.0191
Reject Ho:	***	***			***

Note: The difference is calculated from the mean of the turbulent period minus the mean of the tranquil period.

DCCs between Bitcoin and Asian advanced stock indices are higher during the Covid-19 turmoil period compared to those during the preCovid-19 period, except for the case of Japan (Panel A_ Table 5). The difference in DCCs between the turmoil and the calm period varies between countries. The Taiwanese equity market exhibits the highest difference in mean DCC (0.0549) with Bitcoin, while the lowest difference in mean DCC is recorded in Japan (-0.0021). The T test rejects the null hypothesis that there is no difference in DCC between stock and Bitcoin in the tranquil period and these DCCs in the Covid-19 period in Korea, Hong

Kong, Singapore, and Taiwan at the 1% significance level. The results of a higher dynamic correlation between Bitcoin and the traditional equity market during the turbulent period are consistent with previous studies in the context of the global Covid-19 pandemic (Akhtaruzzaman, Boubaker, & Sensoy, 2021; Nguyen et al., 2021) or other crisis periods (Bouri, Molnár et al., 2017; Klein et al., 2018; Park & Song, 2001). As a result, our findings not only confirm the existence of financial contagion between stocks and Bitcoin in four out of five Asian developed countries during the Covid-19 period, but also show that the degree of contagion varies between countries, thus supporting the finding of Corbet et al. (2020); Goodell & Goutte (2021); Huang et al. (2021). Evidence suggests that investors, financial advisors, or portfolio managers who own Bitcoin and Asian developed stocks should be particularly cautious due to the potential for greater systematic risk caused by the global Covid-19 pandemic.

When considering the cross-linkage between gold and Asian advanced stock indices (Panel B_ Table 5), the DCCs between gold and stock in Japan, Korea and Taiwan increased, while the DCCs between gold and stock in Hong Kong and Singapore decreased during the Covid-19 pandemic period compared to those during the tranquil period. To be more specific, the DCCs between gold and Hong Kong (Singapore) decreased from -0.0049 (-0.0307) in the pre-Covid-19 period to -0.0078 (-0.0342) in the pandemic period. During this rapidly escalating pandemic, the negative and decreased dynamic correlation suggests that gold has greater potential as a safe haven against the Hong Kong and Singapore equity markets. However, in the case of Japan, Korea and Taiwan, the T-test on the hypothesis of whether there is a significant increase in the dynamic correlation between stock and gold during this pandemic period was rejected at the 1% significance. This finding suggests that the Covid-19 pandemic caused a financial contagion effect between the gold and stock markets in Japan, Korea and Taiwan. However, the level of contagion in the gold and stock markets during the Covid-19 period is lower than that in Bitcoin and the stock market. Furthermore, with the exception of Taiwan, the mean DCCs between stocks and gold are lower than those between stocks and Bitcoin, despite the fact that the DCCs between stocks and gold increased during the Covid period in some countries. This implies that, compared to Bitcoin, gold can provide a better hedge and safe haven for developed Asian

equity markets. These findings are in line with Klein et al. (2018); Kumar & Padakandla (2022); Wu et al. (2019) who also point out that gold provides more hedge and safe haven properties for stock compared to cryptocurrencies. Our finding also corroborate previous studies on the contagion effect between gold and stock market during various turmoil periods (Zhang & Wang, 2021).

5. Conclusions

This study analyzes the existence of the financial contagion effect of the global Covid-19 pandemic exists between the Asian developed equity market and the Bitcoin market, as well as between these stock markets and the gold market. The empirical results show that dynamic correlation between stock and Bitcoin increased significantly during the Covid-19 turmoil period in four Asian developed countries, except Japan, whereas the DCCs between stock and gold increased significantly in three countries including Japan, Korea, and Taiwan, thus indicating that the global Covid-19 pandemic has caused financial contagion effect in terms of a shift in dynamic correlation between stock and Bitcoin, as well as between stock and gold in these countries. However, the magnitude of the increase in DCC was greater for the pair of stock and Bitcoin than for the pair of stock and gold, implying that Bitcoin plays a more important role in financial contagion transmission than gold and that gold has a greater potential to be considered as a hedge or safe haven tool for Asian-developed stock investors during the Covid period. These findings may be of interest to market participants, policymakers, regulators, and practitioners interested in understanding how financial markets shape and change during the global Covid-19 pandemic and recognising the possibility of increased systematic risk in Bitcoin, gold, and Asian developed stock markets during this period of high uncertainty.

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