Panel 24 : Education in Humanities and Social Sciences

Effectiveness Beta Wave in Literacy on the Concentration Learning of Pupils in Level One Primary School

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Abstract

The purpose of this study is to determine the effects of Beta wave in literacy to the achievement concentration on learning cognitive strength of pupils with learning disabilities in level one of Malaysian primary school. This research designed using Quasi-experimental method. There were 31 respondents selected as the study sample in *Sekolah Jenis Kebangsaan Cina* (SJKC) in Perlis, one of the northen state in North Malaysia. This study with 31 respondents was treated with intervention of Simulation Beta Wave with 20Hz for a period of four weeks and without any controlled sample treatment group . A cognitive test with power-mind equiment was used to collect data after the study intervention was done. Amidst that, the pre-test and post-test achievement tests were conducted to evaluate the effectiveness of Beta wave with 20Hz intervention. The findings of this study will be analyzed using SPSS 22 with descriptive in mean, frequency, % and T-test. The result of this study show that Beta wave with 20Hz acts as a stimulant cure and is significant to improving concentration on the learning achievement cognitive strength in literacy of Year-One pupils.

Keywords: Beta wave, learning disabilities level one, concentration achievement cognitive strength.

Introduction

Melaysia Education Blueprint 2012-2025 reported that overall there are still students who remained two times lower the evaluation standard of TIMMS in reading skills compared with OECD countries. On top of that, the statistics showed that under the 3M intervention programme, out of 53,544 students, only 44.6% of the students still failed to master reading, writhhing and calculating skills. According to Planning, Research dan Education Foundation Division (BPPDP), a total of 463,990 students still unable to master reading, writing and calculating skills. Transformation progress of hi-tech education has been implement in whole Malaysia to international level, announcement of YAB Menteri through RTM on 29 September 2015. This innovation is aimed to improve the education quality especially for the groups of learning disabilities pupils. The material fact by Abdul Rasid Jamian, Norhashimah Hashim dan Shamsudin Othman (2009) shows that education degree retrogression has bring many negative impacts.

Problem Statement

Teachers are blamed by parents and community when the children get weak results in examination. In fact, the main factor lead to the good performance, which is clearly put forward is the success and effectiveness of knowledge transfer by emphasizing on the concentration on learning cognitive strength, view and write skill, listen and write skill. The fundamental purpose of this research is to investigate how the Beta Wave Learning helps in the literacy achievement in Malay Language, of Year One pupils

Research Objectives

Quantitative research is to prevent and improve the shortcomings that may faces in real. Research activities such as participation observation and interviewing are examined in details (Glesne, C., & Peshkin. 1992), by simulated the Beta Wave Learning in the process of literacy study in Malay Language, of Year One pupils with learning disabilities (stated as “Pupils”). Generally, this research is to:

1) Identify the needs of Beta Wave Learning in helping Pupils master the listening and writing skills in Level One of Malay Language,

2) Identify the needs of Beta Wave Learning in helping Pupils master the viewing and writing skills in Level One of Malay Language,

3) Identify how Beta Wave helps to improve the concentration on the Learning of Cognitive Strength for Year One Pupils.

Research Issue

This research is to answer following questions: What levels of support that Beta Wave Learning can provides to help Pupils in the achievement of Level One of Malay Language.

1) What levels of support that Beta Wave Learning can provides to help Pupils master the listen and write skill in Level One of Malay Language,

2) What levels of support that Beta Wave Learning can provides to help Pupils master the look and write skill in Level One of Malay Language,

3) Identify what levels of support that Beta Wave Learning can help to improving the concentration on the Learning Cognitive Strength for Year One Pupils.

Research Significance

Wish to provide the results of research to:

1) Teacher Education Division, Ministry of Education Malaysia

2) Institute of Teacher Education Malaysia

3) Ministry of Education Malaysia

4) Minimize the amount of LINUS student

5.0 Research Theory

This research complied with Model ADDIE (Moledda, et al., 1996) for the creation of power point teaching aid with using the simulation of Beta Wave Learning, which includes early-stage observation, objectives determination, materials election, creation of Malay Language teaching system with multimedia materials and the comparison between Pre and Post outcomes. This is to examine the effectiveness of Beta Wave Learning in helping the achievement of Pupils in Level One of Malay Language. This is very important because the success of research (use of Beta Wave Learning, frequency of 20Hz will lead to a simple and low cost system, to help and focus on the teaching for Pupils, who failed Construct 1 and Construct 2 (C1C2) examinations.

Research Methodology

This research focus on the results of Beta Wave Learning helps Pupils concentration learning in the literacy achievement learning cognitive strength. This part will explain on the methods used in the research, improvement measure, research instrument, research population and strategy, data collection methods, and research analysis SPSS22.

Research Design

This research is leading by Quasi-Experimentation (Campbell & Stanley, 1963) which having separate sections such as pretest-posttest nonequivalent group design. This research did not consist of any controlled candidates as all of them are those who failed the Construct 1 and Construct 2 (C1C2) examinations. The research design will be drawn in Picture 1.

Picture 1: Quasi-Experimentation (Pretest-Posttest non-equivalent group design)

O1 X* O2

Notes:

X*- using Beta Wave Learning aids in teaching literacy of Malay Language for 3 weeks

O1- Pre-Test

O2-Post-Test

Samples

Research candidates study reading skill for Level One of Malay Language with using Beta Wave Learning aids, while Construct 1 and Construct 2 examinations used to test the candidates achievement (Sabaria, 2003; Gay and Airasan, 2003). 31 students from Chinese Primary School in Perlis one of the northen state in North Malaysia have been chosen as the respondents of this research. They have teaches by using Beta Wave Learning for 3 weeks' time. Pre-Test of Construct 1 and Construct 2 examination had been given to them before teaching with Beta Wave Learning, and Post-Test after that. The examinations are compare and analyze and by using SPSS22 and T-test system. The result shows that Beta Wave Learning bringing positive impacts and improvement in the literacy study in Level One of Malay Language.

Study limitations

The study excluded the group who has disabilities, hearing, seeing and only for the year one of primary school pupils and the only students who pass the test requirements C1C2 pass.

Instrument study consists of Multimedia instrument with frequency Beta (20Hz) and test achievement cognitive strength

Multimedia instrument teaching with Beta wave 20Hz are generated by integrating literacy teaching materials involving vowels (A, E, I, O, U) with the rhythm of the waves frequency (20Hz) as the background of the power-point through-Garageband Analysis Software and determining the frequency (20Hz) were analyzed using the Visual EQ. Meanwhile, a tool to measure the achievement of students is from demographic to increase the validity of the study. While the assessments measure the scores concentration cognitive strength using Mind-fokus equipment. While the coordination listen and write, which comprises write a letter cited by teachers include 10 points of 5 questions. There are parts of the measure skills and write letters written by the command designated by teachers covering 10 marks of 10 questions and a total score was 20 points, and resource-based (Linus Program, 2014). Time of the assessment carried out in 30 minutes during class hour.

Evaluation instruments

Oral reading test was used to collect data. The test consists of two parts: Part A is the information itself and Part B: Oral Exam Questions read and write. The content of oral test was extracted from the reading literacy screening in instruments 4 and 5 in year of 2011. Two sets of tests were used to carry out pre-test and post-test (the contents of both instruments are the same and involved pupils of primary school rehabilitation of phase 1 in year 1). Two teachers were trained and made certain they have at least five years of experience have revised the questions pre-test and post-test to confirm the questions are in accordance with the turn around in the ability of the students. Oral test of reading and writing, viewing and writing will be given to the control and management administration of the minimum marks for the literacy of reading and writing, viewing and writing are also provided. resherchers are not related to the subjects when treatment is carried out.

C1C2 Test Set A and Set B C1C2 test is a measurement instrument used to examine the strengths and weaknesses of students in the skills of listening and writing, and writing and elites in promoting master skills Vowels A, E, I, O, and U. his test is used to help teachers identify weaknesses typical recovery and strength faced by the students in the process of listening, reading, writing and reasoning seta devise appropriate teaching program to the students. Items of questions focused on the degree-level knowledge of the difficulties in literacy Vowels letter (A, E, I, O and U) which involves seeing and writing skills as well as listening and writing. (Sariah Amirin, 2014).

Pre-test and post test

Pre exam will be administered before the intervention and post-test will be carried out after the students exposed through frequency Beta power point teaching aids within 3 weeks. Same type of post exam and pre exam which consisting of Literacy Assessment with Look and Writing Vowels are used to test the construct 1 and 2 in literacy construct language Malaysia phase one of year one instead of 3 question. All of the answer should be filled by the student himself. Question one consisted 5 questions and students need to write the answer Vowel read by teacher. The corrected answer will give 2 marks and total corrected answers will score 10 marks. Therefore, questions 2 and 3 consist of 10 blanks and students should write the consonant letter that called for question 2, while the third question should write the letter assigned by random shows by teachers. The total score is 10 marks for questions 2 and 10 marks for question 3 and all scores will be converted into percentage.

Scores Division Literacy skills

Pre-test and post-test are the same type consists of 3 questions. All answers must be completed by the students themselves. Question one is filled in the blank and students should write the answer read by teacher and each correct answer will be allocated 2 points and the total score is 10 points. Therefore, questions 2 and 3 consist of 10 blanks and students should write a letter consonant called by teachers to question 2, in contrast to the 3 questions students should write the letter assigned by teachers in random way. The total score is 10 points for questions 2 and 10 marks for question 3 and all scores will be converted into percentage.

Data Collection Procedures

This preliminary study is a feasibility study to see Instrument readiness administered in the actual study. In this study, the implementation of a school in the northern state of Perlis who have been involved 31 students of class 1K tested with test questions C1C2 in set A. Therefore, after it was revealed by the media, Beta wave power point teaching for 3 weeks, 31 pupils were exposed to simulate wave beta by teaching media power point to verify the implementation of management control poses in terms of timeliness, clarity and directions of questions, and the certainty of the period for handling corrugated Beta teaching media and problems that arise in the management and treatment operations in order to overcome the Zero defect when it becomes a real problem in the future interventions.

Findings

The result of the information that is carried on a total of 31 students showed learning difficulties who do not master Malaysia's standard language, malay literacy focused in Primary Chinese School, SJK (C) found that 24 respondents (82.67%) have computers at home, 28 respondents (93.33%) agreed and were interested in reading through the computer and 27 respondents (91.36%) love using computers.

The results to identify whether there is a significant degree of integration needs of Beta-frequency performance to help students concentation on learning and master skills Vowel look and write in the language of literacy learning Malaysia a level one year.

Nul Hypothesis: There are no differences effects Beta wave with 20Hz in improve the concentration on the Learning of Cognitive Strength before treatment and after treatment for Year One Pupils the

Research Hypothesis: There is a difference effects Beta wave with 20Hz in improve the concentration on the Learning of Cognitive Strength before treatment and after treatment for Year One Pupils the

Paired Differences									
		Mean	**Std. Diviti on**	**Std. Err or Mea n**	**Lowe r**	**Upp er**	**t**	**df**	**Sig. 2-taile d**
Pai r1	**Sc ore -F0 – sco re-F3**	**- 18.41 9**	**21.75 5**	**3.90 7**	**- 26.39 9**	**- 10.4 3**	**- 4.71 4**	**3 0**	**o.oo o**

Table 1

Statistic Paired Samples T- Test

The results are significant (t = -4.714, df = 30, P <0.05). Statistic t-test shows that the null hypothesis is rejected and the researchers concluded that there is a difference effects Beta wave with 20Hz in improve the concentration on the Learning of Cognitive Strength before treatment and after treatment for Year One Pupils. The frequency of Beta waves Sustainable affect student achievement in listening skills and writing letters in the language learning Vowel in Year One Level One. The results also showed an overall multimedia need with sustainable Beta frequencies help improve hearing and writing skills by finding the mean descriptive analysis of achievement test scores andeing-writing Vowel for the pre-test is 63.17 points (63.17%) of 21 respondents involved and se *the mean post-test is 81.38 marks (81.38%) of 27 respondents* involved. The result of the test score achievement seeing and writing letters there is the addition of an achievement test scores in the score 18.41 (18.41%) this means there is an increase of 6 respondents.

The extent to which the implementation of the management of teaching methods learning with Beta wave 20Hz help to overcome learning problems of students in years one

In overall, the time taken to take part in the teaching of vocal call is heard and the time 19:16. The view and write is 5.00 seconds listen and write of 36.00 seconds time consuming. The results of this preliminary study found that the total time to recognize Vowel is 1 minute 16 seconds. While in conducting literacy recognize letters were part of hearing call is 34.53seconds, see and call consonant is 10sec, see and write consonant is 1.26 seconds and the total time taken in handling consonant is 45.79saan. Thus, the time taken to exposure multimedia teaching beta wave is 2 minutes 17saat sustainable. Therefore it can be said there is increasing achievement scores obtained by obtaining an average overall score was 65.16 in test set A previous exposed teaching media. Meanwhile, after being exposed to teaching with Beta 20 Hz Aids there is a change to 79.78 and the mean score was increased 14.62. This finding indicates that the learning with beta 20Hz remained there as a positive sign of encouragement and give its findings are positive signs of change on the achievement of the students who were exposed to simulated conserved beta waves 20Hz.

Conclusion

The preliminary findings of the study it was found appropriate to continue to study the real and the ideal duration for each process of managing and administering the use of multimedia and beta frequency equipment and installation takes place requires students to take 10 minutes, the time of giving the instructions is 2.34seconds, time exposure operation of teaching and learning to recognize literacy which includes vowel and consonant is only a 2. 17 seconds and 15 minutes for the answering and questions session, Set A or Set B. The remaining 5 minutes to the formulation of teaching.

The results of this study also showed that Beta Wave effective in Literacy on the concentration learning of pupils in level one primary school and gave the difference was significant positive effects before treatment with after treatment performance in literacy learning for pupils in years one of primary school.

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Research on Determinants of Trade Balance in Vietnam: a VAR Approach

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Abstract

Vietnam has experienced a long-lasting trade deficit in nearly 20 years (1993-2011), which brings a lot of negative effect to the economy. This fact requires the study of trade balance and the main factors affecting the trade balance of Vietnam so that policy makers in Vietnam can have appropriate adjustment to improve the situation of balance of trade. This study employs an unrestricted VAR model to examine determinants of trade balance in Vietnam. Quarterly data set of three endogenous variables and one exogenous variable from January 1997 to December 2014 is used in this paper. Overall, we find that trade balance in Vietnam is significantly negatively related to real domestic GDP per capita. A real depreciation of the real effective exchange rate index leads to an improvement of the trade balance. Particularly, the empirical result shows that a real foreign GDP per capita has a negative effect on the trade balance. About FDI, the model shows that FDI inflow has no impact to trade balance in overall in Vietnam.

Keywords: FDI, Real effective exchange rate, REER, Trade balance, VAR, Vietnam.

1. Introduction

1.1. Statement of problem

Trade balance is also known as net exports. The trade balance shows if a country exports more than it imports[1]. A positive trade balance means the country exports more than it imports and known as trade surplus. A negative trade balance shows a country imports more than it exports which is called trade deficit or trade gap. Trade balance is also part of the calculation for gross domestic product (GDP).

Having a positive or negative trade balance is neither good nor bad. Other things equal, a surplus increases GDP and deficit reduces it. If this impact is strong enough, it gives rise to the traditional Keynesian multiplier effect with consumption moving in the same direction.

In financial terms, trade balance influences the total size and the composition of the current-account balance and, more broadly, it influences the balance of payments (which comprehends not only the trade balance but also income payments, loans and aid from abroad, etc).

The trade balance is used to help economists and analysts understand the strength of a country's economy in relation to other countries. A country with a large trade deficit is essentially borrowing money to purchase goods and services, and a country with a large trade surplus is essentially lending money to deficit countries. In some cases, the trade balance correlates with the country's political stability because it is indicative of the level of foreign investment occurring there.

In particular, long-lasting trade deficit can lead to foreign debt, on which a country has to pay interests. If this debt is judged by market agents as unsustainable, a currency crisis can erupt. Even before this perspective materializes, the government can be induced to dampen GDP growth.

Some industrialized countries such as USA, Greece, Portugal, Spain, United Kingdom and Australia show large and persistent trade deficits. In contrast, some Western European countries such as Germany, Austria, Finland, Netherlands, Switzerland, Sweden and Ireland have accumulated large trade surpluses.

Given the difference in the trade balance across countries and time, it is essential to ask what are the main factors influencing the trade balance and whether there are differences in the effects in different countries. Countries with different levels of development, the factors affecting the trade balance will be different, the level of how strong is the impact also different.

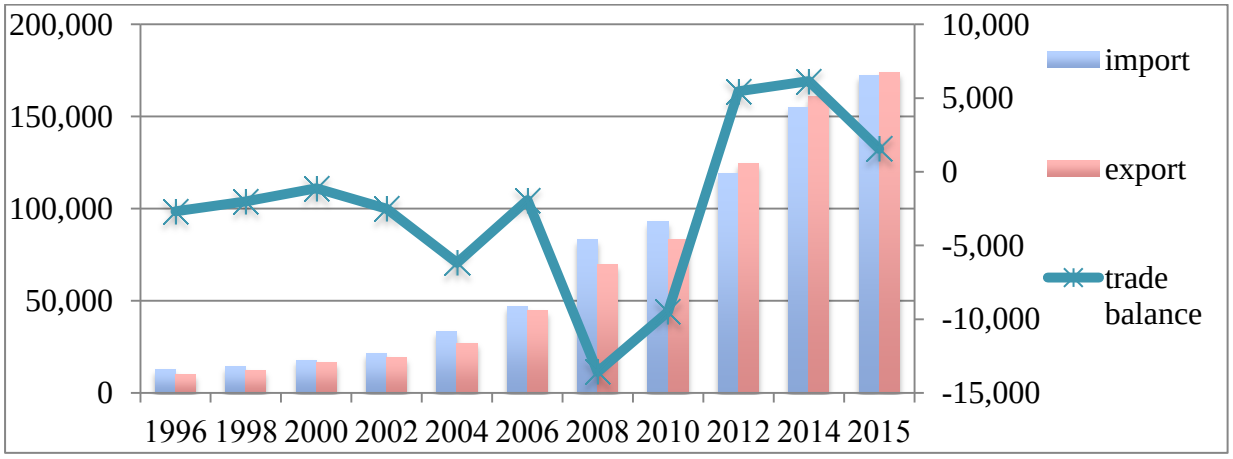
1.2. Overview of Balance of Trade in Vietnam

Since the Reformation in 1986, Vietnam has adopted market-oriented policies and gradually opened its economy and traded with many countries. In the early 1990s, the volume of trade was fairly limited. However, since 1995, when the Vietnamese government's policies came into effect, the international trade in goods of Vietnam has increased rapidly. Both imports and exports have increased as a result of market reforms, expressed through signing bilateral trade agreements with regional partners, becoming member of WTO, increasing in exports competitiveness, huge foreign direct investment inflows, imports of machinery and technology from abroad and large scale infrastructure projects requiring imported components. Recently, the structure of imports began to appear many luxury consumer goods such as cars, although the proportion of these items is relatively small in total imports.

[1] Carter McBride

Figure 1. *Trade balance in Vietnam for the period 1996 - 2015*

Unit: USD million



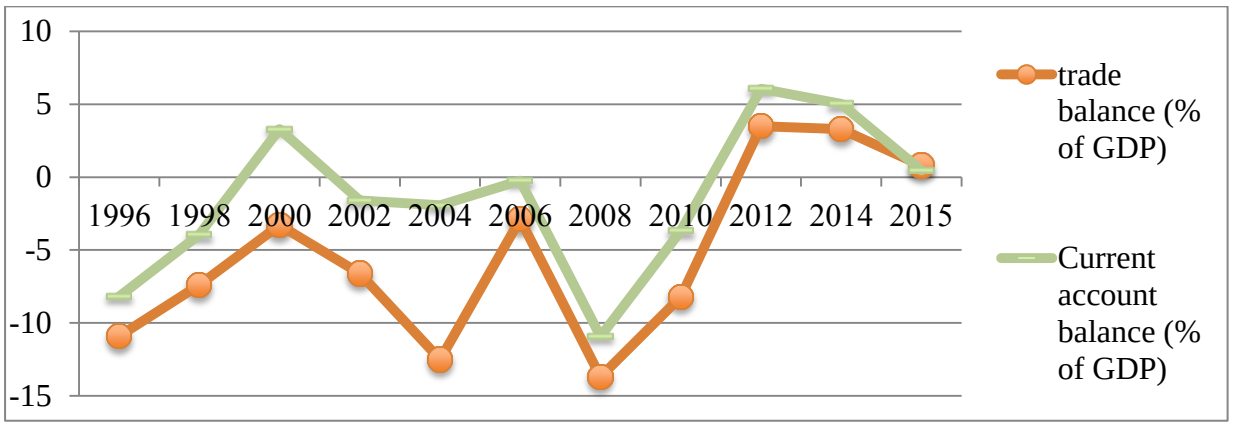
Source: Worldbank

It is notable that trade balance of Vietnam has been persistently in deficit since 1990, except 1992 and the last few years since 2012 with small surpluses. The difference rose to its highest level in 2008, deficit USD 13 billion, due to the impact of the world economic crisis came from the U.S. The trade balance deficit increased despite the increase in exports, with an average annual growth rate is 15.6% during 2000-2009.

Since 2009, trade deficit has reduced as the economy has slowly recovered thanks to the improvement policy of the Government and experienced a small surplus in 2012 until now. One of the reasons for the trade surplus of Vietnam recently is due to the difficult period, many enterprises downsized production, leading to lower import demand. A more significant contribution to the trade surplus is the multinational corporations leading the global value chains recently withdrew from China and Thailand to redirect investment into Vietnam. Foreign Information Technology Group, Electronics and Telecommunications in Vietnam such as Canon, Sony, Nokia and Samsung recently increased investment in Vietnam.

Figure 2. *Trade balance and current balance in Vietnam period 1996-2015*

Unit: % of GDP



Source: Worldbank

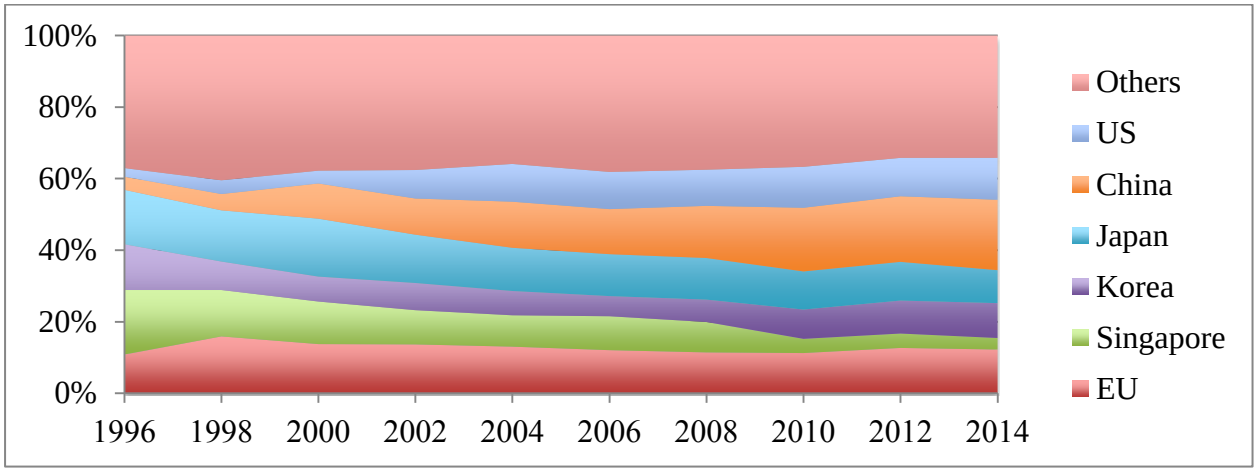
The current balance of Vietnam mainly affected by trade balance due to the fact that commodity transactions account for a large proportion of total revenues and expenditures of the current account (about 70 % - 85 %). Trade deficit pushed the current account balance of

Vietnam in prolonged deficit. Figure 2 shows the trade balance and current account balance with the same trend, while the trade deficit has always exceeded the current account balance deficit. In 2008, the growth rate was 171.43% deficit, bringing the current account deficit amounted to USD 10.8 billion, equivalent to 14.56% of GDP.

In term of trade partners, Vietnam has traded with almost all countries in the world since 1995, and the trade volume has therefore increased considerably since then.

Figure 3. *Vietnam's trade direction from 1996 to 2014*

Unit: %



Source: GSO, Vietnam

Japan and European Union (EU) have been major trade partners of Vietnam since the early 1990s. Before 2000, the trade volume (the sum of export and import) between Vietnam and US, and China was smaller compared to that between Vietnam and Japan, And EU. Nevertheless, since the early 2000s, the US and China have also become major trade partners of Vietnam, who accounted for approximately 11.7% and 19.7%, respectively of Vietnam total trade volume in 2014. EU, Japan and China are the second, the third and the fourth biggest markets, respectively.

The exports items with high value of Vietnam are mostly raw commodities or less processed products and labor-intensive goods such as textiles, leather and footwear. The major import items of Vietnam are products with high technological content such as electronic items, high tech machinery and materials for manufacturing exports goods.

The fact that trade balance in Vietnam has been in long-lasting deficit in 20 years (1993-2011) is obvious to be able to bring negative impact to the economy. Therefore, it is necessity to examine the situation of trade balance in Vietnam. What are the main factors effecting trade balance and how to improve trade balance in Vietnam?

1.3. Literature review

There are a lot of researches on the determinants of trade balance in many countries, however, there is still debate about the main factors effecting trade balance and the impact of each factor to trade balance across different countries.

Regarding researches on Vietnam, there are also few quantitative studies on this relation. Lord (2002) used cointegration equation and ECM model to investigate the impact of real exchange rate on trade balance of Vietnam from 1990 – 2001. Empirical results indicated that the effect of Vietnam's real effective exchange rate on its international competitiveness and export demand are statistically significant in the global market and a number of regional markets. Another study by Phan Thanh Hoan and Nguyen Dang Hao (2007), using cointegration theory

for quarterly data from 1995(1) to 2005(4), found that real exchange rate has impact on trade balance in the long run. One percent depreciation of real exchange rate causes trade balance to increase by 0.7 percent. Khieu (2013) examined the effect of the real exchange rate on the trade balance of Vietnam using real exchange rate, Vietnam's real GDP, openness of Vietnam economy and the money supply as the endogenous variables and two exogenous variables world oil price and US real GDP to run a reduced-form VAR model. His finding is that real depreciation of the domestic currency has negative impacts on the trade balance in a certain period of time and there exists a J-curve for Vietnam, its effect lasts for 11 months.

Regarding the relationship between trade and FDI, Nguyen Binh Duong, Tu Thuy Anh and Chu Thi Mai Phuong (2012) examined the linkage between FDI and trade in the case of Vietnam, including exports and imports. The main results indicate that there is one way causality linkage between exports and FDI. Concerning the linkage between FDI and imports, there is 2 ways causality linkage between these variables: import causes FDI and vice-versa in Granger's sense.

2. Method

2.1. Methodology

This paper tries to figure out the main determinants of trade balance in Vietnam using unrestricted Vector Autoregression model based on the quarterly data from 1997 to 2014 with the trade balance equation derived from the theoretical model introduced by Goldstein and Khan (1985). Stationary test or unit root test of variables is based on ADF (Augmented Dickey – Fuller) test while the test of relationship is in hand of Vector Autoregression (VAR) model.

Our VAR model is in the following form:

$$Ft = C0 + C1Ft\text{-}1 + C2Ft\text{-}2 + \ldots + CmFt\text{-}m + D1Xt\text{-}1 + \ldots + DmXt\text{-}m + et \quad (2)$$

Where $Ft = [\triangle TBGDP, \triangle LNDGDP, \triangle LNREER, \triangle LNFDI]'$ is a 4x1 vector of endogenous variables; C0 is a 4x1 vector of intercept; C1,…, Cm are 4x4 matrices of coefficients; Xt is exogenous variables $\triangle LNWGDP$; D1,…, Dm là 4x4 matrices of coeficients; and et is a 4x1 vector of error terms.

For DGDP and REER, the coefficients are expected to be negative, however, for FDI and WGDP the coefficients are expected to be positive.

2.2. Data collection

The main data sources are the United Nations Conference on Trade and Development (UNCTAD), Asian Development Bank (ADB), World Bank as well as General Statistics Office of Vietnam (GSO). The real effective exchange rate indices are taken from UNCTAD database. They are based on the nominal effective exchange rate indices calculated as the geometric weighted averages of bilateral exchange rates against the currencies of the 36 major trading partners. The real effective exchange rate index is then deflated by the difference in domestic and foreign consumer price in the total economy. Real domestic GDP per capital and World GDP per capita are measured as the GDP in 2005 purchasing power parities per capita and is drawn from the World Bank database. Real World GDP per capita is calculated as the average of domestic real GDP per capita of 12 trading partners. Trade balance and FDI of Vietnam are taken from the General Statistics Office of Vietnam. Trade balance is calculated as the difference between exports and imports in each specific year.

3. Results

All our variables become stationary in first different and there is no cointegration among them, thus we are confident to estimate the unrestricted VAR model with four optimal lag.

Based on the regression result of the equation with TBGDP being dependent variable, we find that when real domestic income rises, the demand for import increases, which will worsen trade balance. Regarding the effect of FDI, the result shows that FDI does not significantly affect trade balance. About REER, the result is economically significant as our expectation. Noticeably, the result about the impact of real income from the rest of the world is against our expectation. When WGDP rises, importing of Vietnam will grow and the trade balance will be worse.

In general, at 5 percent, only REER and WGDP have significant impact to TBGDP. However, at 10 percent, WGDP, REER and DGDP significant affect TBGDP. The independent variables can explain the variation of the trade balance at about 47 percent.

Regarding regression result of other model in VAR, we found that REER is significant affected by its past values and all the coefficients are negative, which means that when REER appreciates, we can expect an increase in country's international competitiveness in the future, however, it takes time which can be three quarters for that, and vice versa, when REER depreciates, we should prepare for the fall in country's international competitiveness in next three quarters. REER is also influenced by WGDP with a positive impact. For DGDP, it is affected by FDI, its past values and WGDP. The relationship between GDP and FDI has been examined and proved through many researches.

Table 1. *Summary of causality between TBGDP and independent variables*

	Vector Autoregression Model		Granger Causality	
	5%	10%	5%	10%
DGDP causes TBGDP	No	Yes	No	No
WGDP causes TBGDP	Yes	Yes	_	_
FDI caused TBGDP	No	No	No	No
REER causes TBGDP	Yes	Yes	Yes	Yes

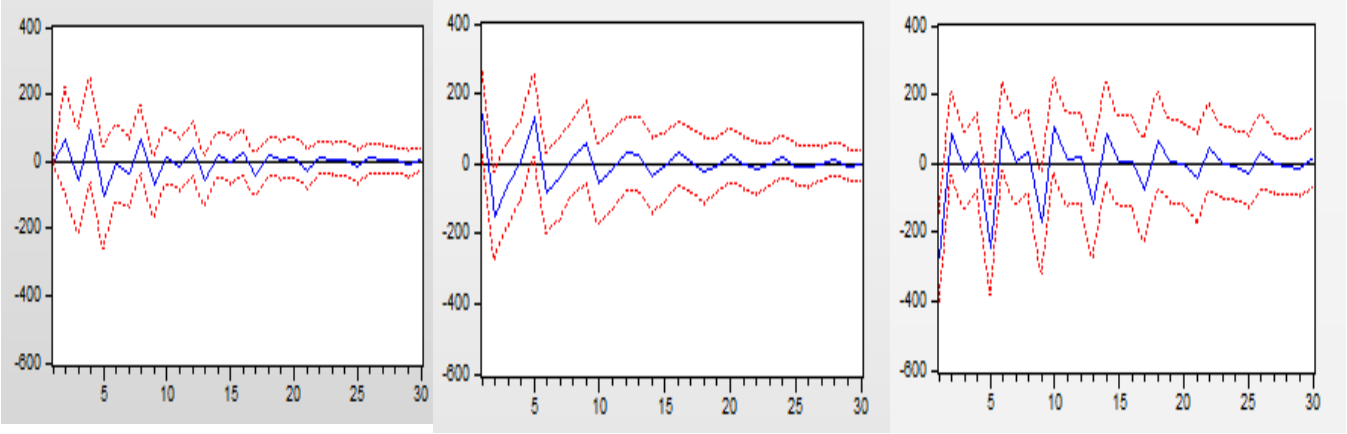
To double check, we perform VAR Granger causality Test. The VAR Model and the Granger Causality Test produce the same result on real effective exchange rate and FDI but different result on real domestic income. The VAR Granger causality Test also indicates that there is no feedback from trade balance to the independent variables.

- **Impulse response function**

We will discuss the impulse response functions of the trade balance with respect to positive shocks of other endogenous variable with Cholesky ordering: △LNDGDP, △LNREER, △LNTBGDP, △LNFDI. This ordering is applied by Khieu (2013) which in his study, the Cholesky ordering is real domestic income, real exchange rate, ratio of exports to imports and money supply. His explain is that according to Krugman, Obstfeld and Melitz (2012), when the domestic currency depreciates in real term, the trade balance is immediately affected. In addition, consistent with the AA-DD model, an increase in the real income will increase the real money demand, which in return causes the interest rate to rise. In an open economy, such an increase in the real interest rate appreciates the domestic currency in the short run. Hence, real GDP is supposed to contemporaneously affect the real effective exchange rate, real effective exchange rate is supposed to contemporaneous affect trade balance. And in our study, FDI is assumed to be contemporaneously affected by all of other endogenous variables.

Figure 4. *Impulse response function of ⊿TBGDP to ⊿LNFDI, ⊿LNREER, ⊿LNDGDP*

△LNFDI △LNREER △LNDGDP



Trade balance increases under a positive shock to FDI in first quarter and starts to decline in second quarter. It goes up again and decreases to its lowest level in fifth quarter. Trade balance continues to fluctuate in the following time with smaller vibration amplitude and becomes stable.

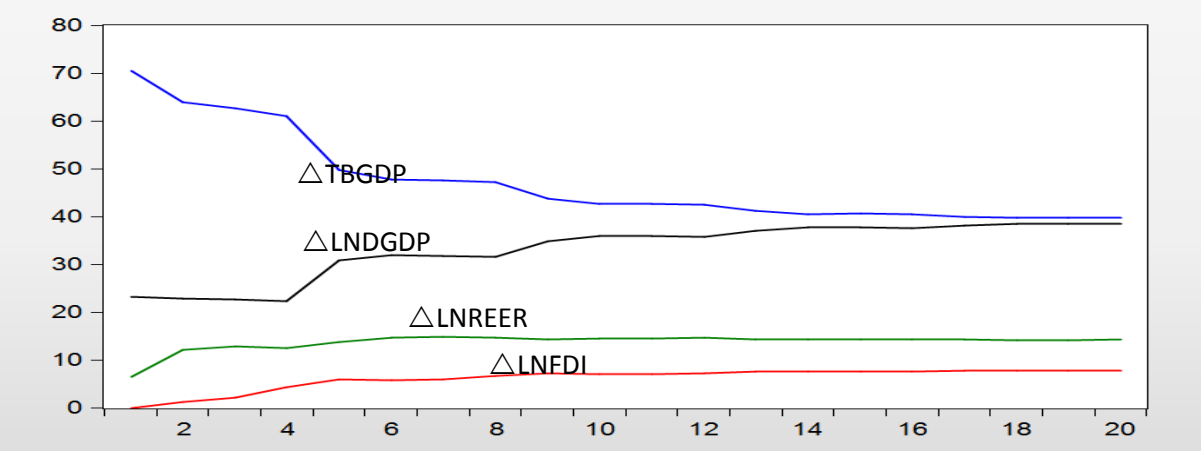
Besides, an increase in REER worsens trade balance in first and second quarters. Specifically, the negative effect of REER on the trade balance becomes worst in the second quarter and decreases since then until fifth quarter. A rise in REER continues to affect to trade balance with smaller impact until trade balance becomes stable like before the shock.

Lastly, an increase in real domestic income is expected to increase the demand for imported goods, thereby worsening the trade balance. Figure 4 indicates that a positive shock to real income immediately worsens the trade balance. Since second quarter, the negative impact becomes weaker, however it takes a long time for the trade balance to become stable.

- **Variance decomposition**

Figure 5 presents the variance decomposition of the trade balance due to its own shock, and variations of other endogenous variables. Accordingly, the variation in trade balance in the first horizon is mainly explained by its own innovations (approximately 70.4 percent). Apart from its own shock, real domestic income also plays an important role in explaining the variation of trade balance. It accounts for about 23.2 percent in first horizon. Real effective exchange rate can explain about 6.4 percent variation of trade balance and FDI is assumed to have no impact on trade balance in first horizon.

Figure 5. *Variance decomposition of △TBGDP*



The importance of its own shock in explaining the variations of the trade balance is decreasing over time while the proportions of FDI, real effective exchange rate and real domestic income keep increasing (although the proportion of real domestic income slightly declines in first 4 horizons). In the 20th horizon, 39.7 percent of the variation of trade balance is explained by its own innovations while domestic income, real effective exchange rate and FDI account for 38.4 percent, 14.25 percent and 7.7 percent, respectively. In general, apart from its own shock, the variation of trade balance is mainly explained by variations of real domestic income and real effective exchange rate.

4. Discussion and Conclusion

4.1. Discussion

The empirical results based on unrestricted VAR model show that the real effective exchange rate index, real domestic income have the expected sign and constitute important factors in explaining the aggregate trade balance.

The finding that an increase in real effective exchange rate will worsen trade balance is highly consistent with the conclusion by Falk (2008) which states that a real depreciation of the real exchange rate index leads to an improvement of the trade balance for 32 industrialized countries. This result contributes to literature and can help policy maker in Vietnam in the sense that exchange rate policies can help to improve trade balance. Our result, however, is in contrast to Rose (1990), which revealed that devaluation does not necessarily lead to an increase in trade balance based on his finding that the impact of devaluation on trade balance is insignificant for 28 countries, and one country shows negative impact.

Evidence for the impact of the real domestic income is mixed. The results of the VAR model suggest a negative and significant relationship between the real domestic income and the trade balance. However, the effect is no longer significant based on the granger causality test. The negative impact of real domestic income on trade balance can be explained through the development policies of the Vietnamese government. Vietnam has been in the stage of modernizing the economy. Thus, a rise in real income in current period will stimulate the demand for import of modern machinery and equipment to serve for the modernizing process in the future periods. Moreover, many Vietnamese people are "foreign-goods-loving", hence, when their income goes up, they tend to demand more imported goods, which are believed to have higher quality than domestically produced goods.

The real foreign income has negative impact on trade balance which contradicts with our expectation and finding of Falk (2008) about trade balance of 32 industrialized and emerging

economies for the period 1990–2007 that the trade balance is significantly positively related to real foreign GDP per capita of the trading partners. This can be explained that when real income of the world increases, demand for Vietnam goods rises. However, in Vietnam 70 percent of material for manufacturing exporting products comes from importing, to meet the demand for exporting, importing also goes up. Moreover, the demand for imports from Vietnam is quite high and persistent. Thus, imports can increase more than export and lead to the negative effect. Moreover, Vietnam is in modernizing stage of the economy, most importing products are high technology machinery and equipment with high value while main exporting products are raw and low processes products with low value.

The empirical results also show that the coefficients of FDI are not significant. As we know, trade balance is calculated by the monetary value of exports minus monetary value of imports. The finding that FDI does not granger cause trade balance can be explained that FDI inflow pushes both exports and imports of Vietnam with the same direction and same magnitude which makes this impact being cancelled out when we calculate trade balance.

In overall, according to impulse response function and variance decomposition, apart from its own shocks, the variation of trade balance is mainly explained by real domestic income and real effective exchange rate. FDI also play some part in explaining the variation of trade balance, however the explaining power is still limited.

Besides, the estimation result can account for 47 percent of trade balance performance. Thus, there must be other factors considerably determined trade balance of Vietnam which cannot be found in this study.

4.2. Conclusion

Based on empirical result, real domestic income, real foreign income and real effective exchange rate have negative impact on trade balance, thus theoretically, in order to push trade balance, we need an decrease in those factors. However, real foreign income is an uncontrollable factor in Vietnam's perspective. Besides, reducing domestic income is also not an appropriate way, it will worsen the standard of living of the citizens, reduce the quality of life and slow down national development, which is against the aim of domestic policy. Hence, the finding from this study suggests that Vietnam should have appropriate policy to take full advantage of the negative impact of real effective exchange rate to improve trade balance.

Real effective exchange rate talks about international competitiveness of a country. If real exchange rate is kept out of concerning, policy makers will not know how far competitiveness of local producers may go. Therefore, exchange rate management should take into account real exchange rate for the benefit of trade balance. The broad implication is that to restore competitiveness, the currency must weaken or domestic prices/costs will have to increase less than foreign prices/costs.

However, export capacity of enterprises in Vietnam still has a lot of limitation which make it difficult for Vietnam to take full advantage of the increase in country's competitiveness. Technology content, value added of exporting products of Vietnam is still low. Most of the agricultural products, the main mineral exports are raw or semi-processed thus the value obtained is not high. Many major export commodities still heavily processed and depend on imported raw material. Although the goods from groups of processing industry has strongly grown in speed and density, but still focus mainly in labor-intensive products, the product of high technology applications limited. Moreover, exports grow fast but vulnerable before the external fluctuations, particularly fluctuations in the price or the emergence of new trade barriers in importing countries. Because the capacity to predict the changes in the world market is limited, the ability to adapt and deal with trade barriers of the business remains weak. Support industries grows

slow, the large rate of importing of major raw material makes it difficult for manufacturing of exporting products. When the world price increases, the production costs in country go up, which reduce competitiveness of export sectors.

The above restrictions are making merchandise of Vietnam facing enormous competitive pressure, particularly from the emerging economies desire to raise the value chain of their exports, while comparative advantage of low labor costs in Vietnam are gradually lost.

Besides, when domestic currency depreciates, it will enhance exports, however, imports will be negatively affected. Vietnam is in modernizing stage, imports is necessary to develop country in future, especially the high technology machinery and equipment. Therefore, it is recommended that exchange rate policy manipulation should not be overused and it cannot do the work alone, out of the macroeconomic context and without supporting macroeconomic policies because the exchange rate as a policy instrument can have more effects in addition to the impact on trade competitiveness

In order to increase exports while ensuring imports, Vietnam should focus on enhancing export capacity. The export sectors need to improve capacity, and be able to actively manage the production so as to quickly adjust to take advantage of real depreciation of the domestic currency.

We also found that FDI does not granger cause aggregate trade balance in Vietnam. However, we cannot deny the positive effect of FDI to economic growth and many aspects of economics in Vietnam. Thus, it is not necessary to believe that FDI cannot help to improve trade balance since it may have relationship with either exports or imports or both of them separately. Particularly, FDI may have impact on some specific industries. An empirical analysis using cross-country data for the period 1981-1999 by Laura Alfaro (2003) suggests that total FDI exerts an ambiguous effect on growth. Foreign direct investments in the primary sector, however, tend to have a negative effect on growth, while investment in manufacturing a positive one. Evidence from the service sector is ambiguous. For further research, to deeply examine the impact of FDI to trade balance, we can build model to examine the relationship between exports, imports and FDI in Vietnam. The research also should take into account other factors such as the openness of the economy, labor force, money supply.

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Compliance With Environmental Protection Regulations By The Project End-Borrowers: Case Of Third Rural Finance Project In Vietnam

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Abstract

Rural Finance Project (RFP) sponsored by the World Bank (WB) is the first development credit project in Vietnam which intergrates environmental protection (EP) issues into the credit activities of commercial banks. The compliance with environmental regulations helped raise awareness of rural people on EP when conducting their production and business activities. This is a practice for the wide-scale replication as well as promoting sustainable development of Vietnam's financial system. This paper assesses the compliance of the end-borrowers (sub-projects) in the implementation of regulations on environmental protection in Vietnam, the World Bank and separate regulations of the project, propose recommendations to stakeholders on next steps to be taken of RFP to improve the quality of project implementation with regards to environmental aspect.

Keywords: Environmental Protection; Rural Finance Project, Vietnam

1. Introduction

After 30 years of "Doi moi" (Renovation - 1986) in Vietnam, more and more investors realize that agriculture and rural development is the potential investment area. To the year 2013, the growth rate of loans to the agricultural sector and rural areas has reached 21.7% / year, with tens of millions of farmers and customers in rural areas had access to bank credit funds. However, it is the fact that the supply of investment capitals for agriculture is still less than demand for agricultural and rural development in Vietnam, especially the medium and long term capitals. Therefore, the attraction of preferential capitals from international financial institutions for this sector is considered as a solution to promote the "Tam Nong: Agriculture, Famer, Rural Area" program in Vietnam.

The Financing Agreement for The Third Rural Finance Project (Credit Agreement No.4447-VN) was signed on 14th November 2008 and and come to effect since 10th February 2009. According to the Agreement, Worlbank (WB) provides the Project with USD 200 million equivalent of credit that is distributed in to 3 components, among these - Credit Component, with USD 185 million financing, consists of 2 sub-components: (A) Rural Development Fund III (RDF III): USD 175 million financing, and (B) Micro Loan Fund (MLFIII), USD10 million financing.Project implementation period is 5 years.The Project was completed by end of 2013. However, the Revolving Fund (consists of principal repayment made by participating financial institutions in the Project) will be available until 2033 and continue being on-lent to Credit Institutions to achieve Projects' targets.

Targeted subjects – Eligible end-borrowers included individuals, households; cooperatives; non state-owned medium and small enterprises located in rural areas, which have eligible sub-projects. The RFP III is designed to further re-solve the demand of capital for economic development, hunger eradication and poverty alleviation aiming at getting better off of people in the rural areas through increasing the chance to access banking services, thereby increase job opportunities and raise incomes.

RFP is the first credit project in Vietnam required the evaluation of environmental aspects as a mandatory procedure for making loans. Particularly, the RFP III has integrated environmental protection requirements in small loan lending. Despite it is unprecedented and unfamiliar for Participating Financial Institutions (PFIs), the PFIs has mastered the project environmental performance. The compliance with environmental regulations helped rural people enhance their awareness of environmental protection during their production and business. Especially after participating in RFP, beside using the same credit evaluation process for project loans and conventional loans, most of the PFIs also added environmental requirement for conventional loans.

The objective of this paper is to assess the compliance of the end-borrowers (micro/ sub-project) in the implementation of regulations on environmental protection in Vietnam, the World Bank and separate regulations of the project,propose recommendations to stakeholders on next steps to be taken of RFP to improve the quality of project implementation with regards to environmental aspect.

2. Methodology

Screening sub-project to investigate: To have scientific grounds for evaluating the compliance of participating parties in the project, we have carefully selected over 400 subprojects. Subprojects are selected by the 4 criteria in descending order of priority: *Environmental risk; Economic sub-sector; Geographic location; and Loan size.*

Field survey: When arrived in the subprojects, the team do the follows: (a) *Interview*, fill the structured questionnaires for the subproject owners; (b) *Quickly observe* to define environmental status/problems of subproject's site; make a comparison with Environmental Protection Agreement (EPA) or Environmental Protection Commitment (EPC) to evaluate the compliance of subproject owners; *(c) Interview surrounding local people* to evaluate the response to the impacts of environmental problems from projects (if necessary); *(d) Take photos* inside and surrounding the subproject's area to illustrate the environmental status of the subproject.

Processing of survey data: survey data then be processed by Microsoft Excel; each questionnaire is analyzed and evaluated by environmental experts according to geographical and industrial characteristics.

Synthesis and analysis the survey data: Analyze and synthesize data from the questionnaires, results of on-site evaluation of investigators to draw assessments and conclusions.

3. Data Collection

3.1. Surveyed Sub-projects by Economic Region

Total of 412 surveyed sub-projects in 15 provinces are classified into seven economic regions. Sub-projects for survey were selected randomly. The number of sub-projects in each region reflects basically the list of disbursements of the project at the selective time, which focuses primarily on the Red River Delta provinces, the Southeast and the Mekong River Delta.

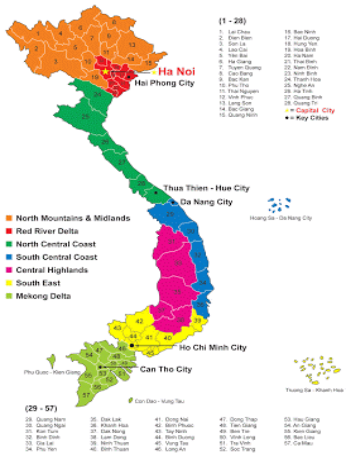

Figure 1: Map of Regions and Provinces in Vietnam

Table 1: Surveyed Sub- projects by Regions

No	Regions/ Provinces	Number of Subprojects	Percentages (%)
1	**Northern moutainous**	**28**	**6,79**
	Son La province	28	
2	**Red River Delta**	**75**	**18,2**
	Bac Ninh province	24	
	Hai Duong province	34	
	Vinh Phuc province	17	
3	**North Central**	**53**	**12,8**
	Thanh Hoa province	27	
	Thua Thien Hue province	26	
4	**Central Coast**	**34**	**8,2**
	Khanh Hoa province	34	
5	**Central Highlands**	**95**	**23,05**
	Dak Lak province	53	
	Lam Dong province	42	
6	**South East**	**68**	**16.5**
	Binh Duong province	30	
	Dong Nai province	38	
7	**Mekong River Delta**	**59**	**14,3**
	An Giang province	11	
	Bac Lieu province	13	
	Ben Tre	8	
	Long An	27	
	TOTAL	**412**	**100**

Source: Survey results.

3.2. Surveyed Sub-projects by Economic Sub-sectors

The number of selected sub-projects is divided by the various job categories to ensure the most representative.

Table 2: Surveyed Sub-project by Job Categories (Economic sub-sectors)

No	Job Categories/ Sub-sectors	Sub-projects	
		Quantity	**Percentage**
1	Cultivation	84	20.4%
2	Raising livestock and poultry	147	35.7%
3	Food processing	12	2.9%
4	Manufacture of paints, plastics and rubber (chemical)	1	0.2%
5	Production of construction materials	9	2.2%
6	Aquaculture	38	9.2%
7	Handicraft	34	8.3%
8	Other industries	87	21.1%
	Total	412	100%

Source: Survey results.

3.3. Socio-economic Characteristics of Sub-projects' Owners

Educational levels

Despite operating in agriculture in rural areas, even in remote areas, assessment to information remains difficult but the surveys results show that most sub-project owners have educational levels from secondary to high school.

Table 3: Educational Levels of Sub-projects Owners

No	Region	Educational levels					
		Illiteracy	Elementary school	Secondary school	High school	Under-graduated	Post Graduated
1	North Moutainous	1	1	16	8	1	
2	Red River Delta		6	34	23	8	
3	North Central		11	25	16	1	
4	Central Coast	1	1	13	12	7	
5	Central Highlands	1	25	40	28		
6	South East	1	9	15	26	14	1
7	MeKong River Delta		13	28	13	5	
	Total	**4**	**66**	**171**	**126**	**36**	**1**

Source: Survey results.

If dividing into three educational levels: high (university and college), average (secondary and high school) and low (primary school or less), the number of sub-project owners with average educational level occupies 74%, the percentage of sub-project owners with low education level accounted for 17%. In general, all sub-project owners have quite moderate educational level comparing with the average sub-project owners lives. Most of sub-projects have good producing capacity and be active to the market. The higher educational level has helped them be able to economically develop than other households in the same region.

Income

The survey result shows that the majority of the sub-projects do business effectively. They told that the loan has helped their families to increase income significantly. Thus many sub-projects want to continue to borrow money to expand their production and business.

According to survey data, every dollar invested by RFP III will help generate income at $ 0.55 in the first year of the project and each project loans created 1.97 jobs, on average. Income of households is also noted to increase significantly with 29% of households increased from VND 5 million or more, 26% of households increased from VND 1-3 million and 20% of households increased their income from VND 0.5 to 1 million.

4. Assessment on the Environmental Awareness and Protection of Subproject Owners

4.1. General awareness on environmental protection issues and activity

Most sub-project owners are aware of the importance of Environmental Protection (EP) in their businesses. They understand that environment affects on their lives and practising EP measures as well as pollution preventing/ mitigating are necessary. The sub-project owners state that EP is necessary because it directly affects their lives, health and families. In addition, EP is the responsibility and the necessary work to protect living environment for surrounding people. Some subproject owners, as enterprises, recognized that EP is neccessary to protect their business reputation. However, it is undeniable that some subproject owners are limitedly aware of EP. They said that they conduct EP mainly to protect their individuals and family health or because of local authorities force, not for the common interest of the community.

Under the framework of RFP III, it is the first time, EP regulations is regarded as a mandatory clause for loans. It contributes to the creation of a new approach in lending activities of banks, which is to integrate the EP regulations into bank loans. The fact that 97% of interviewed subproject owners said that they were disseminated on the requirements to conduct EP measures by credit officers when lending proves that EP requirements of the Project help to change the awareness of subproject owners.

4.1.2. Commitment types to implement environmental protection measures

The survery results of 412 subprojects showed that 406 over 412 subprojects (accounting for 98.5%) were committed to implement EP measures on the loan. Only 6 over 412 subprojects (1.5%) did not commit.

Figure 1 illustrates the survey results with 412 subproject owners about their commitment types to implement EP measures with the competent agencies in EP or with the Bank. Approximately 91% of interviewed sub-project owners said that they must conduct environmental protection measures as stipulated in Environmental Protection Agreement (EPA). 7% of sub-project owners agreed that they must comply with the EP measures as registered in the Environmental Protection Commitment (EPC). 2% of all subproject owners said that their businesses were subjected to elaboration of Environmental Impact Assessment (EIA) report and they comply with EP measures in the report.

In fact, almost subproject owners which are disbursed in the form of reimbursement only have to comply with EP measures as committed in EP Agreement. Only a few subproject owners registered for EP Committment and no subproject has to elaboration of EIA report. It shows that although all subproject owners know that they must comply with EP regulations, some of them do not understand what the specific regulations are.

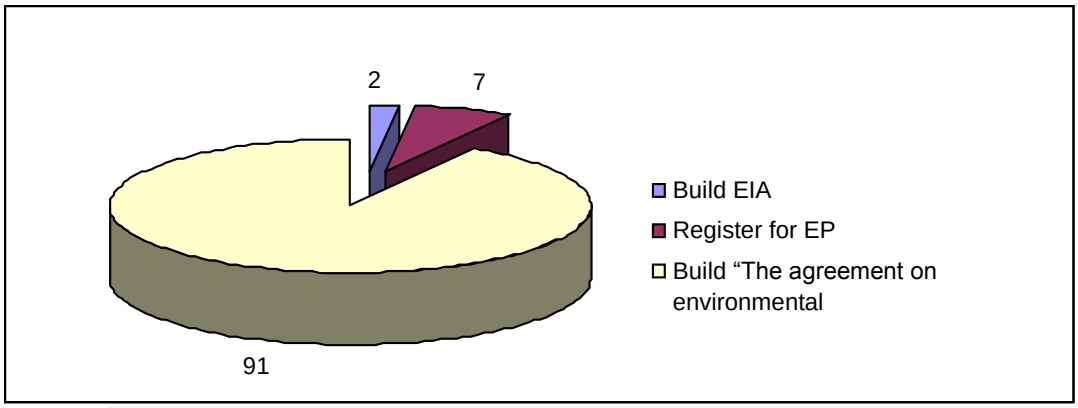

Figure 2: Types of Subprojects' Environmental Protection Commitment (%)

Source: Compiled from the survey results

4.1.3. Awareness on the use of pesticides for plant protection

Among 412 surveyed sub-projects, there are 84 sub-projects in cultivation sector and 71 of which (accounted for 85%) have use pesticides. However, only 23 over 71 subprojects (32%) are aware of the list of pesticides banned in Vietnam and the methods for Integrated Pest Management (IPM). As such, about 70% of subproject owners using pesticides in their cultivation do not have enough awareness of the list of banned pesticides in Vietnam and how to use IPM measures. This is a major challenge for EP issues in agricultural sector when people do not have full understanding of IPM methods.

For 71 sub-projects using pesticides, 66% of them said that they have collected pesticide containers/ packages after using and dispose them along with household wastes. 22 subprojects (account for 31%) used other treatment measures for pesticide packages, such as burning or burying. Only 2 subprojects (3%) indiscriminately throw the packages away in the field after using.

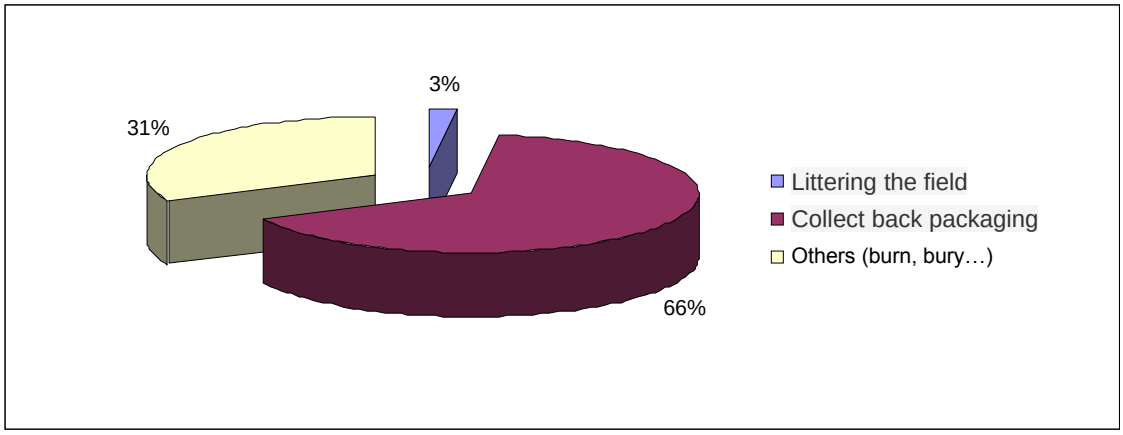

Figure 3: Status of the after–use pesticide packaging disposal

Source: Compiled from the survey results

All the subproject owners on vegetable, fruits, flowers and coffee cultivation using pesticide in the Central Highland region have ascertained that they bought pesticides with definded origin in trusted stores. Pesticide packages were collected and disposed in the right places or buried in a hygienic manner. The result of surveys at sub-project sites shows that there is no smell of pesticide as well as complaints on the pesticide pollution from surrounding households. Although there is no regulation on pesticide safety use in EPA, subproject owners in the Central Highland region have well awareness of this issue. Credit officers of PFIs branches usually remind subproject owners on the treatments of pesticide packages after using.

5. Assessment on the Compliance with Environmental Protection Activity of the Subproject Owners

The compliance of all subprojects with EP regulation in the RDP III is evaluated on three aspects: (i) the compliance with EP measures, (ii) the effectiveness of the EP measures which have been implemented and (iii) the impacts of subprojects on the community and the sustainability of subprojects.

5.1. Assessment on the compliance with environmental protection measures

Elaboration of EPAgreement

Virtually all subproject owners were aware of the need for EP, pollution mitigation and treatment in their businesses. Therefore, the subproject knew how to conduct the EPA in their loan documents.

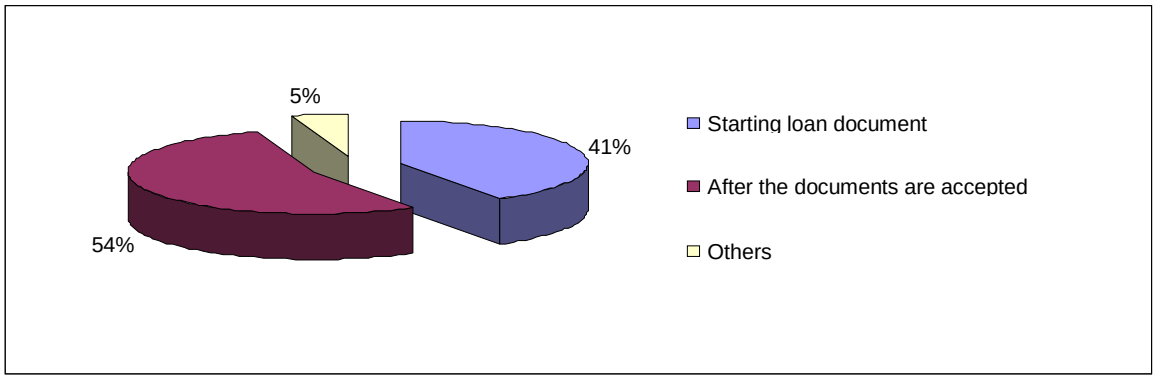

Figure 4: Time of Preparing Environmental Protection Agreement (%)

Source: Compiled from the survey results

In the opinion of the subproject owners being interviewed, 54% said that EPA was made after the loan application being accepted; 41% said that EPA was made at the time of starting loan application.

How EPA was made is also a matter of concern. 52% of all subproject owners said that credit officers have assisted them through direct discussion on the EPA's content and

filled in the document; 42% of subproject owners said they were instructed how to set up by credit officers and the subproject owners are the ones who fill the information in EPA.

The elaboration of EPA has played an important role in enhancing the awareness of end-borrowers of EP and associating their responsibilities in implementing the environmental obligations into their businesses. However, interviewing with end-borrowers and their EPA supervision pointed out some following issues :

Firstly, although the loan documents have included the EPA, some information about the effects of subprojects on the environment and health as well as EP measures have not been filled precisely and completely.

Secondly, some EPA were not in line with the standard form.

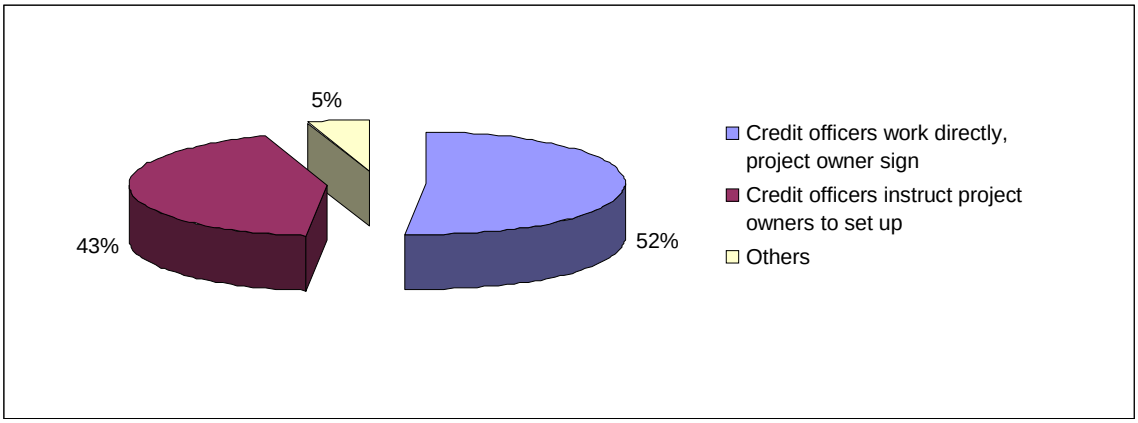

Figure 5: Method of Environmental Protection Agreement Elaboration (%)

Source: Compiled from the survey results

5.2. Evaluating the implementation of environment mitigation measures specified in the EPA

Although 59% of reviewed subproject owners are aware that their businesses are financed by RFP III, 90% of them said that they have fully implemented the environment mitigation measures stipulated in the EPA; 9% subproject owners implemented some environment mitigation measures , however, being not completed. Only 4/412 subproject owners (1%) did not have any environment mitigation measures when operating their businesses.

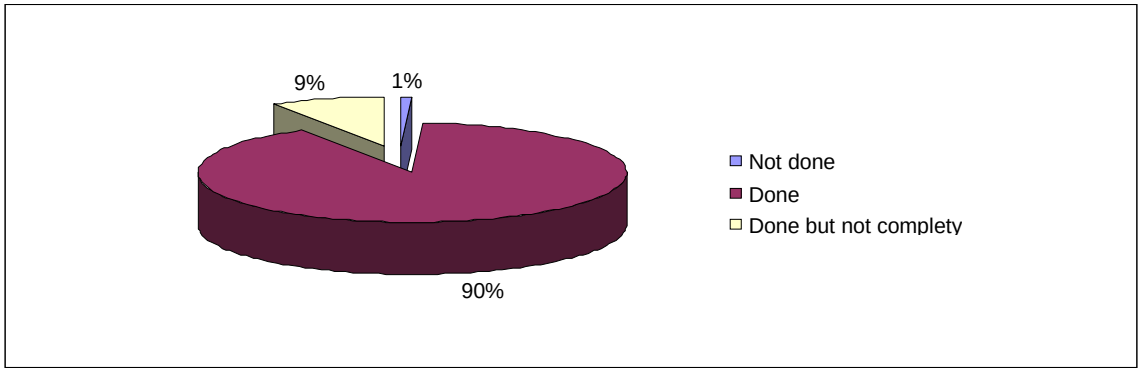

Figure 6: Status of Implementation of Committed Environmental Protection Measures

Source: Compiled from the survey results

Thus, almost subproject owners have complied with their mitigation measures as stated in the loan documents. According to the site surveys, EP measures have been implemented in a rather completed manner in all surveyed sites.

The type of EP measures is depending on the type of business. Specifically:

- Cultivation subprojects (planting flowers in Da Lat province, coffee farming in Dak Lak province and vegetables planting, etc.) are all using chemical fertilizers and pesticides in the permitted list. The after-used packages were all collected and burnt/ buried.

- Construction of biogas vaults has been applied to livestock subprojects in order to avoid neighbours' complaints about stench pollution. In addition, some households have used pro-biotic products to sprinkle around the barns in order to prevent the feeding area from flies and mosquitoes. Some households collected mucks for field fertilizing. Waste water from biogas vaults is used for plantation and agricultural production.

- Processing subprojects carried out some EP measures as committed and the main reason is because of their own benefits when implementing these measures. The most popular EP measure is to collect waste and then recycle. For example, in timber production, subproject owners usually collect wood chips and sawdust for sale or cooking. For steel production subprojects, cinder is also collected for sale. In addition, a number of other measures have also been taken in order to reduce environmental impacts, such as: use dust-attracting nozzle or water sprayer to reduce dust in manufacturing areas; use sound - proof walls to reduce noise in ice production facilities (for example, the silencers or thick wall constructions were applied to reduce noise pollution expanding to surrounding areas in ice-production workshops).

- Small-scaled aquaculture subprojects (mainly fishery) belongs to the group of less environmental pollutants as almost farmers applied on-site treatment with the generated waste by sucking fish feces to fertilize plantation.

- For subprojects in trading and service sectors, such as, purchasing of trucks, harvesters and other agricultural machines, environmental impacts were insignificant because: (i) the vehicles and machines are often 100% brand new and imported from developed countries to ensure the quality (ii) they are well maintained by the owners. Therefore, the operation of these vehicles and machines has not violated any EP regulations. The popular measures for EP include regular maintenance or collecting redundant oil for sale.

- For small-scaled subprojects, such as, brick and plastic production, the popular EP measures are to transport waste away from the production areas; use humidifiers to reduce dust in brick production.

All EP measures implemented in the observed subprojects are summarized in table 4.

Table 4: Summary of EP Measures Undertaken at Subprojects Level

No	Types of sub-projects	Main measures for EP
1	Cultivation	-Using chemical fertilizers, pesticides in the permitted list
2	Livestock	- Biogas fermented wastewater is used for plantation - Using pro-biotic products to prevent from flies and stench -Collection of mucks to fertilize fields
3	Processing (wood, fish, rice…)	- Sawdust and shavings are collected for sale - Spraying water to reduce dust - Keeping the production areas away and separated from living areas - Collecting skin, bone, horn for sale - Waste water from slaughter, feces, feathers or viscera are treated by lime before burial - Collecting rice husk for sale - Using dust-attracting nozzle - Using sound-proof walls to reduce noise - Re-cycling water - Recycling waste
4	Aquaculture	Sucking fish feces to fertilize plantation
5	Trading and Services	- Collecting scraps for sale - Using canvas or spraying water to prevent from dust - Collecting used oil for sale

Source: Compiled from survey results

5.3. General Assessment on the compliance with EP measures taken by subproject owners

The following advantages and limitations have been withdrawn from the survey regarding the compliance with EP measures taken by subproject owners:

** Advantages:*

Firstly, the introduction of EP requirements as a loan conditions under RFP III helps the subproject owners pay more attention to the pollution control and integrate EP to their businesses. By integrating environmental management into lending operation, RFP III contributes to increase the awareness and actions of the PFIs as well as subproject owners on EP and contributed to the sustainable development of Vietnam rural areas.

Secondly, the majority of subprojects are small scaled businesses (eg. farming, husbandry, aquaculture), well aware of the EP and consciously comply with their EPA. As a result, they have well implemented EP measures as committed.

Thirdly, some subprojects are under the supervision by the local competent agencies and industrial zones (eg. iron and steel manufaturing in Bac Ninh province). Thus, the awareness of subproject owners of EP issues is increased and they already conducted some measures to mitigate the negative environmental impacts.

** Limitations:*

Firstly, EPA has contributed a significant role in enhancing the sub-projects owner's awareness of environment issues, however, its binding level is not high. In some cases, the compliance with EP measures of subproject owners mainly comes from their personal awareness.

Secondly, for some subprojects, the elaboration of EPA as required by the Project is not necessary since they are already registered EPC and under the control of local competent agencies, such as, the Department/ Division of Environment and Natural Resources.

Thirdly, the compliance with EPA by some subprojects has not been thorough and formalistic due to the following reasons:

• Some subprojects are located far from residential areas and the loan sizes are small. Therefore, it is difficult for credit officers to supervise and remind the subproject owners regularly.

• Although the EP regulations have been integrated as one of the loan conditions so as to improve the sub-projects owner's awareness of environmental issues, it has not changed the end-borrowers' behavior in EP work so much. This is resulted from the fact that sub-loans are mainly made in the form of reimbursement, hence PFIs usually select subprojects that have consciously implemented EP measures for reimbursement.

5.4. Assessment on the effectiveness of the undertaken environmental protection measures

Some subprojects in cultivation, livestock, aquaculture, and processing have implemented EP measures effectively and mitigate the amount of wastes disposed into the environment. There are three reasons for this:

Firstly, these subprojects are small scaled mainly on livestock, cultivation and located in mountainous and spacious regions (Son La, Dak Lak, Lam Dong provinces). Therefore, the environmental impact is small.

Secondly, a number of subprojects have well implemented measures to recycle and reuse wastes from their production. Specifically, wastes from timber production, such as, sawdust, wood chips are collected for sale or burned; nearly 100% of cinder disposed from steel production are collected and sold; waste from livestock feeding are collected to produce organic fertilizer or biogas; disposed truck oil is collected for sale; rice husk and bran disposed from milling is collected for sale; ash is used as fertilizer for plantation. These EP measures have significantly contributed to the improvement of productivity, product quality as well as financial benefits for subproject owners.

Thirdly, for subprojects in transportation business (trucks for transportation is majority), although the binding to the implementation of EP measures stipulated in their EPA is not significant. Due to the strict supervision of local competent agencies on the quality of transportation vehicles, the environmental impacts of these subprojects have also been strictly controlled.

Furthermore, the effectiveness of EP measures for some subprojects, such as, small scaled manufacturing (steel, brick ....) is not high as waste from production process is just collected and transported away from living or production areas without any treatments. EP measures for noise reduction, dust and wastewater treatment have not been fully paid attention by subproject owners.

5.5. Assessment on the sustainability of subprojects and subprojects' impacts on community

The survey results showed that natural environment surrounding sub-projects sites is quite good. Local government agencies and people do not complain about the environmental impacts of subprojects. EP activity within the framework of the RFP III is highly appreciated. The result of subprojects interviewed showed that 398 over 412 subprojects (accounting for 97%) said that local government and surrounding people do not complain about the environmental impact of subprojects.

In addition, 408 over 412 subprojects (99%) recognized that the implementation of EP measures should be not only during the implementation of RFP III but also after the Project completion.

6. Conclusion

RFP Project is the first credit project mainstreaming environmental protection in the credit activities of commercial banks in Vietnam, to integrate environmental protection issues in the credit assessment process, as the premise for this practice apply common and contribute to promoting sustainable development of Vietnam's financial system.

In the RFP III, the project's environmental protection policies have been built fairly complete, detailed, feasible and consistent with the regulations on environmental protection in Vietnam in general and World Bank policies on environmental protection in particular. This policy not only get the broad support of the relevant ministries such as State Bank of Vietnam, Ministry of Finance, Ministry of Natural Resources and Environment, the financial institutions involved in the project but also received the active participation of the lender of last resort, contributing to raising awareness of stakeholders on environmental protection issues.

RFP III was the integration of environmental requirements in small lending in rural areas. The environmental regulations have helped raise awareness of rural people on environmental protection when implementing the production and business activities.

As the nucleus of the Project, the project management unit (PMU) under BIDV has attempted and basically completed the tasks, and functions. The PMU has issued Instruction No. 7132 (year 2013) to the performance of the project environment. This is a continuation of the provisions on environmental protection of RFP II project with appropriate adjustment to the new provisions in Law on Environmental Protection in Vietnam. Guideline contributed in supporting stakeholders in implementing the project through detailed instructions screening eligible subprojects for re-lending capital from RFP III reviews by the environmental protection criteria, given the requirements for inspection and supervision of subprojects to ensure relevant parties make serious commitments to environmental protection.

Until now, most PFIs are mature in the implementation of environmental requirements of the project; impact on the environment of the sub-project loans from RDF III is limited to lowest level, within little impact on the environment; the PFI has been responsible in the selection of environment friendly subprojects for lending capital of the project and the borrowers are aware of environmental protection issues. As a result the local people do not complain about the environmental impact of production and business activities of the subprojects. Public opinion highly appreciated the performance of environmental protection within the framework of project loans from RFP III.

Thus, there are totally grounds to expect in the future, if the project is continued to expand, economic efficiency and environmental protection for the community will be increased both in the breadth and depth.

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Impacts of Globalization on the Non-Life Insurance Market in Vietnam

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Abstract

The process of globalization with the increasing social and economical integration among countries has strong effects to the emerging insurance markets, including Vietnam. The research in this paper concentrates on analysis the relationship between the Vietnam's non-life insurance market and the globalization process on both macro and micro levels. The goal of the research is to clear specific results about the impacts of globalization on the development of Vietnam's non-life insurance market. The hypothesis of the research is that there is a strong reflexive relationship between globalization process and the development of Vietnam's non-life insurance market. The research methodologies applied in the research are statistical analyses and synthesis methods. The research results confirm the significance effects of the globalization process to the development of the non-life insurance market in Vietnam, providing a background for further research.

Keywords: Globalization, integration, non-life insurance market, emerging market, insurer.

1. Introduction

Globalization with the integrating in economics, sociology, cultural and technology has been promoting for the development of Vietnam's economy. The structure of the economy was changed with an increasing of the service and industry sectors, the agricultural sector is step by step moving to the industrialization and modernization. During 2000-2015, the economy's growth rate was average at approximately 7%/year. After effects of financial and economic crisis from 2009 to 2012, the economy is in the restoring process. In 2015, structures the industry and construction sector, service sector and agricultural sector were 33.25%, 39.73%, and 17.7% in comparison with these in 2014 were 33.21%, 39.04% and 17.7 %. GDP per capita in 2015 was 2109 USD, increased by 57 USD in compared with it in 2014 (Statistical Bureau, 2016).

In financial area, globalization with integration and development of Vietnam economy had been bringing chances for the development of the insurance industry in general and non-life insurance sector in particular. Which remarked with a significant data at premium growth rate over 20%/year during 2000-2015, the competence of the market is improved with an increasing of insurers, financial criteria, improvement of service quality, and new trends in distribution and product development.

2. An Expanding of Vietnam Non-Life Insurance Market

Reform and integration had been begun in Vietnam since 1990s, but the effects of those were clearer since Vietnam jointed WTO. Vietnam Government's Commitments with WTO in insurance field were continuous reforms in regulation and supervisory performances. Insurance Business Law of Vietnam was introduced in 2000 and emended in 2010, which gave advanced changes in regulations on insurers' capital, preconditions to establish and join the market, conditions to do business and financial regulations - that complied with international rules in insurance. The supervisory activities have been improving to ensure for the stable and strengthen of the market.

Integration and development of the economy are factors pushing the demand on non-life insurance services.

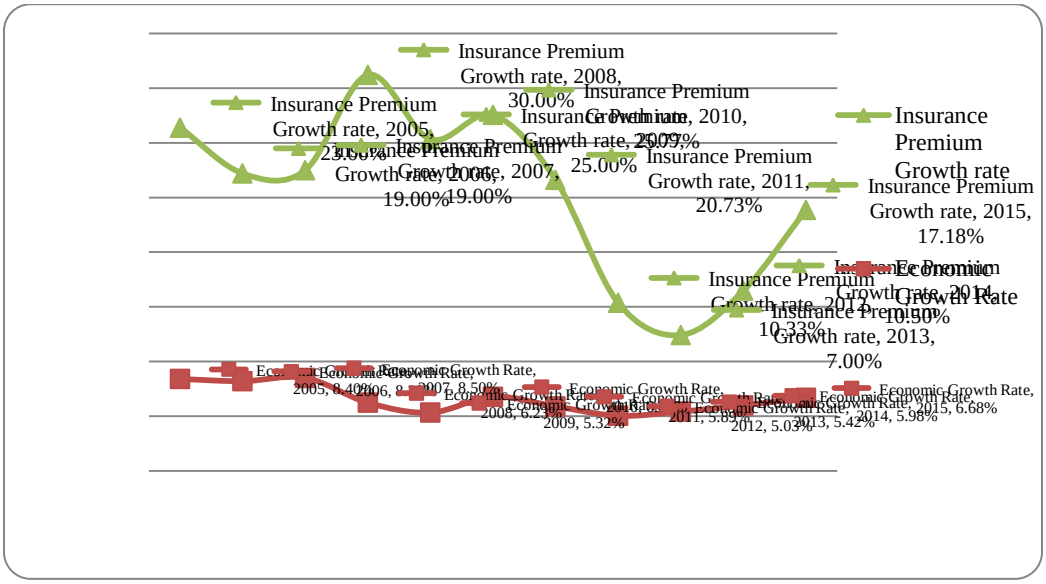

Figure 1: Relationship among economic growth rate and insurance premium growth rate

(Source: General Statistics Office of Vietnam, 2006, 2010, 2016; Insurance Supervisory and Authority, 2006, 2009, 2014, 2015, 2016)

The figure shows the positive relationship among economic growth and premium growth in Vietnam. As an emerging market, Vietnam non-life insurance market has the premium growth rate raised even much higher than the economic growth rate. Economic growth rates of the economy were average at over 7%/year during 2005-2008 and approximately 5%/year during 2009-2015 lead to a strong increasing in non-life insurance premium growth rates: over four times during 2005-2011 (average over 20%/year) and over two times during 2012-2015 (average 11%/year). Economic and financial crisis during 2009-2012 affected on the economy but the non-life insurers have been rehabilitating, reached the premium growth rate at 17.18% in 2015.

In addition, the capacity of the market is improved with an increasing of insurers.

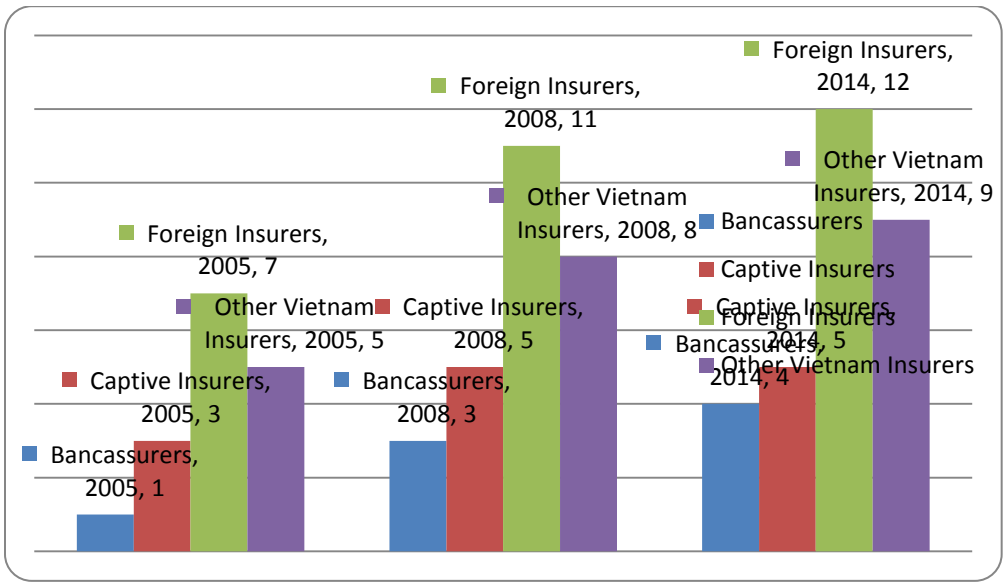

Figure 2: Number of Insurers According Types of Insurer (2005-2014)

(Source: Insurance Supervisory and Authority, 2006, 2009, 2015)

Before the reform of the economy in 1994, Vietnam non-life insurance market was a monopoly market with only one domestic insurer - Bao Viet, provided some traditional lines such as marine insurance, car insurance, and cargo insurance for state enterprises. With reformation and liberation in insurance field in Vietnam by an introduced of Decree No. 100, Insurance Business Law of Vietnam in 2000, and an amended Insurance Business Law of Vietnam in 2010, the number of insurers had been increasing, including both foreign and domestic insurers. At present, there are 30 non-life insurers in the market, including: 18 domestic insurers and 11 foreign insurers, and 1 branch of foreign insurers. Moreover, a half of foreign insurers are big multiple national groups, such as ACE, AIG, Liberty, QBE, MSIG, Groupama, etc.

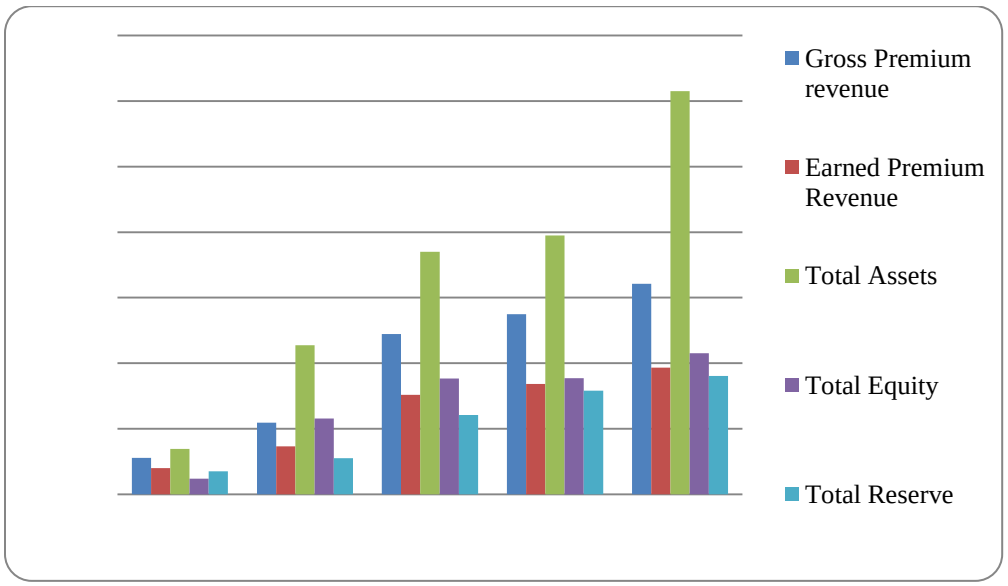

Figure 3: Financial Criteria of Vietnam Non-Life Insurance Market (2005-2015)

(Source: Insurance Supervisory and Authority, 2006, 2009, 2014, 2015, 2016)

Along with an increasing of insurers, the financial competency of Vietnam non-life insurance market had been improving. Total assets and total equity of non-life insurers are raised by nearly 10 times from 2005 to 2015 (Insurance Supervisory and Authority, 2006-2016), reserves of the market increased six times during 10 years (2005-2015). About premium revenue, gross premium revenue of non-life insurance market increased from 5,535 billion VND in 2005 to 32.142 billion VND in 2015, in which earned premium revenue increased from 3,992 billion VND in 2005 to 19,318 billion VND in 2015 by four times during 10 years. It could be seen that an increasing in total assets and total equity helped to improve the insurance capacity of Vietnam non-life insurance market; an increasing in reserve ensured for it facing catastrophic risks and sustaining stable development.

3. Enhancing efficiency of Vietnam Non-Life Insurance Market

As Swiss Re's study in emerging markets, an integration of foreign insurers goes along with capital, knowledge and efficiency, those push an improvements and development in local market. It bring: (1) capital, (2) knowledge, and (3) efficiency (Swiss Re, 2000).

In Vietnam non-life insurance market, total assets and total equity of foreign insurers increased from 1,049 billion VND and 658 billion VND in 2005 to over 20,000 billion VND and 8,000 billion VND in 2014 (Insurance Supervisory and Authority, 2006, 2015).

Integration of foreign insurers brought advanced knowledge in insurance to the market. Policies are standardized in both primary and reinsurance businesses. Underwriting guides and

claims management techniques are applied in insurance businesses that improve qualities and competency of the market. Further, Vietnam non-life insurance market's human resource was supplemented. Some seniors and specialists jointed into the market at the management positions for CEO, they applied advanced and new management technology in doing business and made improvement for their companies in particular and the whole market in general. In another side, Vietnam insurers' staff were sent to study in abroad such as CII, ANZIIF, Singapore Insurance Institute, etc. They became keys to make incredible changes in Vietnam non-life insurance market in recently years.

Moreover, foreign insurance companies enhance the efficiency of Vietnam non-life insurance markets by introducing superior customer services with a transferring technological and managerial know-how as in host countries, those seem did not interested in by domestic insurers before integration.

Besides an increasing in premium revenue, a reduction in indemnity ratio was evidence for an improvement in Vietnam non-life insurance market. The primary indemnity ratio of the market was 43.85% in 2005, 42.49% in 2011, 43.50% in 2013, and reduced to 39.13 in 2014. This proved for an improvement in the quality of underwriting activities as well as it in quality claims management.

4. New trends in Vietnam Non-Life Insurance Market

Globalization and integration lead to new trends in Vietnam non-life insurance market, those also become factors promoting the development of the non-life insurance market in Vietnam in recently years. Those are emerging of bancassurance, appearing of new products, and starting of e-business in insurance business.

Bancassurance is developed in Europe since 1970s, but it was started in Vietnam since early 2000s. The first bancassurer was QBE - Vietinbank Joint Venture Insurance Company, which is VBI - owned by Vietinbank since 2008. From 2006 to 2008, three other bancassurers were established, including ABIC - owned by Agribank in 2006, BIC - owned by BIDV in 2006, MIC - owned by MB in 2012 (MIC was established in 2008).

Exploring the client data, network and infrastructure of commercial banks, bancassurers in Vietnam concentrate underwriting credit segments: including both individual and enterprise clients. At present, bancassurers in Vietnam shared 12.51% premium revenue of the market.

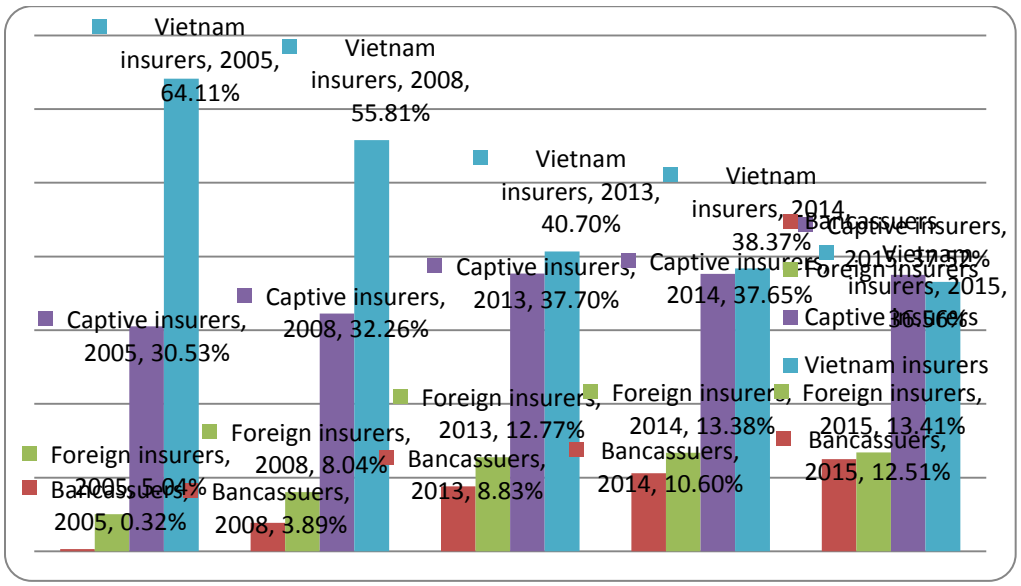

Figure 4: Market Share According Types of Insurer (2005-2015)

(Source: Insurance Supervisory and Authority, 2006, 2009, 2014, 2015, 2016)

The figure shows that bancassurers have fastest raised in market share among insurers in Vietnam, which was increased year by year and from 0.32% in 2005 to 12.51% in 2015, was better than it of foreign insurers.

Along with bancassurance, new products also are new trend in Vietnam non-life insurance market. In early 2000s, Bao Viet Corporation had been introduced advanced healthcare insurance products, which are distributed by AON broker, those are first healthcare insurance products in Vietnam non-life insurance market, covered insured's medicare expenses with high limits and benefits. Healthcare Products for group also were developed and distributed to enterprise client. In addition, homecare insurance product, credit insurance products for individual client were introduced since 2000s. In addition, products were upgraded frequently to supply and serve client's demand in the context of fast development of the economy. Those had been pushing the development and expansion of Vietnam non-life insurance market. As mention before, premium growth rate of Vietnam non-life insurance market increased by two to nearly three times in comparison with economic growth rate even during the crisis of the economy during 2009-2013 (see figure 1).

E-business is not new in insurance in developed markets, but in Vietnam, this one is new. Market share from online distribution channel in non-life insurance market is still much lower than it in other distribution channels in Vietnam non-life insurance market (lower than 1% of market's premium revenue). In fact, e-business opens up new ways to reduce costs while lowering market entry barriers and facilitating the break-up of the traditional insurance value chain. Insurance customers will benefit from greater transparency, lower prices and improved services, not only in the sales area, but also in claims management. New business opportunities will arise for focused and niche insurers. At present, most of Vietnam non-life insurers are constructing online distribution channel on their website. Which provides information, retail products to retail clients, and more important, it is building the client's habit relating to e-insurance. In the next future, it is hope that this one will be the efficient distribution channel with low underwriting cost.

5. Challenges for the Vietnam Non-Life Insurance Market

It is clearly that globalization and integration make advanced changes in Vietnam non-life insurance market. The market gets fast development with increasing in premium revenue, improvement in competency, appearing of new trends in product and distribution development, etc. But, insurers also are facing problems such as fraud from client, catastrophic losses caused by natural disasters, lack of skill labor (the market developed and expanded too fast, that lead to lack of specialists in property and engineering insurance lines, actuary, managers in insurance business), unfair competitive among insurers, etc. Integration also goes along with expanded from foreign insurers; this is due mainly to M&A and required reforming in Vietnam non-life insurers.

In other side, low insurance penetration and the proportion of income spent on non-life insurance in Vietnam is less than $100/capita, so that, development of Vietnam non-life insurance market is still at a very primitive stage. Insurers must give and push their business to exploit the potential market in the context of developing economy with low understand about insurance in population and affecting by unstable from the global economy.

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The Regression Between Foreign Direct Investment and Gross Domestic Product of Vietnam in the Period 1995-2015

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Abstract

Since 1988, Vietnam has launched the Law on Foreign Direct Investment (FDI) in order to attract the resources from the rest of the world to serve the course of the industrialization, modernization to basically shift Vietnam towards a modernization oriented industrialized country. In fact, for 30 years of economic renovation, Vietnam's economy has been taking its high annum growth rate of about 7% on average. FDI becomes an organic part of Vietnam's economy as a whole and one of the strongest momentums for Vietnam's economic growth. In fact, it goes ahead of remaining types of economic sectors like private and state-owned ones in term of export revenue and the share of contribution to the total investment capital of Vietnam. It seems that there is any relationship between Vietnam's economic growth and FDI inflow into Vietnam. From such the fact, the extreme opinion about FDI in Vietnam is that Vietnam's economy is the economy of FDI. By observing the movement of Gross Domestic Product (GDP) and FDI of Vietnam and taking use of the chi-square test, the paper would provide the sound evidence to make conclusion about the relationship between GDP and FDI in Vietnam for about last 2 decades.

Keywords: FDI, GDP, relationship, Vietnam.

Introduction

The relationship between GDP and FDI is the relationship between the value created and the capital internationally moved. In order to increase the economic growth rate or expand the value creation, the capital is one of the most important factors of production including the domestic and foreign ones. In other words, FDI is the input and GDP is the output of the economic circulation as a whole. FDI inflows into the economy that makes several impacts on it, of which there is the impact on the economic growth.

From 1988 to the end of 2015, the total disbursed stock of FDI inflow into Vietnam is about US$100 Billion. And in 2015, Vietnam's GDP recorded about US$ 200 Billion (GSO, 2016). There is some relationship between GDP and FDI in Vietnam. FDI brings into Vietnam a lot of capital to contribute to the total investment capital, creates new jobs, and promotes exportation and modern management expertise.

There have been several arguments on the relationship between GDP and FDI (Sandalcilar and Altiner, 2011; Sandalcilar, Altiner, 2011). Most of them put their attention to the impact of FDI on GDP with evidence from some specific countries. The persuasive conclusions have been drawn from the econometric model. For Vietnam, some arguments provide the reliable evidence about the impact of FDI on the economy as a whole (Nam and Quynh, 2015), therefore, the role of FDI on economic growth has been taken into consideration of Vietnam's economic development policies.

In order to make more clear the relationship between FDI and GDP of Vietnam in terms of linear dependence and linear independence, the paper would use the evidence-based method and chi-square test. The data are collected from GSO, Customs Directorate and other official sources of information. However, due to the non-availability of the data of FDI and GDP in the period 1988-2015, the data used in the paper is gathered only in the period 1995-2015 that means it has only 21 observations.

Literature Review and the Steps of Research Doing

The researches on the relationship between FDI and GDP can be grouped in some types. The first group contains the researches on the one-way relationship between them in which FDI is the independent variable and GDP is the dependent one. The researches explore the positive relationship between FDI and GDP for several countries (Sandalcilar, Altiner, 2011; Agrawal, Khan, 2011; Mawugnon, Qiang, 2009 *et all*). The second group contains the researches on the two-way relationship between them. (Chien, Zhang, 2012 *et all*). The similarities of the researches are to use the econometric model to test such the relationship. The result of the exploration is that there is a close relationship between them. Other researches provide the similar results. The forms of the relationships of those researches are only causality and function but not linear regression. Such the shortage of research on this aspect constructs the motivation for author to conduct the research.

Generally speaking, the nature of the relationship between FDI and GDP can be reflected by several forms of relationship including the causality, function and regression. Each kind of relationship conveys its specific features. The causality and function relationship between FDI and GDP have been proved clearly by the researches. However, the regression relationship in direct manner has not been fully illustrated.

The research questions are as follows:

1. Whether or not is there the regression relationship between FDI and GDP in Vietnam?
2. What are implications of the regression relationship to the policy making for Vietnam?

In order to answer the research questions, the following 3 steps would be undertaken:

The first is to observe the increased contribution of FDI to Vietnam's economy in term of the share of total capital, GDP and export revenue. The evidence-based method provides the perception on the tendency of GDP and FDI.

The second is to examine the linear regression by chi-square test to make clear whether the relationship between FDI and GDP is direct or not.

The third is to lay down the sound scientific and practical base for promoting the role of FDI as the main impact maker on Vietnam's economy.

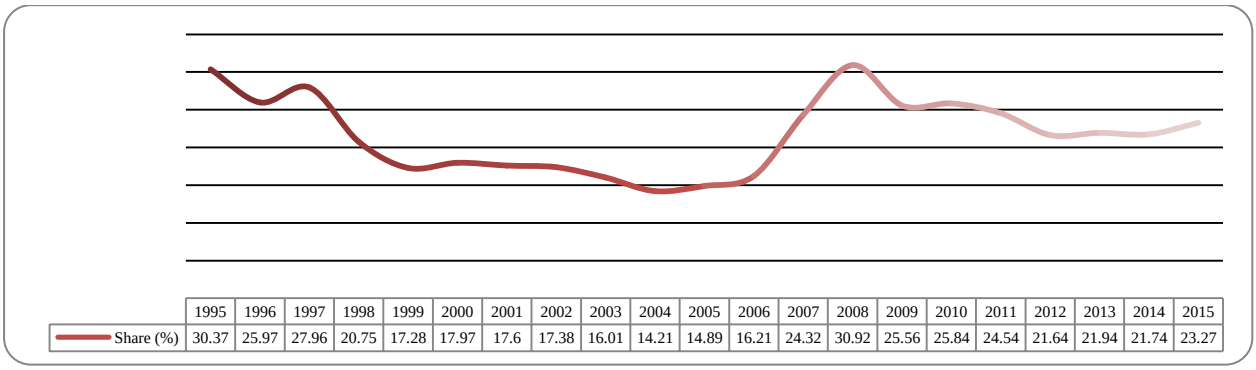
Research Results

The observations on the role of FDI in Vietnam's economy

The relationship between FDI and GDP in Vietnam can be seen from the perspective of time series.

According to GSO, in period 1995- 2015, the share of FDI in the total capital (at the current price) has been about one fifth of the total capital. (FIGURE 1)

FIGURE 1: SHARE OF FDI IN THE TOTAL CAPITAL



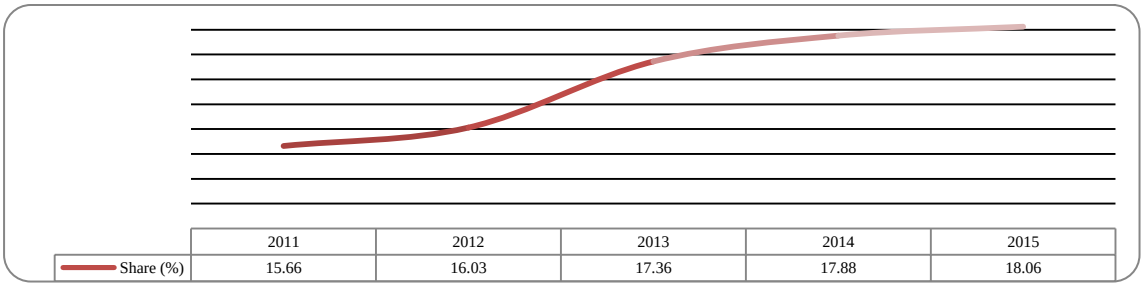
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Share (%)	30.37	25.97	27.96	20.75	17.28	17.97	17.6	17.38	16.01	14.21	14.89	16.21	24.32	30.92	25.56	25.84	24.54	21.64	21.94	21.74	23.27

- *Source: GSO (2016)*

Figure 1 represents the smallest share of FDI in the total capital in Vietnam is 14.12% (2004) and the biggest share is 30.92% (2008). On average, in the period, the share of FDI in total capital is 21.73%. Moreover, FDI with advantage of the modern technology, skill of management and wide business network brings the increased contribution to GDP in comparison with the remaining part of Vietnam's economy.

In term of final value creation, the share of FDI always takes about one sixths of GDP in the period 2011-2015. Specifically, in 2011, it accounts for 15.66% and in 2015, it increases to 18.06%. On average, in the period 2011-2015, it accounts for about 17%. (FIGURE 2)

FIGURE 2: THE SHARE OF FDI IN GDP IN THE PERIOD 2011-2015

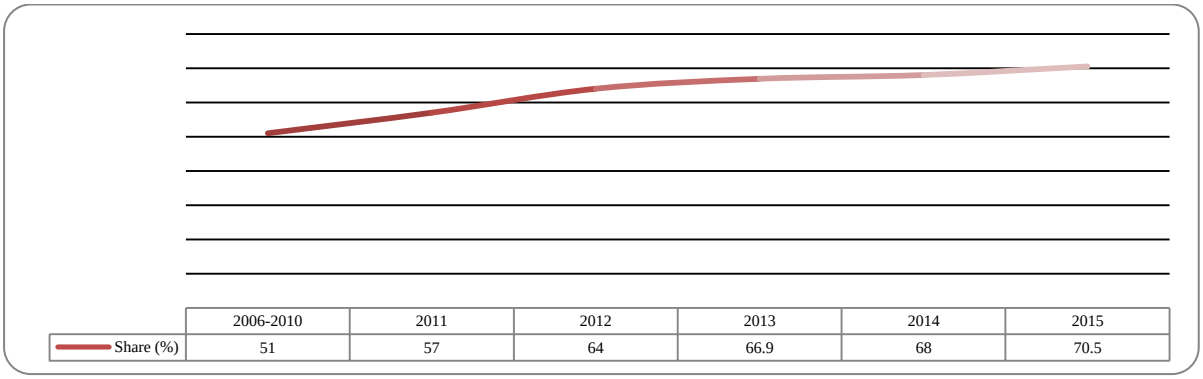


	2011	2012	2013	2014	2015
Share (%)	15.66	16.03	17.36	17.88	18.06

- *Source: GSO (2016)*

In term of export revenue, the share of contribution FDI to the total export revenue is also increased remarkably in period 2006-2015. In period 2006-2010, the share accounts for 51% and in 2015, it records at 70.5% in the total export revenue. According to Vietnam's Customs Directorate, the range of exported commodities of FDI mainly contains the computers, electronics devices and mobile spare parts meanwhile the remaining parts of Vietnam's economy export the agricultural products and the crude oil. (FIGURE 3)

FIGURE 3: THE CONTRIBUTION OF FDI TO TOTAL EXPORT REVENUE



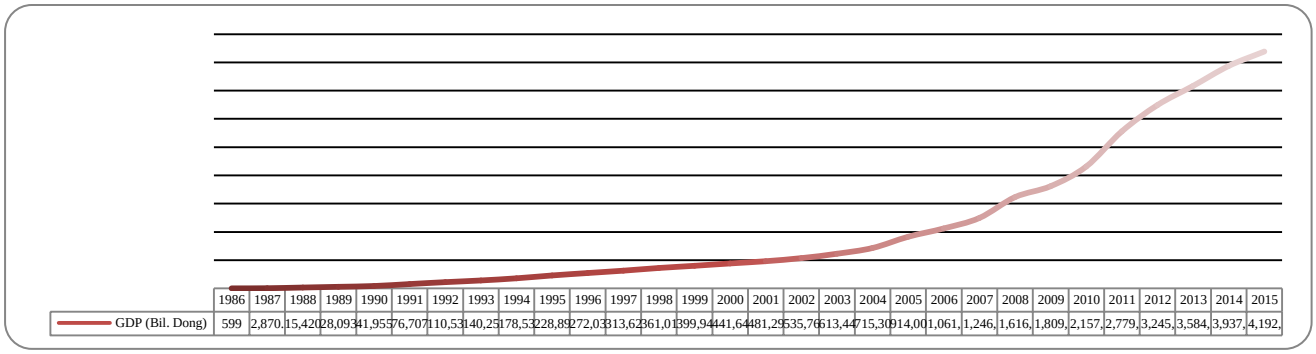
	2006-2010	2011	2012	2013	2014	2015
Share (%)	51	57	64	66.9	68	70.5

- *Source: GSO (2016)*

The evidence above on the one hand, represents the much success of Vietnam's policy towards FDI; on the other hand, it objectively proves new arguments that extremely concentrate on the dominant role of FDI over other economic sectors in Vietnam's economy. And Vietnam' economy can be called as an economy of FDI although Vietnam's Revised Constitution (2013) stipulates the dominant role of the state-owned economic sector. In other words, FDI could substitute the state-owned economic sector in Vietnam's economic structure if it would be developed as at the current growth rate.

In accordance with GDP, in the period 1986-2015, Vietnam's GDP has been increased by more than 1,000 times from 2,870 Bill. dong in 1988 to 4,192,862 Bill. dong in 2015 (FIGURE 4). It seems that FDI is the main momentum for Vietnam's economic growth.

FIGURE 4: VIETNAM'S GDP IN PERIOD 1986-2015



- *Source: GSO (2015)*

Moreover, departing from the formulation to calculate GDP as follows:

$$GDP = C + I + G + X - M$$

In which, C means the consumption, I is investment, G is government's expenditure, X is export and M is import.

It can be seen that FDI can encourage the consumption by supplying a lot of products and services. FDI increases the total capital, government's expenditure and export, import as well. To a greater extent of generation, FDI may have impacts on all components of GDP.

Combining all of the arguments mentioned above, it can be said that FDI is gradually making the main changes of GDP. However, to make clear the question whether or not does FDI change as the same GDP, it needs to use the testing technique. Such the question can be considered as the hypothesis that needs to be tested.

The result of chi-square test for regression between FDI and GDP in Vietnam

By using the time series in the period 1995-2015 caused by the shortage of data in 30 years in a unit of measurement, the paper tries to test the regression between GDP and FDI by 21 observations or valid cases. The official unit of measurement is used for both GDP and FDI in Vietnam by GSO not USD but Vietnam dong. This is decided by the regulation that only Vietnam dong is the official unit for all transactions in Vietnam's territory as a whole.

The result of testing is presented in the FIGURE 5 and FIGURE 6.

FIGURE 5: CASE PROCESSING SUMMARY

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
GDP * FDI	21	100.0%	0	0.0%	21	100.0%

FIGURE 6: CHI-SQUARE TESTS

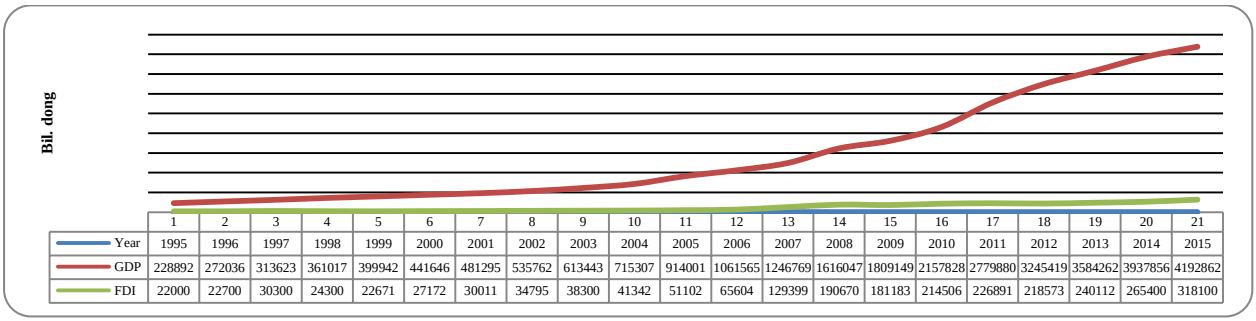
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	420.000[a]	400	.236
Likelihood Ratio	127.870	400	1.000
Linear-by-Linear Association	18.598	1	.000
N of Valid Cases	21		

a. 441 cells (100.0%) have expected count less than 5. The minimum expected count is .05.

All observations are valid cases (21). The Value of Pearson Chi-Square is 420. The degree of freedom is 400. The Asymptotic Significance (2-sided) = 0.236 (>5%). For the fact that 100% (>20%) have expected count less than 5. So it can draw conclusion that FDI and GDP in Vietnam has the linear independence. The changes in FDI have not been in linear regression with GDP.

To provide strong evidence for the conclusion about the linear regression between FDI and GDP in Vietnam, it can observe by the drawing the change of FDI and GDP simultaneously in FIGURE 7.

FIGURE 7: FDI AND GDP IN VIETNAM IN PERIOD 1995-2015



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
GDP	228892	272036	313623	361017	399942	441646	481295	535762	613443	715307	914001	1061565	1246769	1616047	1809149	2157828	2779880	3245419	3584262	3937856	4192862
FDI	22000	22700	30300	24300	22671	27172	30011	34795	38300	41342	51102	65604	129399	190670	181183	214506	226891	218573	240112	265400	318100

- *Source: GSO (2016)*

By direct observing by eyes, it is recognized that the lines of FDI and GDP in Vietnam in the period 1995-2015 haves not been in the direct relationship. Both lines have not been in the parallel status. The change of FDI is slower than that of GDP. That slow inflow of FDI into Vietnam cannot easily make difficulties in reducing GDP growth at the same rate.

Conslusions and Recommendations

The relationship between FDI and GDP is obvious. However, the relationship has different forms of like causality, functions and regression. For the causality aspect, FDI can be the main momentum for GDP growth. For the function aspect, GDP is a function of FDI. For the regression aspect, FDI has not the same change to the change of GDP. The statement that Vietnam's economy is an economy of FDI is incorrect. The number of observations is only 21 hence the conclusion from the chi-square is relatively reliable.

The performance of Vietnam's economy partially depends on FDI and there have been some evidence on it. However, the direct regression between FDI and GDP has not existed. Beside FDI, it is necessary to fully mobilize other sources of GDP growth like ODA (Official Development Assistance), private sources, remittance. In Vietnam, although the equality among economic sectors like state-owned, FDI and private ones, FDI has been put in higher priority over other sectors in terms of land, permits and taxation. Such the incentive granting FDI may cause the distortion of the market of factors of production and the market economy as a whole.

The paper points out the strong base for policy making towards FDI attraction into Vietnam to promote the impacts of FDI on GDP in all aspects. In additions, the quality of FDI and spillover effects should be used to serve the economic growth. The linkage between FDI and the remaining parts of the economy should be enhanced to master and observe the advantages of FDI.

The paper lacks of the analysis for specific industries and localities especially the province and city. Moreover, the different periods in attracting FDI to serve GDP growth have not been taken into consideration. The data measured by Vietnam dong may cause some difficulties in making comparison with that by USD. The comparing the different tests on the relationship between FDI and GDP have not been undertaken.

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