FOREIGN TRADE UNIVERSITY

EXTERNAL

# ECONOMICS REVIEW

N°83/2016

ISSN 1859 - 4050

IN CHARGE OF PUBLICATION
Assoc. Prof, Dr. Bui Anh Tuan

EDITOR - IN - CHIEF
Prof, Dr Hoang Van Chau

GENERAL EDITOR ASSISTANT
Assoc. Prof, Dr. Nguyen Van Minh

MANAGING EDITOR
Assoc. Prof, Dr Dao Ngoc Tien
Assoc. Prof, Dr Nguyen Van Thoan
Nguyen Ngoc Bich
Dinh Mai Lien



PUBLISHING LICENSE
180/GP-BVHTT

EDITORIAL OFFICE
91 Chua Lang Str., Hanoi
Tel: (84-4) 38356800 (ext 331)
Fax: (84-4) 38343605
Email: tapchi@ftu.edu.vn
Website: tapchiktdn.ftu.edu.vn

# CONTENTS

## RESEARCH ON ECONOMICS AND INTEGRATION



## NEWS

**THE EXTERNAL ECONOMIC REVIEW (EER)** is an academic journal hosted by the Foreign Trade University, Vietnam, and it is published twice a year in English. The EER welcomes both theoretical and empirical papers in the fields of economics, international trade, finance and banking, international business,…

**ISSN Number:** ISSN: 1859-4050

**Submission Guidelines**

1. Manuscripts submitted to the External Economic Review (EER) must be original and must NOT be submitted elsewhere while being considered for EER. To ensure impartiality and quality, all manuscripts submitted to the Journal are subject to a blind peer-review process before they are accepted for publication.

2. Manuscripts must be in English and should be written using MsWord, with New Times Roman font, type size 12 with 1.5 line spacing. Foreign words should be in italics. The length should not be more than 8,000 words (inclusive of tables, figures, notes, references and appendices).

3. The manuscripts should begin with an abtract of around 100-200 words, describing the main arguments and conclusions of the article, and a list of 5-6 keywords in alphabetical order.

4. The title of the manuscripts should be bold and centred. Section heading should be bold, left justified and numbered sequentially in Arabic numerals. First level heading (e.g 2.1) should be in italics and bold, and the second level subheading (e.g 2.1.1) should be in italics and not bold. All pages should be numbered consecutively.

5. Tables and figures should be numbered separately and sequentially using Arabic numerals. Each table and figure should be given an informative title.

6. Refences: Citations in the text should use the Harvard system of short references (e.g Dunning, 2000, p.2; Smith, 2005a, 2005b). Endnotes should be kept to a minimum, indicated by superscript figures in the text, and placed at the end of the manuscript. Bibliographical list containing all the works referred to, in alphabetical order, to appear after the endnotes.

8. Copyright: It is a condition of publication that authors agree to transfer the copyright of the manuscript, including abstract to EER. The transfer will ensure the widest possible dissemination of information, including, but not limited to, print and electronic modes of dissemination. Authors must declare any sponsorship or financial ties that may cause conflicts of interests.

9. Submissions should be sent by email to tapchi@ftu.edu.vn or by hard copy to the following address:

**THE INSTITUTE OF ECONOMICS AND INTERNATIONAL TRADE (iEIT)**
**10th Floor, Building A, Foreign Trade University**
**91 Chua Lang Street, Dong Da District, Hanoi, Vietnam**
**Email: tapchi@ftu.edu.vn**

# EXCHANG RATE RISK AND ECONOMIC GROWTH IN VIETNAM

*Nguyen Thi Thuy Vinh*[*]

**Abstract**

*This paper examines the impact of exchange rate risk on economic performances of Vietnam in period 1991-2009 by using Autoregressive Distributed Lag (ARDL) approach. The empirical results show that there is existence of long run relationships between REER volatility and output. Impact of exchange rate risk is statistically significant on economic performances in Vietnam. An increase in exchange rate risk would hurt economic growth. The level relationships also show that growth may be improved when REER depreciates..*

***Key words:*** *Exchange rate risk, ARDL approach, Output, Vietnam.*

***Date of submission: 14th April 2016; Date of revision: 20th April; Date of approval: 25th April2016.***

## 1. INTRODUCTION

Understanding the link between exchange rate risk and economic performances such as economic growth, international trade and investment is of particular concern given that more economies, including transition and developing economies, have adopted a more flexible exchange rate arrangement. It is important to understand the implications of such a move for economic activity when the transition to flexible arrangement of exchange rate has been accompanied by increases in the volatility of both nominal and real exchange rate (Caporale and Pittis, 1995; Hasan and Wallace, 1996; Kent and Naja, 1998).

Over 30 years, Vietnam has made a shift from a centrally planned economy to a market economy. This period is known as *Doi Moi* - Renovation. The economic reform has been implemented through a variety of measures aiming to reform economic structure, attract foreign investment, establish gradually a new legal framework directing the economy towards market economy, and to integrate step-by-step into the regional and global economy. From that point of view, Vietnam government has continued to deregulate many sectors, and changed from direct control to indirect control of its economy, including exchange rate system. However, while Vietnam's financial market is still weak, the relaxation on the control of exchange rate could lead to an increase in the exchange rate risk (uncertainty), resulting in the increase in dollarization. The increase in exchange rate volatility could affect negatively the economic performances and brings serious challenges for Vietnam in the period of integrating into world's economy. Therefore, it is worthwhile to investigate the effect of exchange rate risk on growth in Vietnam context. The

[*] PhD, Foreign Trade University , Vietnam; Email: vinhntt@ftu.edu.vn.

findings may have significant implications for Vietnam to find an exchange rate arrangement that is suitable for its process of accessing into the world economy while ensuring the continuation of rapid economic growth.

There are two apparently opposite views in the literature when dealing with the effects of exchange rate regimes and volatility on economic growth. The first view is called a "*costs of volatility*" argument. Many economists believe that exchange rate uncertainty reduces international trade, discourages investment and compounds the problems people face in insuring their human capital in incomplete asset markets (Obstfeld and Rogoff, 1995). De Grauwe and Schnabl (2004) emphasize that when exchange rate movements are an independent source of volatility and are also driven by speculative dynamics; anticipated entry into monetary unions may help small open economies to avoid negative macroeconomic effects of exchange rate volatility. Schnabl (2008) also finds a positive association between exchange rate stability and growth in 41 mostly small open economies at European Monetary Union. The second view, which is defined as "*advantage of flexibility*" argument, considers that terms of trade shocks are amplified in countries with more rigid exchange rate regimes and that, after controlling for other factors, countries with flexible exchange rate regimes grow faster (Edwards and Yeyati, 2003). The advantage of flexibility effect also seems supported by empirical evidence.

Bagella *et al*. (2006) suppose that these apparently conflicting views can be easily reconciled when exchange rate volatility is properly measured with a multilateral trade weighted exchange rate (real effective exchange rate or REER). Their research finds that the effective exchange rate risk variable performs much better than the bilateral exchange rate volatility with dollars. Therefore, this study investigates the impact of real effective exchange rate risk on growth for Vietnam applying Autoregressive Distributed Lag (ARDL) bounds testing methodology of Pesaran *et al.* (2001) to the analysis of level relationships for models including output, real effective exchange rate volatility, and the real effective exchange rate. The empirical results show that there is existence of long run relationships between REER risk and output. Impact of REER volatility is statistically significant on economic performances in Vietnam. An increase in REER volatility would hurt economic growth. The level relationships also show that growth may be improved when REER depreciates.

This paper is organized as follow. Section 2 provides a brief of the theoretical literature which outlines the reasoning behind why increased exchange rate risk might hurt or help the economic growth. This section also covers the empirical literature review. Next, Section 3 shows an appropriate measure of exchange rate risk for Vietnam. In Section 4, an empirical study is conducted using a approach introduced by Pesaran *et al*. (2001) to analyse level relationships. Concluding remarks are outlined in Section 5.

## 2. THEORETICAL FRAMEWORK AND LITERATURE REVIEW

Theoretical evidence concerning the impact of exchange rate stability on growth is mixed. The theoretical arguments in favor of flexible

exchange rates are mainly of macroeconomic nature, as flexible exchange rates allow for an easier adjustment in response to asymmetric country specific real shocks. In contrast, there are also macroeconomic benefits of fixed exchange rates as they contribute to macroeconomic stability and help to avoid "beggar-thy-neighbour" depreciations in highly integrated economic regions. Furthermore, it is argued that for small open countries in the economic catch-up process fixed exchange rates provide a more stable environment for the adjustment of asset and labor markets (McKinnon, 1963). Small open economies with flexible exchange rate regimes are argued to have higher risk premiums on interest rates as uncertainty in asset markets is increasing (Schnabl, 2008). From a microeconomic perspective, low exchange rate volatility can be associated with lower transaction costs for international trade and capital flows thereby contributing to higher growth.

The empirical literature tends to find weak evidence in favor of a negative impact of exchange rate volatility on growth. The panel estimations for 183 countries by Edwards and Levy-Yeyati (2005) over the period 1974 - 2000 find evidence that countries with more flexible exchange rates grow faster than countries with fixed exchange rate. Eichengreen and Leblang (2003) reveal a strong negative relationship between exchange rate stability and growth for 21 countries over a period of 120 years. They find that less flexible exchange rate regimes are associated with slower growth and suggest that a more flexible exchange rate is especially beneficial for low-income countries. They conclude that the results of such estimations strongly depend on the time period and the sample. For large country samples such as by Ghosh *et al*. (2003) there is weak evidence that exchange rate stability affects growth in a positive or negative way. However, Schnabl (2008) investigates the impact of exchange rate stability on growth for a sample of 41 mostly small open economies at the EMU periphery and reveals a robust negative relationship between exchange rate volatility and growth for countries in the economic catch-up process with open capital accounts.

The previous work investigating effect of exchange rate uncertainty over time on growth within a single country is very few. Amuedo-Dorantes and Pozo (2001a) cannot discern any significant impact of real exchange rate uncertainty on the production indexes of four countries: Korea, Singapore, Chile and Mexico. Azid *et al.* (2005) investigate impact of exchange rate volatility on growth in Pakistan and find that this relationship is positive but insignificant.

## 3. EXCHANGE RATE RISK MEASUREMENT

In the literature, we saw that most papers measuring exchange rate risk used the volatility of bilateral exchange rate. We argue that this is not the most accurate measure of a country's exchange risk for the case of using aggregate data. Bagella *et al*. (2006) show advantages of real effective exchange rate (REER) volatility comparing with bilateral exchange rate volatility and find that this variable performs much better than the bilateral exchange rate volatility. First, it includes trade partners' externalities in the evaluation of the effects of exchange rate volatility on economic performances. This inclusion is fundamental because a country might have low bilateral exchange rate volatility with a

leading currency (for example, the US dollar for case of Vietnam) but import instability via variability of governance and economic policies of its trade partners. Individual country stability is therefore insufficient if it is not framed into regional stability and this is why the REER volatility variable is more likely to measure the costs of missing regional integration. A second important advantage of this measure is that favorable and unfavorable exchange rate movements with different partners may compensate each other, thereby dampening the negative effects of individual bilateral exchange rate volatility on economic performances (Qian and Varangis, 1994). This effect is incorporated into REER volatility measure, which conveniently takes into account the potential impact of diversification of trade and investment.

Then, we use a measure of real exchange rate volatility where bilateral exchange rates are weighed for their relative trade share. The real effective exchange rate index is defined in foreign currency terms (an increase in its value indicates an appreciation of Vietnamese currency) and is estimated by the geometric mean method as the following formula:

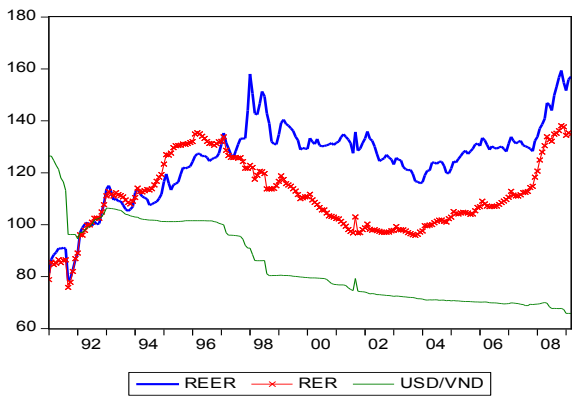
$$REER_t = \prod_{j=1}^{n} (e_j \frac{P_t}{P_j})^{w_{jt}} \quad (1)$$

where $REER_t$ is the real effective exchange rate of Vietnam at time $t$; $n$ is the number of trading-partner currencies in the trade basket. The currency basket includes twenty of Vietnam's largest trading partners during the last 20 years (Japan, Singapore, China, United Sates, South Korea, Australia, Thailand, Germany, Hong Kong, Malaysia, France, Indonesia, United Kingdom, Netherlands, Philippines, Italy, Switzerland, India, Spain, and Canada). Each selected trading partner accounted for at least 0.5 percent of Vietnam's total foreign trade during the last ten years. The basket covered about 80 percent of total trade in every year since 1998. The trade weights are re-calculated annually; $e_{jt}$ is the nominal bilateral exchange rate relative to currency $j$, measured as the number of units of currency $j$ per unit of the domestic currency and expressed as an index; $w_{jt}$ is the weight assigned to currency $j$ at time $t$, reflecting the contribution of the country of currency $j$ to the Vietnam's foreign trade; $P_t$ is the domestic price index at time $t$ and $P_{jt}$ is the price index of foreign country $j$ at time $t$.

Figure 1 describes the movement of REER and bilateral rate of Vietnam Dong against US Dollar in both real and nominal term for period January 1990 - March 2009. From Figure 1, it can be seen clearly that Vietnamese authorities were inclined to maintain a stable nominal USD/VND exchange rate, with strong depreciation in 1990-1991 because of applying a floating exchange rate system and in 1997-1998 due to the Asian financial crisis. Nominal exchange rate also slightly depreciated in period 1999-2003 after the government introduced a new principle for setting the exchange rate. REER and RER tend to appreciate during 1991-1996 as the inflation differential became unfavorable to Vietnam. When the Asian financial crisis broke out in 1997, REER of Vietnam continued to appreciate sharply because of the precipitous falls in the values of a number of Asian trading partner's currencies. After such large changes, the REER may have attracted greater attention than before. The USD/VND rate underwent several large-scale devaluations in 1998, sufficient to

bring about a considerable depreciation in REER and RER, especially when Asian currencies began to stabilize against the USD with domestic inflation being kept not too far out of line with trading partners. By 2003, the REER had fallen back to a level last prevailing before the Asian financial crisis. From 2004, the VND was holding relatively steady against the USD, and the USD itself was weakening against many other currencies, then VND depreciated slightly in nominal terms. However, its high inflation rate was much more than offset this nominal depreciation tendency, so that the VND tended to appreciate in real terms. REER at the end of 2008 was about 30 per cent higher than at the beginning of 2004.

**Figure 1: REER, Nominal and Real Exchange Rate (USD/VND)**




The methods of measuring volatility have evolved over time to reflect new advances in econometric techniques. Nonetheless, a clearly dominant approximation for uncertainty has not yet emerged (Bahmani-Oskooee and Hegerty, 2007). The most common is some measures of variance, but the exact construction of this measure differs from study to study. Amuedo-Dorantes and Pozo (2001a) argue that the ARCH approach allows us to better capture exchange-rate uncertainty for time series analysis. In another study, Amuedo-Dorantes and Pozo (2001b) investigate the relationship between exchange rate volatility and FDI in the United States and find that ARCH measure is significant. In addition, Seabra (1995) tests several measures of exchange rate uncertainty that are prevalent in the literature in his study of purchasing power parity in 11 Latin American countries. He concludes that ARCH-based methods are most efficient. This measure is also used in most of previous studies. Therefore, to determine the volatility of real exchange rate, we use the conditional variance of the log of real exchange rate.

The conditional variance ($h$) of the log of real exchange rate is used to measure the risk (uncertainty) associated with the real effective exchange rate or bilateral real exchange rate with US dollar. Volatility variables are derived from a GARCH model with specifying a GARCH (1,1) model because it is the most robust of the family of volatility models (Engle, 2001)

**Table 1: ADF Tests for Stationary of REER**

| Variable | Level | | First difference | |
|---|---|---|---|---|
| | *constant* | *constant & trend* | *constant* | *constant & trend* |
| REER | -2.04(2) | -2.04(2) | -11.84(1) | -11.87(1) |

Note: At the 5% level of significance, the critical value for each test with *constant* is -2.87 and with *constant & trend* is -3.43. Number of lags is shown in parentheses.

Table 1 shows that REER series have I(1) then the model for the mean of each series is specified with an ARIMA model. Lagrange Multiplier test is used to test for heteroskedasticity in the errors of mean equations and to find the best fitting autoregressive model to measure the forecast of uncertainty. The models for the meaorted in Table 2.

**Table 2: Mean and Variance Equations for REER Movements**

$$REER_t - REER_{t-1} = 0.0018 + 0.0483\ (REER_{t-1} - REER_{t-2}) + e_t$$

(9.6e-4) (7.9e-2)

$$h_t = 0.00017 + 0.2367e_{t-1}^2 + 0.7466h_{t-1}$$

(4.94e-6) (0.0452) (0.0253)

$Q(12)$ = 6.51 [0.89] $Q(24)$ = 22.10 [0.57]

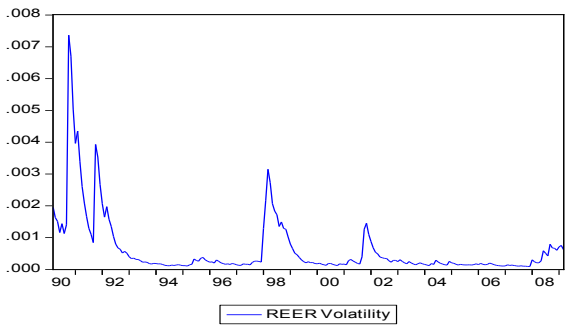
$Q^2(12)$ = 10.29 [0.59] $Q^2(24)$ = 13.02 [0.97] $LM(1)$ = 0.10 [0.29]

Estimation Period: 1990M1 – 2009M3

Note: REERrepresents real effective exchange rate. htrepresents the conditional variance, the variance of the error term for the mean equation above it. $Q(12)$ and $Q(24)$ represent the Ljung–Box statistic for up to twelve and twenty four orders autocorrelation in the residuals, respectively. $Q^2(12)$ and $Q^2(24)$ represent the Ljung–Box statistic for up to twelve and twenty four orders autocorrelation in the squared residuals, respectively.LM(1) represents Engle's statistic for an additional ARCH term in the conditional variance equation.

Figure 2 describes the REER volatility in Vietnam for 20 years. Before 1992, the exchange rate volatility is very high as Vietnam adopted a floating exchange rate regime aiming to devalue the Vietnamese currency that was overvalued in previous years because of the existence of the centrally planned economy for a long time. After that, it can be seen that Vietnam has used the USD as a key nominal anchor therefore the volatility of real exchange rate is very small. It only increases if there is an adjustment in nominal exchange rate or trading band. As discussed above, the State Bank of Vietnam (SBV) had to devalue three times the Vietnamese Dong by 16.3 per cent and widen trading band from +/- 1% to +/-10% because of the Asian financial crisis 1997-1998. These actions increased the real effective exchange rate volatility. After introducing a new principle for setting the exchange rate, the volatility was very small exception of the volatility in 2002 when United State implemented a weak dollar policy and trading band of USD/VND exchange rate was widened. It seems that there is little volatility of exchange rate from 2004 to 2007 as the official exchange rate was almost unchanged. In 2008, SBV increased trading band four times (from +/- 0.5% to +/-0.75% in January, +/- 1% in March, +/-2% in June, and to +/-3% in November) that has never happened before. These adjustment increased exchange rate fluctuation.

**Figure 2: Volatility of Vietnamese REER (1990 January - 2009 March)**




## 4. EMPIRICAL INVESTIGATIONS

### *4.1. Econometric Model and Data Descriptions*

Empirical studies show that most of the time series are not stationary. Since facing a spurious regression problem among these series which include a unit root, some methods are suggested to solve this problem. One of them is taking the differences of the series and then putting them into regressions. This method leads to the loss of information that is important for the level relationships. As long as the first differences of the variables are used, determining a potential long run relationship between these variables

becomes impossible. This is the point of origin of co-integration analysis.

The co-integration approach developed by Engle and Granger (1987) overcame this problem. According to this approach, time series which are not stationary at levels but stationary in the first difference can be modeled with their level states. In this way, loss of information in the long run can be prevented. However, this approach becomes invalid if there are more than one co-integration vectors. Moving from this point, with the help of the approach developed by Johansen (1988), it is possible to test how many co-integration vectors there are among the variables by using the VAR model in which all the variables are accepted as endogenous. Therefore, unlike the Engle Granger method, a more realistic examination is provided without limiting the test in one co-integration vector expectation.

However, in order to perform these tests developed by Engle and Granger (1987), Johansen (1988) and Johansen and Juselius (1990), the condition must be met that all series should not be stationary at the levels and they should become stationary when the same differences are taken. If one or more of the series are stationary at levels, that is to say I(0), the co-integration relationship cannot be examined with these tests. Bounds test approach developed by Pesaran *et al*. (2001) removes this problem. According to their approach, the existence of a co-integration relationship can be examined between the series regardless of whether they are I(0) or I(1) (under the circumstance that dependent variable is I(1) and the independent variables are either I(0) or I(1)). This point is the greatest advantage of the bounds test among all the co-integration tests. Moreover, this approach can distinguish dependent and independent variables and is more suitable than another method for small sample size (Ghorbani and Motallebi, 2009; Bassam, 2010).

Pesaran *et al*. (2001) suggest their method based on Autoregressive Distributed Lag (ARDL) approach. ARDL model is changed to error correction model like below:

$$\Delta y_t = c_0 + c_1 t + \pi_{yy} y_{t-1} + \sum_{i=1}^{k} \pi_{yi} x_{t-1}^{i} + \sum_{j=1}^{p-1} \lambda_j \Delta y_{t-j} + \sum_{i=1}^{k} \sum_{j=0}^{p-1} \gamma_{t-j}^{i} \Delta x_{t-j}^{i} + u_t \qquad (2)$$

where $k$ is the number of independent variables, the disturbances $u_t$ are serially uncorrelated.

The ARDL approach uses two steps to estimate the level relationship. First step is to determine whether a level relationship exist between the variables in equations (2). The null hypothesis of no level relationship among variables is tested (i.e. $H_0$: $\pi_{yy} = 0, \pi_{yi} = 0 \quad i = 1,..., k.$) by using the F-test for the joint significant of the lagged levels coefficient. Two sets of critical values are generated. One set refers to I(1) series and the other for I(0) series. Here, the critical values for I(1) series are referred to as the upper bound critical values while the critical values for I(0) series are referred to as the lower bound critical values. If the estimated F-statistics is greater than the upper bound critical values, we conclude that the variables in question are cointegrated. Also, if the estimated F-statistics falls between the lower and the upper bound critical values, the decision about cointegration among the variables involved is inconclusive. And if the estimated F-statistics is less than the lower critical values, the null hypothesis of no cointegration cannot be rejected. Second step is to estimate the long-run and the short-run coefficients by using the ARDL approach if the long-run relationship is established between the variables. The lag orders of the variables are chosen using statistic criteria, e.g. Akaike Information Criteria (AIC), Schwarz Information Criteria (SIC).

In this study, we investigate the impact of exchange rate volatility on growth, export, and FDI performances using bounds test approach developed by Pesaran *et al*. (2001). Since we are most interested in the impact of the shocks to the real exchange rate and to real exchange rate volatility on output of Vietnam then we estimate a ARDL model with three variables which is applied by Amuedo-Dorantes and Pozo (2001a) for single country (Chile, Korea, Mexico, Singapore). In addition, we include a dummy variable $D_S$ to account for the effect of the change in exchange rate system on economic performance. Then the equations for estimating are follow.

$$\Delta IO_t = a_0 + a_1 t + a_2 IO_{t-1} + a_3 REER_{t-1} + a_4 VOL\_R_{t-1} + \sum_{j=1}^{l-1} a_5^j \Delta IO_{t-j} + \sum_{j=0}^{l-1} a_6^j \Delta REER_{t-j} + \sum_{j=0}^{l-1} a_7^j \Delta VOL\_R_{t-j} + a_8 D_S + u_t \quad (3)$$

where *IO* is real industrial output, *REER* is real effective exchange rate, *VOL_R* is real effective exchange rate volatility. The dummy variable is defined by $D_S = 1$, over the period March 1999 - December 2003, 0 elsewhere[1].

Data of *IO* is collected from General Statistics Office of Vietnam (GSO). The others are calculated from data of IMF (IFS and DOT). Because data of real industrial output is available from January 1991 then the output equation is estimated using monthly data from January 1991 to March 2009.

All data are seasonally adjusted. Prior to estimation, all the variables are transformed into natural logarithms.

### *4.2. Results and Discussions*

*Unit root test*

Before constructing our models, we examine the series in order to determine whether they are stationary or not. Augmented Dickey–Fuller (ADF) unit-root tests are conducted including a drift term and both with and without a trend. Table 3 contains the results from the unit-root tests.

**Table 3. ADF Tests for Unit Root**

| Variable | Level | | First difference | |
|---|---|---|---|---|
| | *constant* | *constant & trend* | *constant* | *constant & trend* |
| *VOL_R* | -6.05(12) | -5.56(12) | -4.40(12) | -4.64(12) |
| *IO* | -0.22(12) | -1.08(12) | -5.89(12) | -5.87(12) |

Note: At the 5% level of significance, the critical value for each test with *constant* is -2.87 and with *constant & trend* is -3.43. Number of lags is shown in parentheses.

The results indicate that, with the exception of REER volatility, all the series are non-stationary and the ADF test results are invariant as to whether the unit-root tests are conducted with or without a linear trend. The null hypotheses of difference-stationary processes for each of the nonstationary series are accepted. Unit root tests show that dependent variables are I(1) and independent variables are mixture of I(0) and I(1). Then, ARDL approach is more suitable than other approaches for investigating relationships in level of variables.

*Bounds Testing for Level Relationships*

It is important that the lag order of the underlying VAR is selected appropriately. There is a delicate balance between choosing lag order sufficiently large to mitigate the residual serial correlation problem and, at

[1] Before February 1999, SBV set the official exchange rate. After that, the government introduced a new principle for setting the exchange rate.An average inter-bank rate of exchange between VND against USD would be official exchange rate in the following day. This new arrangement has been viewed as a turning point in the exchange rate policy in Vietnam, aiming at gradually moving toward greater exchange rate flexibility and giving more weight to market forces in exchange rate determination. However, from 2004, the governor of the SBV was quoted as publicly stating that the VNDwould not be allowed to depreciate by more than1 percent per annum. As it turned out, the official USD/VND ratewas again almost unchanged from January 2004 toDecember 2007.

the same time, sufficiently small so that the conditional ECMs are not unduly over-parameterized. Particularly in view of the limited time series data which are available a decision must be made concerning the time trend in each equation and whether its coefficient should be restricted.

To determine the appropriate lag length *l, m, n* and whether a deterministic linear trend is required in addition to the equation, we estimate the conditional model (3) by least square, with and without a linear time trend. Because coefficients of trend are always significant in the regressions of output then we only consider with case of regressions with deterministic trend. Tables 4 give Akaike's and Schwarz's Information Criteria denoted respectively by AIC and SIC, and Lagrange multiplier (LM) statistics ($\chi^2_{SC}$) for testing the hypothesis of no residual serial correlation against orders 1 and 6 for estimating equations (monthly data).

The lag orders selected by AIC and SIC are 2 and 1, respectively while the $\chi^2_{SC}$ statistics suggest using a relatively high lag order: 4 or 5. In view of the importance of assumption of serially uncorrelated errors for the validity of the bounds test, it seems prudent to select lag to be either 4 or 5. However, for completeness, we report test results for $l = 2, 3, 4$, and 5.

**Table 4: Statistics for Selecting the Lag Order**

| *l* | AIC | SIC | $\chi^2_{SC}(1)$ | $\chi^2_{SC}(6)$ |
|---|---|---|---|---|
| 1 | -3.13 | 3.00 | 23.39[0.00] | 29.14[0.00] |
| 2 | -3.16 | -2.98 | 0.12[0.72] | 11.85[0.07] |
| 3 | -3.14 | -2.92 | 3.67[0.06] | 9.88[0.13] |
| 4 | -3.15 | -2.88 | 0.36[0.55] | 9.61[0.13] |
| 5 | -3.13 | -2.81 | 1.02[0.31] | 10.45[0.11] |
| 6 | -3.11 | -2.75 | 3.17[0.07] | 11.62[0.07] |

**Note:** AIC = $-2l/T + 2k/T$ and SIC = $-2l/T + (k\log T)/T$ where $l$ is the maximized log likelihood value, $T$ is the number of observations, and $k$ is number of freely estimated coefficients. P-values are in brackets.

Table 5 gives the values of the F-statistics for test the existence of level relationships under two different scenarios. The critical value bounds of the statistics $F_{IV}$ and $F_V$ are given in Pesaran *et al*. (2001) and depend on the number of independent variables in regressions.

**Table 5: *F-statistics* for Testing the Existence of a Levels**

| *l* | $F_{IV}$ | $F_V$ | $t_V$ |
|---|---|---|---|
| 2 | 12.83*** | 17.02*** | -6.97*** |
| 3 | 12.38*** | 16.42*** | -6.80*** |
| 4 | 14.07*** | 18.65*** | -7.27*** |
| 5 | 11.15*** | 14.73*** | -6.31*** |

Note: $F_{IV}$ is the F-statistic for testing $a_1 = a_2 = a_3 = 0$ in (3). $F_V$ is the F-statistic for testingin $a_2 = a_3 = a_4 = 0$ (3). $t_V$ is the t-statistic for testing $a_2 = 0$ in (3). The 1% critical value bounds are (4.99, 5.85) and (6.34, 7.52) for $F_{IV}$ and $F_V$, respectively. The 1% critical value for $t_V$ is (-3.96, -4.53). *** is significant of 1%.

The result of F-statistics indicates that at 0.05 significance level, null hypothesis of no level relationship is rejected for all cases of selected lag orders (the results from the application of the bound t-test support the results of F-tests). In other words, results of bounds tests support the existence of level relationships in the estimating equations.

*Level Relationships*

First, the orders of ARDL models were selected by searching across the $6^3 = 216$ ARDL models. The estimate results in the choice of ARDL (2, 0, 1) for the estimating equation. By normalizing on output, from the selected ARDL models, the empirical results of the relationships in level are presented in equation (4).

$$IO_t = -20.5309\, VOL\_R_t - 0.3629\, REER_t + 5.0472 + \hat{\varepsilon}_t \quad (4)$$
$$(9.8849) \qquad (0.0682) \qquad (0.3194)$$

where $\hat{\varepsilon}_t$ is the equilibrium correction term and the standard errors are in parenthesis.

The level estimate is highly significant and has the expected sign. The result shows that

exchange rate volatility affects significantly negative on Vietnam economic performance. A rise in exchange rate volatility decrease output. Vietnam is small open economy, the international price level is given and traded goods make up a high share of the domestically consumed goods, exchange rate stability ensures domestic price stability. The welfare effect of stable exchange rates originates in macroeconomic stability which provides a favorable environment for investment and consumption. In addition, financial market in Vietnam is underdeveloped then exchange rate volatility is associated with higher transaction cost because uncertainty and hedging exchange rate risk is costly. From a short-term perspective, stabilization in exchange rate can foster economic growth by a more efficient international allocation of capital when transaction costs for capital flows are removed (McKinnon, 1973). Moreover, Vietnam is a dollarized economy, for the preiod of 1991-2009, the degree of dollarization in Vietnam is always above 20 per cent in comparison with 7-10 per cent in other countries in Southeast Asia such as Thailand, Malaysia and Indonesia due to massive flow of remittance and foreign investment and increased export earnings over the past years (Son, 2009). Then fluctuations in exchange rate level constitute a risk for growth as they affect the balance sheets of banks and enterprises where foreign debt tends to be denominated in foreign currency (Eichengreen and Hausmann, 1999). The level relationship also indicates that an appreciation will decrease economic growth.

Table 6 provides the result of the error correction representation of estimated ARDL model. The result indicates that the error correction term, EC_IO(-1), have the right sign (negative) and is statistically significant. This is evidence of cointegration relationships among variables in the model. The estimate value of error correction terms imply that the speed of adjustment to the long run equilibrium in response to the disequilibrium caused by short run shocks of the previous period is 55.91 per cent. This numbers implies that the adjustment of the output to changes in the independent variables is moderate and may take about more than 5 months.

**Table 6: The ECM for the Selected ARDL Model**

| Regressor | ARLD (2, 0, 1) |
|---|---|
| *ΔLIO(-1)* | - 0.2094 (0.0647)*** |
| *ΔVOL_R* | - 2.2291 (11.188) |
| *ΔREER* | - 0.6094 (0.1715)*** |
| *c* | 0.0006 (0.0080) |
| *trend* | 0.0065 (0.0009)*** |
| $D_S$ | - 0.0526 (0.0104)*** |
| *EC_IO(-1)* | - 0.5591 (0.0792)*** |
| Adj. R-squared | 0.4111 |
| Serial Correlation | F(6,204) = 1.36[0.23] |

*EC_IO = IO+20.5309VOL_R+0.3629REER - 5.0472*

Note: *, **, and *** are respectively significant of 10%, 5%, and 1%. The numbers in parentheses are standard errors. The number in bracket is p-value.

## 5. CONCLUSION

This study investigates the impact of exchange rate volatility on economic growth in Vietnam for period January 1991 - March 2009. We use a multilateral real exchange rate and the GARCH (1, 1) model to measure exchange rate volatility. This measurement is supposed as the best volatility proxy to reconcile conflicting views of costs and advantages of flexible exchange rate system. This study also applies a approach called ARDL to the problem of testing the existence of a level relationship between a dependent variable and a set of regressors when regressors are a mixture of I(1) and I(0) because measure of exchange rate volatility is stationary while

other variables in models are non stationary.

The empirical result shows that there exits of level relationship in output model which accounts for impact of real exchange rate and real exchange rate volatility. Economic performances will be injured by exchange rate volatility. An increase in exchange rate volatility will reduce significantly economic growth. Therefore, a stable of exchange rate system with main trading partners is needed to enhance economic growth.

From the beginning of 2016 the SBV announces a central exchange rate every day for the VND/USD, which would be used by financial institutions authorized to trade in foreign currencies. The rate is calculated based on the three benchmarks: demand and supply of the Vietnam dong, the exchange rates for a basket of eight strong foreign currencies, and for any change to balance macro-economic needs. Besides announcing the central rate daily, each week the SBV will calculate the cross exchange rate between the VND and the eight other currencies including the USD, the Euro, the Yuan, the Japanese Yen, the Singapore Dollar, the South Korean Won, the Thai Baht, and the Taiwan Dollar. This change is the right direction to enhance economic growth. The new regime will facilitate stronger performance in the foreign currency derivatives market, meeting the requirements for risk prevention in exchange rates and increase liquidity in the market.❑

**References**


1. Amuedo- Dorantes, C. and S. Pozo (2001a). "Uncertainty and Economic Performances," Review of Development Economics 5(3), pp. 363-374.
2. Amuedo- Dorantes, C. and S. Pozo (2001b). "Foreign Exchange Rates and Foreign Direct Investment in the United Stated," The International Trade Journal 15 (3), 323-343.
3. Azid T., M. Jamil and A. Kousar (2005), "Impact of Exchange Rate Volatility on Growth and Economic Performance: A Case Study of Pakistan, 1973–2003," The Pakistan Development Review 44 (4), Part II (Winter 2005), pp. 749–775.
4. Bagella M., L. Becchetti, I. Hasan (2006), "Real Effective Exchange rate Volatility and Growth: A Framework to Measure Advantages of Flexibility vs. Costs of Volatility ", Journal of Banking & Finance 30, pp. 1149–1169.
5. Bahmani-Oskooee M. and S. W. Hegerty (2007), "Exchange Rate Volatility and Trade Flows: a Review Article," Journal of Economic Studies 34 (3), pp. 211-255.
6. Bassam AbuAl-Foul (2010), "The Causal Relation between Savings and Economic Growth: Some Evidence from MENA Countries," The 30th MEEA Meeting, Atlanta (Jan.2010). Available at: http://www.meeaweb.org/meeapapers/EconomicGrowth.pdf
7. Caporale, G. M. and N. Pittis (1995), "Nominal Exchange Rate Regimes and the Stochastic Behavior of Real Variables," Journal of International Money and Finance 14, pp. 395-245.
8. De Grauwe, P. and G. Schnabl (2004), "Exchange Rate Regimes and Macroeconomic Stability in Central and Eastern Europe," Cesifo Working Paper No. 1182.

9. Edwards, Sebastian, Levy-Yeyati, Eduardo (2005), "Flexible Exchange Rates as Shock Absorbers," European Economic Review 49(8), pp. 2079-2105.
10. Eichengreen, B. and D. Leblang (2003), "Exchange Rates and Cohesion: Historical Perspectives and Political-Economy Considerations," Journal of Common Market Studies 41, pp. 797–822.
11. Eichengreen, B. and R. Hausmann (1999), "Exchange Rates Financial Fragility," NBER WorkingPaper No. 7418.
12. Engle, R. (2001), "GARCH 101: The Use of ARCH/GARCH Models in Applied Econometrics," Journal of Economic Perspective 15(4), pp. 157-168.
13. Engle, R. and C.W.J Granger (1987), "Cointegration and Error Correction: representation, estimatin and testing", Econometrica 55, pp. 251 - 276
14. Ghorbani, M. and M. Motallebi (2009), "Application Pesaran and Shin Method for Estimating Irans` Import Demand Function," Journal of Applied Science 9, pp. 1175-1179.
15. Ghosh, A., A. M. Gulde and Wolf H. (2003), Exchange Rate Regimes: Choices and Consequences. Cambridge, Massachusetts: MIT Press.
16. Johansen, S. (1988), "Statistical Analysis of Cointegration Vectors", Journal of Economic Dynamics and Control 12, pp. 231-254.
17. Johansen, S. and K. Juselius (1990), "Maximum Likelihood Estimation and Inference on Cointegration-With Applications to the Demand For Money", Oxford Bulletin of Economics and Statistics, Vol. 52, No. 2, pp.169-210
18. Hasan, S. and M. Wallace (1996), "Real Exchange Rate Volatility and the Exchange Rate Regimes: Evidence from Long term Data," Economic Letters 52, pp. 67-73.
19. Kent, C. and R. Naja (1998), "Effective Real Exchange Rates and Irrelevant Nominal Exchange Rate Regimes," Research Discussion Paper No. 9811.
20. McKinnon, Ronald (1963), "Optimum Currency Areas," American Economic Review 53, pp. 717–725.
21. McKinnon, Ronald (1973), Money and Capital in Economic Development. Brookings Institution.
22. Obstfeld, M. and K. Rogoff (1995), "The Mirage of Fixed Exchange Rates," The Journal of Economic Perspectives 9 (4), pp. 73–96.
23. Pesaran, M.H., Y. Shin and R.J. Smith (2001), "Bounds Testing Approaches to the Analysis of Level Relationships", Journal of Applied Econometrics 16, pp. 289–326.
24. Qian, Y., Varangis, P. (1994), "Does Exchange Rate Volatility Hinder Export Growth?," Empirical Economics 19, pp. 371–396.
25. Schnabl, G. (2008), "Exchange Rate Volatility and Growth in Small Open Economies at the EMU Periphery," Economic Systems 32 (1), pp. 70-91
26. Seabra, F. (1995), "Short-run Exchange Rate Uncertainty in Latin America," Applied Economics 27 (5), pp. 441-50.
27. Son, N. H. (2009), Banking system of Vietnam: Reform Strategies and Transition Assessment http://www.trf.or.th/TRFGallery/Upload/Gallery/Documents/Files/1000000015.pdf

# DETERMINANTS OF FOREIGN DIRECT INVESTMENT IN VIETNAM

*Mai Thu Hien*[*]
*Nguyen Ngoc Binh*[**]

**Abstract**

*Since the first law on foreign direct investment (FDI) in December 1987, the FDI sector has continuously played an important role in the economic growth of Vietnam. It is, therefore, important to find out what factors helps facilitate the FDI inflows into the country. By using the gravity model, the paper aims to identify determinants of FDI into Vietnam from 16 main FDI partners during the period from 2003 to 2014. The empirical results suggest that geographical distance, along with GDP, GDP per capita, trade openness and labor cost have significant impact on facilitating FDI inflows into Vietnam. The empirical results are then expected to provide useful insights for policy recommendations in area of macroeconomics, bilateral trade, logistics and transportation system and labour quality to attract larger volume of FDI into Vietnam in the future.*

***Key words:*** *Foreign Direct Investment, FDI determinant factors, gravity model*

***Date of submission: 5th April 2016; Date of revision: 15th April; Date of approval: 22nd April2016***

## 1. Introduction

Foreign Direct Investment (FDI) sector is an important driving force in economic growth and development of developing countries, like Vietnam. The FDI sector, in Vietnam, has been playing a growing important role in the development of socio-economy of the country. FDI enterprises have contributed to the increase in Gross Domestic Product (GDP) of Vietnam, increase in volume of export as well as in the State budget. Furthermore, FDI sector is an important supply of employments for domestic workforce and an important channel of technology transfer in Vietnam. With the growing important role of FDI sector, especially in the context of growing competition in the facilitation of FDI when Vietnam is preparing to join several free trade agreements and communities in the region, it is necessary to carry out extensive research studying determinants of FDI inflows into Vietnam. Thus, our paper aims to find out the determinant factors of FDI inflows into Vietnam with econometric models built on the theoretical background of gravity model with extended variables like trade openness and labor cost. The empirical evidences gained from these then expected to serve as bases for policy implications and recommendations to further promote the facilitation of foreign investment into Vietnam. The paper consists of six parts. Following the introduction is the

[*] PhD, Foreign Trade University, Vietnam; E-mail: hien.mai.1512@gmail.com.
[**] Foreign Trade University, Vietnam; E-mail: binhn234@gmail.com

overview of FDI inflows into Vietnam. The following part presents a review of theories and literatures about FDI determinants, followed by research methodology and data sources used in the paper. The fifth part presents empirical results and analysis. The final part discusses several policy recommendations and conclusions of the paper.

## 2. Overview of FDI inflows into Vietnam

According to United Nations Conference on Trade and Development (UNCTAD)[1], foreign direct investment is defined as a type of investment that involves "*a long-term relationship and reflecting a lasting interest and control by a resident entity in one economy in an enterprise resident in an economy other than that of the foreign direct investor"*. Also, foreign investors in investment law of Vietnam[2] is defined as "*an individual holding a foreign nationality or an organization established under foreign laws who conducts business investment in Vietnam"* and foreign-invested business as business entities in which *"51% of charter capital or more is held by foreign investors or the majority of general partners are foreigners if the business organization is a partnership"*.

Being considered as a turning point of the economy of Vietnam, the economic reform by the Government of Vietnam, also known as *DoiMoi* in 1986, had liberalized the domestic economy and opened up opportunities for foreign investors to invest in Vietnam. Since then, the FDI sector has played an important role in the economic growth and development of the economy.

Starting from merely US$ 1,600 million in the period of 1988-1990, according to Foreign Investment Agency (FIA) of Ministry of Planning and Investment Vietnam, the total registered capital of FDI sector reached US$ 21,921 million in 2014 with 1,843 projects in total. Figure 1 below displays the overall picture of FDI inflows into Vietnam from 1988 to 2014. It can be easily seen that there was a significant increase in the level of FDI flows into Vietnam after 2007, which was considered by many as "*an investment boom"*. The investment boom was marked by the all-time largest amount of registered capital in one year of US$ 71,726 million in 2008. These positive results reflect the benefits of the Vietnam's accession into World Trade Organization (WTO) in 2007.

According to FIA, from 1988 to 2014, FDI inflows into Vietnam come from 101 countries and territories. South Korea is the all-time leader FDI partner of Vietnam with 4,190 projects registered with total invested capital of US$ 37,726 million, following by Japan with total investment of US$ 37,334 million and Singapore with US$ 32,936 million. Figure 2 below display the proportion of registered FDI capital in Vietnam from 1988 to 2014 by country/territory of origin. It can be seen that a majority of top FDI partners of Vietnam comes from Asia Pacific area or countries with available and favorable shipping route to and from Vietnam.

Like in many other emerging economies, FDI sector in Vietnam continues to contribute significantly to economic development of the host country. According to General Statistic

[1] SeeUnited Conference on Trade and Development (2014), World Economy Report 2014, UNCTAD.
[2] SeeInvestment Law No 67/2014/QH13 dated 26 November 2014 by the National Assembly

Office of Vietnam, while in 2008, the FDI sector contributed only VND 281,604 billion, accounting for 17,43% GDP, in 2011, the contribution increased to VND 453.392 billion (15,6%) and in 2014, it was VND 704.341 billion (17,89%). The FDI sector is also an important contributor to the State budget. In 2008, FDI enterprises contributed VND 43.953 billion and VND 77.076 billion in 2011 and in 2014, contribution to State budget from FDI sector increased to VND 111.224 billion.

*Unit: million USD*

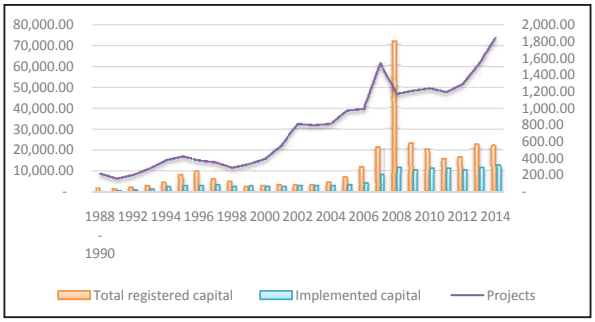



**Figure 1 Overview of FDI inflows into Vietnam from 1988 to 2014**

*Source: Foreign Investment Agency – Ministry of Planning and Development Vietnam (2014)*

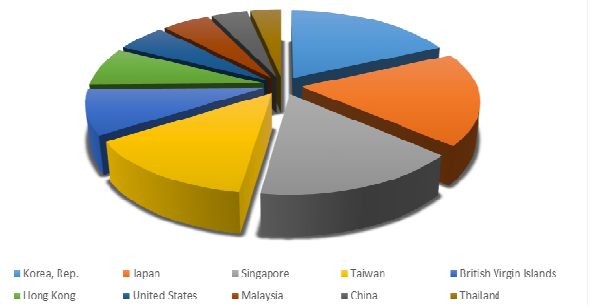



**Figure 2. Top 10 FDI partners of Vietnam from 1988 to 2014**

*Source: Foreign Investment Agency – Ministry of Planning and Development Vietnam (2014)*

The FDI sector also facilitates export volume of Vietnam and helps the country to gradually join the global value chain. Total export volume from FDI sector increased from 55,1% in 2008 to 56,9% in 2011 and 62,5% in 2014, making this sector to become the main exporting sector of the economy. Besides, FDI firms provide jobs and employments for more than 1,7 million employers in 2011 and 2,1 million employers in 2014. The FDI sector also serves as an important channel for technology transfer in Vietnam. According to MPI, from 1993 to 2014, there were 951 technology transfer projects registered in Vietnam, in which 605 projects from FDI sector, accounting for 63,6%.

## 3. Literature review

Within the age of increasing globalization and economic liberalization, numerous researches and studies have been conducted to study the behavior of FDI inflows into host countries. These studies cover both FDI's impacts on economic growth of host countries, spill-over effects as well as determinant factors of FDI.

In an effort to converge several existing theories of international production, including internationalization theory, Hymer-Kindleberger theory of ownership advantage to form a general and *eclectic* framework, Dunning (1980) came up with the Eclectic Paradigm, also known as OLI Framework aiming to explain factor affecting investment decision of foreign investors into a host country. The Eclectic Paradigm, as according to Dunning, discusses on each line of explanations of multinational enterprises (MNEs) activities and can be used to study and explain all types of FDI investments and modes of entry of foreign investments. In summary, Dunning pointed out three conditions for a firm to engage in FDI in a host country, which make up the so-called OLI framework:

1. *Ownership (O-) advantages:* the O- factor in Dunning's framework refers to ownership

advantages of foreign companies vis-à-vis host country companies. These advantage vary from available access to raw materials or distribution outlets, foreign firms' intangible assets (e.g.: patent, secrecy, trademark, etc.), economies of scales and advantages from *multinationalities* of foreign firms.

2. *Location (L-) specific advantages:* L-advantages explain the motive behind investors' decisions to locate and operate abroad rather than in home countries. These advantages include favorable conditions of host countries in comparison with home countries, for example, the availability of natural resources, infrastructures, lower material and labor costs, local government policies, etc.
3. *Internationalization (I-) advantages:* As the third strand in the Eclectic Paradigm, the I- factor explains the basic incentives for foreign firms to engage in wholly-owned subsidiary models rather than other modes of entry like exports or licensing. The internationalization helps firms to achieve advantages, such as avoiding high negotiation or transaction costs, ensuing timing of delivery, enforcement of property rights and reputation of firms, etc.

Also, as claimed by Dunning (1980), different types of economic and specific characteristic of home – host countries can affect the combined OLI configuration[3]. As a general and eclectic paradigm, Dunning's model has been used in various researches on FDI and proved its compatibility in studies of FDI's behaviors. Early examples include studies of Schneider and Frey (1985), Wheler and Mody (1991), Ramasamy (1998) and Wadhwa (2011) in developing Asian countries' contexts. Many studies in determinants of FDI factors are applied OLI framework and also show significant results, see Mirza and Giroud (2004), Hoang Thi Thu (2006), Bui Tuan Anh (2011) and Bui QuangVinh (2011) for examples.

Since trade and FDI share many similar characteristics and patterns, many researchers applied the Gravity model, which is originally developed to study the bilateral trade flows between one pair of countries, into studies about behaviors of FDI inflows between host – home countries[4]. The Gravity model, in application into studies about FDI, has then shown its high statistical explaining power, consistency and fitness. The Gravity model of trade is an economic model used to analyze bilateral trade flows between a pair of countries. The model is built based on pairs of economic size (measured by GDP indices) and geographical distance between import and export countries. Inspired by Isaac Newton's Law of Universal Gravitation, the international trade model of gravity explains the export flows instead of gravitational force in the original model of Newton. The two mass variables in the Gravity model of trade are normally represented by GDP of a pair of countries instead of mass of a pair of objects[5]. When estimated in term of natural logarithms, the Gravity model of trade takes the form as follow:

[3] Variations of OLI characteristics are discussed atTrade, Location of Economic Activity and Multinational Enterprise: A Search for an Eclectic Approach by Dunning (1988).

[4] See Eaton and Tamura (1996), Di Mauro (2000)

[5] See Tinbergen (1962) for early formalization of the gravity model of trade

$$\ln E_{A,B} = \alpha + \beta_1 \ln GDP_A + \beta_2 \ln GDP_B + \beta_3 \ln Dist_{AB}$$

in which $E_{A,B}$ represents export flows between a pair of countries; $GDP_A$ and $GDP_B$ represent the level of GDP of importing and exporting countries and $Dist_{AB}$ is the geographical distance between the two countries. In application to model to study about FDI, the explained variable will represent the FDI inflow between host and home countries instead of bilateral trade flows. Eaton and Tamura (1996) were among the first economists to adopt the gravity model to explain FDI flows between Japan and the U.S. Following Eaton and Tamura, the gravity model was also used in several other studies about FDI and showed significant statistical results and explanatory power with both traditional gravity model and extended models with GDP per capita, level of shareholder protection, corporate tax rate and openness to FDI (see Talamo (2003); Frenkel, Funke and Stadtmann (2004) for example). Studies applied the gravity model and extended variables also showed its significance and fitness in explaining FDI flows among developing Asian countries. For example, Hattari, Rajan and Thangavelu (2008) studied FDI trends in intra-ASEAN countries, China and India; Changwatchai (2010) studied FDI inflows by industry to several ASEAN countries including Vietnam with gravity model. Despite the effectiveness of the Gravity model in studying about FDI, the number of researches about FDI in Vietnam applying this model is still very limited. Among the few is a study about FDI determinants in Vietnam conducted by Hoang Chi Cuong, Tran Van Tho and Nguyen Thi Ngoc My (2013) with FDI data from the period of 1995 to 2011. Thus, in our paper, the gravity serves as a theoretical background to build the model to examine the determinants of FDI inflows into Vietnam.

## 4. Research methodology and Data

With the solid advantages of the gravity model and the OLI framework in explaining about FDI flows into a host country, our paper will employ the gravity model and the OLI framework as bases for model construction and for variable and empirical analysis. From the traditional gravity model, two extended variables are introduced to build an econometrical model for estimation as follows:

$$lnFDI_{ijt} = \beta_0 + \beta_1 lnGDP_{it} + \beta_2 lnGDP_{jt} + \beta_3 lnOPEN_{it} + \beta_4 lnWAGE_{it} + \beta_5 lnDIST_{ij} + \varepsilon_{ijt} \quad (1)$$

In which, *i* and *j* represent host and home country respectively. *FDIijt* is the explained variable, representing FDI flows from home country *j* (i.e. Japan) to host country *i* (i.e. Vietnam) in the period *t*. *GDPit* indicates gross domestic product index of Vietnam during time *t* and *GDPjt* is the GDP index of host country during time *t*. *DISTij* represents the geographical distance between home country and Vietnam. $OPEN_{it}$ represents the level of trade openness between host country Vietnam and home country in year *t*. $WAGE_{it}$ is the average minimum wage of laborers working in FDI sectors in Vietnam in year t. And $\varepsilon_{ijt}$ is a white noise error term.

In Model 2, GDP per capita is used as mass variables instead of GDP for the Gravity model to capture the characteristics of population and purchasing power of host country. With *GDPCit* and *GDPCjt* indicating GDP per capita of Vietnam in year *t* and GDP per capita of home country in year *t* respectively, the Model 2 will have the configuration as follows:

$$lnFDI_{ijt} = \beta_0 + \beta_1 lnGDPC_{it} + \beta_2 lnGDPC_{jt} + \beta_3 lnDIST_{ij} + \beta_4 lnOPEN_{ijt} + \beta_5 lnWAGE_{it} + \varepsilon_{ijt} \quad (2)$$

GDP and GDP per capita of Vietnam, are indicators of host country's market size, which is expected to have positive relationships with explained variable FDI. Being the core of the gravity model, Distance reflects the geographical distance between home and host country. In the relationship with FDI inflows, higher distance is expected to have negative impact on FDI inflow from home countries to Vietnam. The variable *OPEN* in the models represents for trade openness, which capture the level of trade integration between host country Vietnam and home country. The variable $OPEN_{ijt}$ is calculated by the sum of volume of export and import from and into Vietnam from home country *j* in year *t*, divided by GDP level of Vietnam in year *t*. Higher level of trade openness is expected to have positive impact on FDI inflows of the home country into Vietnam. The *WAGE* variables in our paper represent the labor cost faced by FDI firms in Vietnam. *WAGE* is calculated based on average minimum wage of employees working in FDI sector in Vietnam stipulated in numbers of official decrees and circulars by the Government of Vietnam and the Ministry of Labor, Invalids and Social Affairs (MOLISA) of Vietnam during the period of 2003 to 2014.

The empirical analysis in our paper is based on panel data estimation results of country pairs between host country, Vietnam and other 16 home countries, which are main FDI partners of Vietnam during the period from 2003 to 2014. The 16 countries are also main trading partner of Vietnam, thus, it is possible to capture the effect of trade openness on FDI. The 16 main FDI partners include Australia, Canada, China, France, Germany, Hong Kong, Japan, Korea, Rep., Malaysia, Netherlands, Russian Federation, Singapore, Taiwan, Thailand, United Kingdom and United States. Besides, data reflect country-specific characteristics are used in our panel data, including GDP, GDP per capita, geographical distance, bilateral trade data of Vietnam and home country (for calculation of trade openness), average minimum wage of employees working in FDI sector in Vietnam. The average minimum wage is calculated based on the minimum wage levels for different regions of Vietnam as stipulated in official legal documents issued by the Government and Ministry of Labour, Invalids and Social Affair from 2003 to 2014. The table below summarizes the source of data obtained for empirical analysis in our paper:

| Variables | Data sources |
|---|---|
| FDI | Vietnam General Statistic Office; Foreign Investment Agency (MPI) |
| Distance | The French Institute for Research on the International Economy (CEPII) |
| GDP | World Bank Data, CIA World Factbook (for Taiwan) |
| GDP per capita | World Bank Data, CIA World Factbook (for Taiwan) |
| Bilateral trade data | Vietnam General Statistic Office |
| Wage | Official decrees and circulars by the Gov. of Vietnam and MOLISA |

Data used in our research is arranged as balanced panel data, which reflects both cross-sectional and time series changes. Hence, it provides better control for effects of individual heterogeneity. The panel data also help reduce collinearity among regressors and increase efficiency of economic regressions. Also, before running panel data estimation, tests are also carried out to see variables used in our research are stationary or not. Thus, panel

unit root tests based on Levin, Lin and Chu-t (LLC) tests are made on the series. The results of the test are presented in Table 2. According to the results, probabilities for LLC test of variables are below 5%, which means that it is able to reject the null hypothesis of unit roots. Therefore, it can be concluded that these series are stationary at level.

**5. Research results and analysis**

Empirical results in our paper are obtained from regression estimations of 2 models presented in the previous section, using panel data with 12 periods (from 2003 to 2014) and 16 cross-sections included (16 main FDI partners of Vietnam). The regression estimation results are obtained from pooled Ordinary Least Square (OLS) regression, Random Effect Model (REM) regression and Fixed Effect Model (FEM) with omission of time-invariant variables. With pooled OLS regression, 192 observations from 16 countries are pooled for regression run and the results from pooled OLS reflect an overall cross-countries impact on FDI. However, the pooled OLS neglects the unobserved effects of time-invariant variables that may exist among 16 FDI partner countries in the panel data set. Thus, REM regression approach is also employed in our paper. In comparison with pooled OLS, REM allows for heterogeneity and individuality for each home country and the differences across country will assert different influences on the dependent variables. Additionally, by using REM, it is able to estimate time invariant variables, like distance, in the panel data, which is the core of the Gravity Model. Results for regression results of the panel data for both pooled OLS and REM regression are presented in Table 1.

According to the regression results in Table 1, all variables in two models show statistical significance and expected signs in relation with dependent variable, *FDI* (except for two variables, *Distance* and *GDP* of home country in Model 1). Also, between the 2 models, Model 2 with *GDP per capita* variables act as mass variables for a pair of country Vietnam and home country, showed more robust results with all variables show expected sign and are significant at 1% level of significance. Besides the individual significance of variables, variables in the models also show joint significance in explaining FDI. Here, the Wald test is employed to test the null hypothesis of all intercepts of variables in the models are simultaneously equal zero. From the test results in Table 3, we can reject the null hypothesis at 1% level of significance and accept that all variables in two models are jointly significant to explain the dependent variable FDI. Additionally, test to detect residual normality to see the goodness-of-fit of models are also carried out using Jarque-Bera statistics. From Table 4 showing the results of Jarque-Bera test for two models, it can be seen that since probabilities of the tests are all greater than 5%, the null hyphothesis of residuals are normally distributed is accepted, which fulfills the assumption of good regressions lines. The Hausman test on REM estimations is also conducted. According to Table 5, with *p-values* of Hausman test are greater than 5%, there are evidences for the appropriateness and efficiency of REM estimation in the research

Within the theoretical framework applied in our paper, all variables show its significance in relation with FDI inflows into Vietnam. Firstly, variables indicating host country's market size, such as GDP and GDP per capita of Vietnam, show their positive impacts on FDI inflows into Vietnam. The market size and purchasing power, represented in the models by GDP and

GDP per capita respectively, of host country are among the location (*L-)* advantages in Dunning's OLI framework. A domestic market with potentially high growth rate and a big market with increasing purchasing power is certainly a good signal for foreign investment. This will provide opportunities for higher sales of products and services for foreign firms in Vietnam, especially for market-seeking investors who aim to distribute their products in host country's market.

Another variable that shows high significance in its relation with dependent variable *FDI* is *OPEN*. Thus, this suggests that high level of trade integration between home country and host country will facilitate FDI inflows into host country. This is especially true with efficiency-seeking or vertical FDI, which sets up production facilities aboard to export products back to its home country or adjacent markets. Foreign firms, therefore, are more interested in a host economy with lower trade barriers or higher integration of bilateral trade.

Labor cost is among the most important determinant factors in many researches about FDI[6]. The *WAGE* variable presented in our paper also once again shows its significance in studying FDI behavior. According to the regression results, the *WAGE* variable holds negative signs in its relation with the dependent variable. Thus, this is true with the expectation that the raise in minimum wage level is in correlation with the raise in the level of labor cost faced by FDI firms. For foreign firms which seek the advantages of low labor costs in Vietnam, the relative increase in labor cost of host country in comparison with other potential economies will certainly discourage these types of foreign investors.

Additionally, the geographical distance between Vietnam and home country is also a notable factor in attracting FDI. As with statistical significance result in Model 2, this confirms the expectation that higher distance may pose a barrier for foreign investments, for example, in forms of higher transportation and transaction cost, differences in language, culture as well as business mindsets. Finally, the GDP per capita of home country variable also show its significance in model explaining FDI. This suggests that sources of FDI often come from countries with higher level of income, which often leads higher level of financial ability to invest abroad.

## 6. Recommendation and Conclusion

From the empirical analysis based on regression results presented in the previous section, our paper also aims to present several policy implications and recommendations for central and local government to attract more FDI inflows into Vietnam.

Firstly, the robust regression results from variables indicating market size of host country, Vietnam, suggest that in order to attract FDI inflows into Vietnam, it is important to sustain and attain high levels of GDP and GDP per capita in the domestic market. Thus, in the coming years, it is essential for Vietnam to maintain macroeconomic stability, foster economic growth and expand domestic market to further benefit from advantages of market size in facilitating FDI inflows. In addition, a constant and stable economic growth is also essential in maintaining a high level of confidence for foreign investors. This is especially crucial with regards to emerging economies, like Vietnam. Lessons can be learned from the financial crisis

[6] See Dermihan & Masca (2008), Changwatchai (2010) and Bui QuangVinh (2012).

in 1997-98 in Thailand when foreign capital drained out of the emerging economy overnight with the plummeting foreign investors' confidence in that economy.

Secondly, it is obvious that in order to attract more FDI into Vietnam, measures to reduce trade barriers and to facilitate bilateral trade are necessary. With the establishment of ASEAN Economic Community (AEC) and the conclusion of negotiations of the Trans-Pacific Partnership (TPP) and EU-Vietnam Free Trade Agreement (EVFTA), Vietnam continues to take further steps toward of trade liberalization. Thus, it is essential for the Government of Vietnam to gasp these opportunities to further facilitate trade flows and then FDI flows from countries and economies within these economic and trade communities.

Thirdly, with regard to labor, Vietnam also needs to build a competitive labor market to further facilitate FDI inflows into the country. While the regression results presented above show the negative relationship between labor cost and FDI inflow and Vietnam is losing on the advantage of "low labour cost" as the rising in average wage level, therefore, to maintain the location advanatage of labour in Vietnam, it is our recommendation to develop the advantage of labour force in term of quality instead. Then, it is required to develop a competitive and quality labor market, especially when Vietnam plans to attract more FDI into high value-added, technical and capital-intensive industries. Measures to improve this area include improving and upgrading the workforce's skills and establishing intensive long-term plan to develop the education and vocational training systems to regional standards. This requires the Government to call for investments and consultation of not only public sectors but also from private and foreign sectors.

Also, from the regression results, it is evident that geographical distance has a negative relationship with volume of FDI inflows. Thus, to minimize the difficulties faced by foreign investors, it is also essential to ensure an efficient transportation and logistics system which, in turn, will facilitate business operation of FDI firms as well as attract FDI inflows from country located far away from Vietnam. With a more efficient, secure and reliable logistics system and infrastructure, Vietnam can increase its competitive advantages for trade with global market. In fact, Vietnam has many opportunities to create an intra-Asia transportation hub serving many mainline vessel (e.g.: sailing line to Europe from Japan, Korea, Rep. and China). Thus, it is advisable that the Government of Vietnam to further develop and expand deep sea terminals for big vessels in optimum location along the coast (e.g.: CaiMepThiVai area).

In conclusion, with the aim to study about factors affecting the FDI flows into Vietnam, our paper once again shows that the gravity model with extended variables can be successfully applied to researches about FDI's behaviors in the context of developing economy. In addition, implications from empirical results can provide useful insights into FDI flows for recommendations and policy implications. And, finally, our paper is expected to further contribute to literatures on determinants of FDI in Vietnam and the application of the gravity model and OLI framework in analysis of FDI, especially given the importance and positive effects of FDI on economic growth in Vietnam in coming years.❑

**References**


1. Bui Anh Tuan (2011), *Determinants of foreign direct investment in Vietnam 1988 - 2009*, PhD thesis, University of Greenwich.
2. Bui QuangVinh (2012), *Determinants of foreign direct investment: A case study in Vietnam*, Master thesis, University of Tampere.
3. Changwatchai, P. (2010), *The Determinants of FDI Inflows by Industry to ASEAN (Indonesia, Malaysia, Philippines, Thailand, and Vietnam),* PhD thesis, University of Utah.
4. Dermirhan, E. & Masca, M. (2008), Determinants of Foreign Direct Investment Flows to Developing Countries: A Cross - Sectional Analysis*, Prague Economic Papers,* 4, pp. 356 – 369.
5. Di Mauro, F. (2000), The Impact of Economic Integration on FDI and Exports: A Gravity Approach, CEPS Working Paper No. 156.
6. Dunning, J.H. (1980), Toward an eclectic theory of international production: some empirical tests, *Journal of International Business Studies*, vol. 11, pp 9 – 31.
7. Dunning, J.H. (1988), Trade, Location of Economic Activity and the Multinational Enterprise: A Search for Eclectic Approach *in Explaining International Production,* Allen and Unwin, London, pp 13 – 40.
8. Eaton, J. & A. Tamura (1996), Japanese and US exports and investment as conduit of growth, NBER Working Paper No. 5457.
9. Frenkel, M., Funke, K. & Stadtmann, G. (2004), A Panel Analysis of Bilateral FDI Flows to Emerging Economies*, Economic Systems,* 28(3), pp. 281-300.
10. Hattari, R., Rajan, R.S., & Thangavelu, S. (2008), Understanding Intra - Asean FDI Flows: Trens and Determinants and The Role of China and India, World Bank and Geogre Manson University Working Paper.
11. Hoang Chi Cuong, Tran Van Tho & Nguyen Thi Ngoc My (2013), New Theory of Foreign Direct Investment: New Evidence from Vietnam, *Journal of Science and Development,* vol.11, no.8, pp 1180 – 1196.
12. Hoang Thi Thu (2006), Determinants of Foreign Direct Investment in Vietnam, Working paper, pp. 958 – 975.
13. Mirza, H. & Giroud, A. (2004), Regional Integration and Benefits from Foreign Direct Investment in ASEAN Economies: The Case of Vietnam, *Asian Development Review,* vol. 21, no.1, pp 66 – 98.
14. Ramasamy, B. (1998), Foreign Direct Investment under Uncertainty: Lessons for Malaysia, University TengaNasional, Available from: <http://econ.tu.ac.th/iccg/papers/bala.doc> [Accessed 01 October 2015].
15. Schneider, F & Frey, B.S. (1985), Economic and Political Determinants of Foreign Direct Investment, *World Development*, vol. 13, no.2, pp 161 – 175.
16. Talamo, Giuseppina MC. (2003), Institution, FDI and the Gravity Model, University of Palermo, Department of Political Studies Working Paper.
17. Tinbergen, J. (1962), *Shaping the World Economy: Suggestions for an International Economic Policy,* Twentieth Century Fund, NY
18. Wadhwa, K. (2011), Foreign Direct Investment into Developing Asian Countries: The Role of Market Seeking, Resource Seeking and Efficiency Seeking Factors, *International Journal of Business and Management*, vol. 6, no. 11, pp 219 – 226.
19. Wheeler, D. & Mody, A. (1992), International Investment Location Decision: the Case of U.S. firm, *Journal of International Economics* 33, pp 57 – 76.

**Table 1: Regression results for the gravity models**

| **Model 1** | **Dependent variable FDI** | | |
|---|---|---|---|
| Explanatory variables | **Pooled OLS** | **REM** | **FEM** |
| GDP Vietnam | 4,064272 *** | 3,900980*** | 4,038548*** |
| GDP home country | -0,260559* | 0,0061888 | 0,501651 |
| Distance | -0,223630 | -0,690463* | - |
| Trade Openess | 1,013535*** | 0,620773** | 0,178723 |
| Wage | -2,623591** | -2,596039*** | -2,580481*** |
| Constant | -22,01738 | -22,07618 | -17,02009 |
| Adjusted R-squared | 0,472703 | 0,310870 | 0,681620 |
| Number of observations | 192 | 192 | 192 |
| ***Model 2*** | Dependent variable FDI | | |
| Explanatory variables | **Pooled OLS** | **REM** | **FEM** |
| GDP per capita Vietnam | 3,844985*** | 3,893748 *** | 3,683405*** |
| GDP per capita home country | 0,656137*** | 0,608827** | 0,470726 |
| Distance | -0,923501*** | -0,945066*** | - |
| Trade Openess | 0,846138*** | 0,71925*** | 0,207503 |
| Wage | -2,524648** | 3,893748*** | -2.557055** |
| Constant | -7,689739 | -7,715887 | -32,45960 |
| Adjusted R-squared | 0,547167 | 0,363630 | 0,679737 |
| Numbers of observations | 192 | 192 | 192 |

*Table 1 notes: *,**,*** denotes significance at 10%, 5% and 1% level. P-values are shown in parentheses. All regressions are estimated using E-Views 8.*

**Table 2. Panel Unit Root test**

| | **Levin, Lin and Chu-t test** | **Test for Unit root in** |
|---|---|---|
| FDI | -3.87212 (0.0000) | level |
| GDP home country | -4.94986 (0.0000) | level |
| GDP Vietnam | -1.87812 (0.0302) | level |
| GDP per capita home country | -5.10108 (0.0000) | level |
| GDP per capita Vietnam | -1.82855 (0.0337) | level |
| Wage | -7.33183 (0.0000) | level |
| Trade Openess | -9.72411 (0.0000) | level |

Table 2 notes: Probabilities are shown in parentheses.

Null hypothesis: Panel data has unit root (assumes common unit root process).

**Table 3. Wald test for joint significance of variables**

| **Equation: Model 1** | | | |
|---|---|---|---|
| **Test Statistic** | **Value** | **df** | **Probability** |
| F-statistic | 18.42355 | (5, 186) | 0.0000 |
| Chi-square | 92.11777 | 5 | 0.0000 |
| **Equation: Model 2** | | | |
| **Test Statistic** | **Value** | **df** | **Probability** |
| F-statistic | 22.92212 | (5, 186) | 0.0000 |
| Chi-square | 114.6106 | 5 | 0.0000 |

Table 3 notes: Null Hypothesis: All intercepts are simultaneously equal zero: $\beta(1)= \beta(2)= \beta(3)= \beta(4)= \beta(5)=0$

**Table 4. Normality Jarque-Bera test**

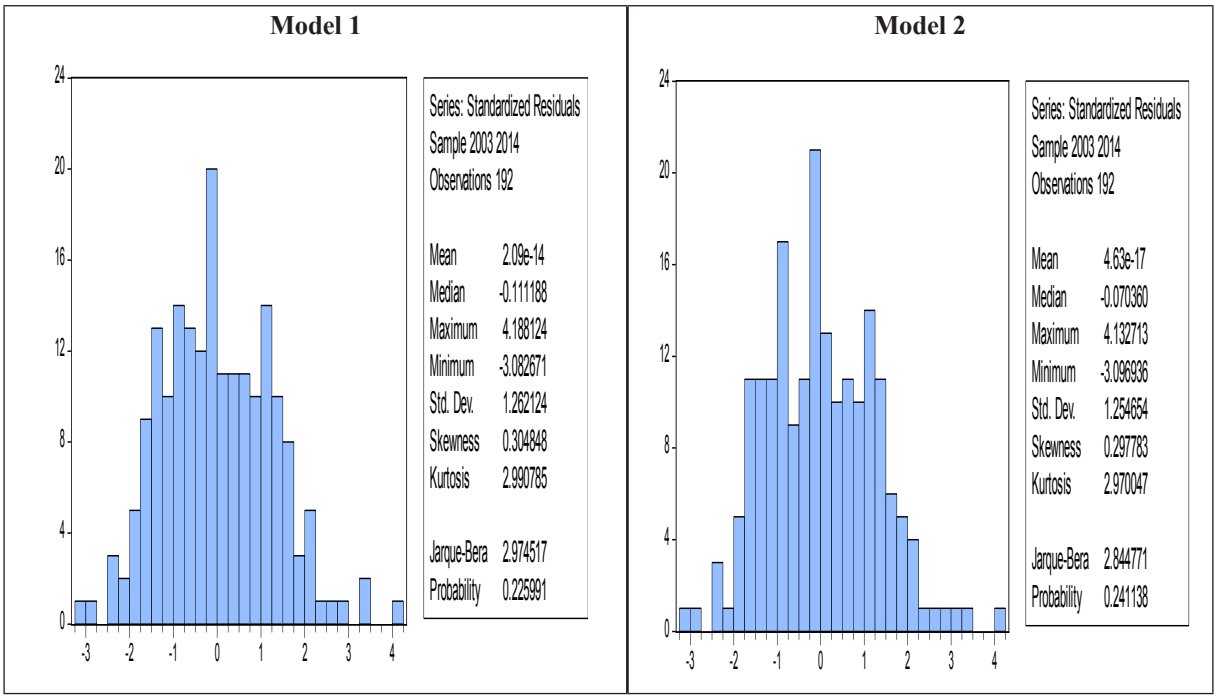



Table 4 note: Null hypothesis: normal distribution

**Table 5: Correlated Random Effect – Hausman test**

| **Model 1** | Chi-Sq Stat. | Chi-Sq.d.f. | Prob |
|---|---|---|---|
| Cross-section Random | 5.366216 | 4 | 0.2517 |

| **Model 2** | Chi-Sq. Stat | Chi-Sq.d.f. | Prob. |
|---|---|---|---|
| Cross-section Random | 5.336474 | 4 | 0.2545 |

Table 5 note: Null hypothesis: Random Effect Model is appropriate

# THE EFFECT OF PARTIAL MERGER & ACQUISITION ACTIVITIES ON TARGET FIRM'S PERFORMANCE: A CASE STUDY FROM BANKING AND FINANCE INDUSTRY IN VIETNAM

*Cao Dinh Kien*[*], *Le Thai Phong*[**]
*Tran Thi Kim Anh*[***], *Nguyen Bao Tuan*[****]

**Abstract**

*Using 25 M&A transactions in banking and finance industry during the period 2005-2013, we examine the impact of partial M&A deals on performance of target firms in banking and finance industry in Vietnam. We find that most of M&A transactions in banking and finance industry in Vietnam are partial transactions. Moreover, in term of performance, the partial M&A transactions have a significant negative impact on ROE, ROA, and EPS of the target firms.*

**Key words:** *Partial acquisitions, banking and finance industry.*

***Date of submission: 3rd April 2016; Date of revision: 15th April; Date of approval: 22nd April2016.***

## 1. Introduction

In recent years, financial markets around the world are unstable. Especially since 2007, we have witnessed a financial crisis spreading across the world. During the crisis, most of the countries are in trouble and the level of competition is getting tougher everywhere. However, these difficulties also are a potential motivation for economy to develop in many aspects. Among these aspects, we realize that there is a huge increase in merger and acquisition (M&A) activities around the world in general and in Vietnam in particular. In fact, there are many big deals in Vietnam since 2005, especially in banking and finance industry.

According to Afolabi (2011), the primary motives for M&A are cost savings and revenue enhancement. Firms involved in M&A activity are expected to benefit from larger economies of scale and accrue more revenue through the effects on firm size, firm scope (through either product or geographic diversification), or market power. Those who advocate mergers will argue that the merger will cut cost or boost revenues by more than enough to justify the price premium (Ismail et al., 2011). Moreover, M&A activity is a source for corporate growth. Saboo and Gopi (2009) suggest that mergers and acquisitions are used for improving competitiveness of companies

[*] PhD, Foreign Trade University, Vietnam; Email: caokien@ftu.edu.vn
[**] PhD, Foreign Trade University, Vietnam; E-mail:lethaiphong@gmail.com
[***] PhD, Foreign Trade University, Vietnam; Email: anhttk@ftu.edu.vn
[****] Foreign Trade University, Vietnam.

and gaining competitive advantage over other firms through gaining greater market share, broadening the portfolio to reduce business risk, entering new markets and geographies, and capitalizing on economies of scale.

Therefore, evaluating the impact of M&A activities on firms' performance is important. Performance and valuation effects due to M&A are difficult to observe because the visible result might be acknowledged only after a long time period. There are numerous studies investigating the impact of M&A events on the performance of participants, including Yeh and Hoshino (2000), Loughran and Vijh (1997), Limmack (1991), Datta et al. (2001)… However, there is virtually no empirical evidence related to this topic in Vietnam. This study aims to fill the gap by examining the impact of M&A activities on Vietnamese targets' performance.

Due to the restrictions from Vietnamese government, most of the M&A transactions in banking and finance industry are partial deals. In a partial deal, a buyer can not buy a majority stake of a target. After the partial deal, the buyer holds a non-controlling interest of the target. The literature shows that the partial M&A transactions should not have any impact on the performance of both buyers and targets. However, in case of Vietnam, the partial M&A transactions should have a positive impact on the performance of targets since one of the most important motivations for the transactions is the cooperative motivation. Sale and purchase shares of Vietnamese banking and finance firms mostly occurred collaboratively in order to support the development of each other. Moreover, the majority of big transactions has the participation of at least one foreign investor, who has experience in managing firms. Therefore, partial M&A events should have a positive impact on Vietnamese targets' performance.

The main objective of this study is to assess how partial M&A transactions affect performance of target firms in banking and finance sector in Vietnam since, among leading sectors of the economy, banking and finance sector is a quite sensitive sector that have a major impact on the stability and development of Vietnam economy. We find that most of M&A transactions in banking and finance industry in Vietnam are partial transactions. Moreover, in term of performance, the partial M&A transactions have a significant negative impact on ROE, ROA, and EPS of the targets.

## 2. M&A activities in banking and finance industry in Vietnam

Under the global competitive pressure, M&A activity is one of the most important survival solution for banks. There are three main reasons for the efficiency and effectiveness of this solution. Firstly, M&A activity increases operational efficiency of the banks and reduces inefficient functions. Secondly, diversification of product and service could be created by merging companies. While adding advanced options for current product and service lines, bank managers can generate more revenue for their business. Otherwise, synergies relating human resource can also be resulted from M&A, as employees from involved companies will be combined and they can support each other. Last but not least, companies involved in an M&A deal can expand their business from existing facilities

and distribution network of the target instead of building from the beginning, which helps saving time and money.

In order to improve economic development, Vietnam government has simultaneously conducted reforms for two entities, including state-owned enterprises and banking system. According to the State Bank, Vietnam has 89 banks including 5 state-owned commercial banks, 37 joint-stock commercial banks, 6 branches of foreign banks, 4 joint-venture banks and 5 wholly foreign-owned banks.

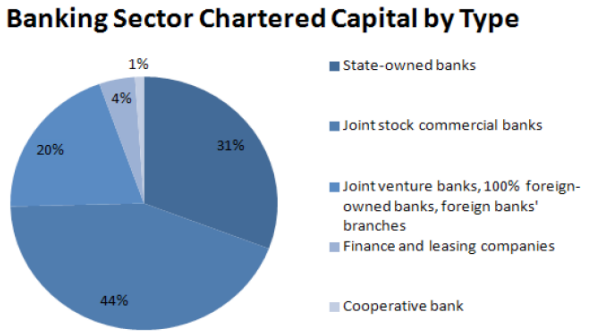



**Figure 1: Banking Sector Chartered Capital by Type (The State Bank of Vietnam, 2014)**

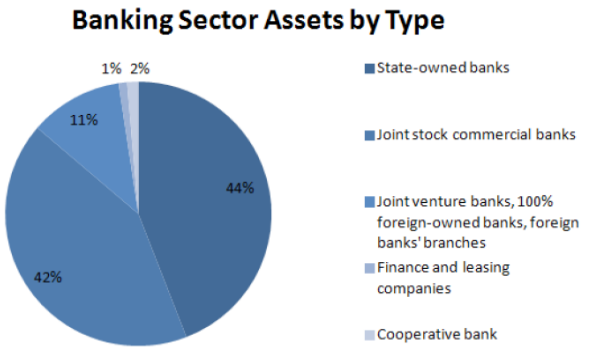



**Figure 2: Banking Sector Assets by Type (The State Bank of Vietnam, 2014)**

There are commitments to open financial markets when Vietnam joined WTO and M&As occur as a prevailing trend in banking and finance industry. In general, M&A activities in Vietnam banking and finance industry have several important characteristics. The majority of big transactions has the participation of at least one foreign investor. For example, ANZ invested to Sacombank and HSBC purchased shares of Techcombank. Moreover, the main motivation for almost all the M&A deals in Vietnam banking and finance industry is the cooperative motivation. Sale and purchase shares of Vietnamese banking and finance firms mostly occurred collaboratively in order to support the development of each other. For example, technical support was contracted between Techcombank and HSBC; Deutsche Bank and Habubank. Level of management in Vietnamese company cannot meet the cooperation requirement so M&A activities only take the role as a financial investment or a business cooperation. In banking and finance industry, foreign investors are restricted to purchase shares that are not exceeding 30% total share outstanding so acquisition of the entire company hardly happens.Moreover, the policy framework for M&A activity is weak. Thus, the participants in M&A deals faces difficulty when implementing the agreements and it is also difficult for the state agency to monitor the deals.Bank valuation is a complex problem for investors and businesses to negotiate. In term of publicly traded targets, M&A activities in Vietnam banking and finance industry can be summary in table 1.

## 3. Hypotheses, Data, and Methodology

### *3.1. Hypotheses development*

The objective of this study is to conduct a descriptive research in order to examine the different between pre-merger and post-merger performance of target firms in the banking and finance industry in Vietnam. As can be seen

**Table 1: List of target firms in the partial M&A deals in Vietnam from 2005 to 2013**

| Year | Acquirer | Target | Transaction value (mil VND) |
|---|---|---|---|
| 2005 | Standard Chartered and ANZ Banking Group Ltd. | ACB | 94,800 |
| 2008 | Standard Chartered PCL | ACB | |
| 2013 | Lao Viet Joint Venture Bank (LVB) | BID | |
| 2007 | AXA SA | BMI | 1,203,200 |
| 2009 | HSBC | BVH | 1,785,000 |
| 2012 | Sumitomo Life | BVH | 7,072,000 |
| 2010 | Goldman Sachs | CII | 740,000 |
| 2011 | Tama Global Investment Pte. Ltd | CLG | |
| 2012 | The Bank of Tokyo-Mitsubishi UFJ and IFC | CTG | 19,286,000 |
| 2008 | Kinh Do Corp. (KDC) and Sumitomo Mitsui FG | EIB | 5,152,500 |
| 2011 | Deutsche Bank | HAR | |
| 2011 | LOTTE Asset Development Co LTD | HAR | 3,110,600 |
| 2009 | Bridge Securities | HPC | 255,000 |
| 2010 | DWS Fund Vietnam Ltd | NBB | |
| 2009 | Petrovietnam Insurance Corporation (PVI) | PSI | 191,250 |
| 2011 | Nikko Cordial | PSI | 142,140 |
| 2010 | Thang Long Securities Co Ltd and Saigon-Hanoi Securities JSC | PVC | |
| 2012 | Gerling Industrie Versicherung AG | PVI | 3,284,100 |
| 2009 | Vinacomin & VRG | SHB | |
| 2007 | ANZ Banking Group Ltd. | SSI | 1,408,000 |
| 2005 | ANZ Banking Group Ltd. | STB | 426,600 |
| 2011 | Mr. Chang Hen Jui (TAIWAN) | STB | 1,195,380 |
| 2011 | Mizuho Corporate Bank Ltd | VCB | 11,875,900 |
| 2011 | Vietnam Investments Fund | VND | 94,760 |
| 2008 | Swiss Re | VNR | 1,303,500 |

from previous literature regarding the effects of mergers and acquisitions, ROE, ROA, and EPS are often chosen as the proxies for firm's performance. These financial ratios are the useful metrics and can provide a clear representation of a company's performance.

ROE indicates how profitable a company is by comparing its net income to its average shareholders' equity in order to measure how much the shareholders earned for their investment in the company and to show whether management is growing the company's value at an acceptable rate. The higher the ratio percentage, the more efficient management is in utilizing its equity base and the better return is to investors.Meanwhile, ROA offers a different take on management's effectiveness by revealing how much profit a company earns for every dollar of its assets, which indicates how profitable a company is relative to its total assets. The ROA ratio

illustrates how well management is employing the company's total assets to make profit. The higher the return, the more efficient management is. Moreover, EPS is the portion of a company's profit that is allocated to each outstanding share of common stock, serving as an indicator of the company's profitability.

Using these accounting measures, the following hypotheses areinvestigated:

$H_1$: the partial M&A activities significantly impact the ROE of target firms

$H_2$: the partial M&A activities significantly impact the ROA of target firms

$H_3$: the partial M&A activities significantly impact the EPS of target firms

### *3.2. Data*

This study examines the publicly listed firms on both HOSE and HNX. We construct a sample of 25 M&A transactions in banking and finance industry during the period 2005-2013. The sample includes 21 target firms. Due to the fact that information about such transactions is often incomplete. It can only be collected from reports by data company, such as StoxPlus, from articles on economic newspapers and magazines, or from websites, such as cafef.vn.

The data in the financial statements of target firms is used to compute necessary financial indicators in the analysis of firm performance to determine M&A effects. The time period for data collection is within 3 years before and after the event year when the M&A transactions take place.

### *3.3. Methodology*

We use two sample mean – comparison test to examine the statistical relationship between pre-acquisition ROE (ROA and EPS) and post-acquisition ROE (ROA and EPS) of target firms that involved to partial M&A transactions in banking and finance industry in Vietnam during the period 2005-2013. The study used secondary data which was collected 2 years pre-transaction and 2 years post-transaction from the financial statements of the company. Two tailed t-tests were performed on the calculated means to determine whether there is a significant difference between the pre and post-transaction performance.

## 4. Results

### *4.1. Descriptive statistics*

Table 2 shows the descriptive statistics of ROE for the whole sample. ROE of target firms in M&A transactions in banking and finance industry in Vietnam are positive during pre-transaction and post-transaction periods. There is a considerable decrease in the ROE of target firms from the pre-acquisition period to the post-acquisition period . Specifically,

**Table 2: Descriptive statistics of ROE in pre and post-acquisition periods**

| | ROE (t=-2) | ROE (t=-1) | ROE (t=0) | ROE(t=+1) | ROE (t=+2) |
|---|---|---|---|---|---|
| Mean | 21.38% | 16.31% | 14.55% | 10.49% | 12.53% |
| Median | 18.10% | 15.24% | 13.28% | 9.39% | 11.13% |
| Std. Dev | 14.89% | 16.74% | 11.71% | 9.12% | 13.79% |
| # Obs | 23 | 23 | 23 | 23 | 22 |

**Table 3: Descriptive statistics of ROA in pre and post-acquisition periods**

| | ROA (t=-2) | ROA (t=-1) | ROA (t=0) | ROA (t=+1) | ROA (t=+2) |
|---|---|---|---|---|---|
| Mean | 5.53% | 3.28% | 3.65% | 2.07% | 2.11% |
| Median | 2.48% | 1.97% | 2.54% | 1.99% | 2.72% |
| Std. Dev | 6.16% | 6.94% | 4.98% | 3.67% | 7.65% |
| # Obs | 23 | 23 | 23 | 23 | 22 |

**Table 4: Descriptive statistics of EPS in pre and post-acquisition periods**

| | EPS (t=-2) | EPS (t=-1) | EPS (t=0) | EPS (t=+1) | EPS (t=+2) |
|---|---|---|---|---|---|
| Mean | 3,073 | 2,549 | 2,931 | 1,736 | 2,378 |
| Median | 2,479 | 2,132 | 2,133 | 1,823 | 1,866 |
| Std. Dev | 2,619 | 3,082 | 3,402 | 1,298 | 2,446 |
| # Obs | 23 | 23 | 23 | 23 | 22 |

the average ROE of the target firms decreases from 21.38 percent and 16.31 percent in year -2 and -1, respectively, to 10.49 percent and 12.53 percent in year 1 and 2, respectively.

Table 3 and 4 provide information about ROA and EPS for the whole sample. Firms which are partial acquired perform well in general. ROA and EPS of those firms are positive during both pre-transaction and post-transaction periods. Similar to the trend of ROE, we also can observe a declining trend in ROA and EPS of target firms after the partial acquisitions.

### *4.2. Intra-firm comparison*

In order to identify the impact of the M&A events on the performance of target firms, we use Student t-test to examine the differences in ROE, ROA, and EPS of target firms before and after the events. Specifically, we compare ROE, ROA, and EPS in the following pairs: (-2; +1), (-2; +2), (-2; +0), (-1; +1), and (-1; +2).

** Return On Equity (ROE)*

According to table 5, there is a significant difference between ROE of target firms in the pre-acquisition and post-acquisition periods. The average differences between year -2 and 0, -2 and +1, -2 and +2 are 6.8 percent, 8.78 percent, and 10.87 percent, respectively. Moreover, the difference in ROE between year -1 and +1 is 7.8 percent. There is a tendency that ROE of target firms decrease after being partial acquired and the differences are highly significant.

**Table 5: Two-sample mean comparison test for ROE**

| Year (-2;+1) | Year (-2; +2) | Year (-2; 0) | Year (-1; +1) | Year (-1; +2) |
|---|---|---|---|---|
| 10.87%*** (p= 0.0023) | 8.78%** (p = 0.0225) | 6.8%** (p = 0.0454) | 7.8%* (p = 0.0751) | 3.97% (p = 0.2073) |

** Return On Assets (ROA)*

Similar to the results for ROE, there is also and declining trend in term of ROA of target firms in partial acquisition transactions. The ROA of target firms two years before the transaction are significantly higher compared to that of target firms after the transactions. The average differences between year -2 and 0, -2 and +1, -2 and +2 are 0.97 percent, 3.42 percent, and 3.46 percent, respectively.

**Table 6: Two-sample mean comparison test for ROA**

| Year (-2;+1) | Year (-2; +2) | Year (-2; 0) | Year (-1; +1) | Year (-1; +2) |
|---|---|---|---|---|
| 3.46%** (p = 0.0126) | 3.42%** (p = 0.0172) | 0.97%* (p = 0.0591) | 1.21% (p = 0.2314) | 1.17%** (p = 0.0454) |

** Earning Per Share (EPS)*

At the 95 percent confidence level, the Student t-tests show that the EPS of target firms two year before the transaction are significantly higher than that of target firms one year after the transactions and the difference is 1,366 Vietnamese dong. Moreover, the EPS of the target firms two year before the transaction also significant higher than that of the target firms two years after the transactions. The difference is 680 Vietnamese dong and significant at 10 percent level.

**Table 7. Two-sample mean comparison test for EPS**

| Year (-2;+1) | Year (-2; +2) | Year (-2; 0) | Year (-1; +1) | Year (-1; +2) |
|---|---|---|---|---|
| 1,336** (p = 0.0168) | 680* (p = 0.0823) | 190 (p = 0.4374) | 813 (p = 0.1250) | 173** (p = 0.0454) |

## 5. Conclusions

The literature about the impact of M&A events on firms' performance shows mixed results. Numerous studies conclude that firms improve performance after M&A transactions. However, several papers indicate that performance of firms reduces after M&A transactions. The main objective of this paper is to examine the impact of M&A events on the performance of the target firms in banking and finance industry in Vietnam over the period 2005-2013. In particular, we examine whether there is a significant change in performance of target firms when comparing the pre-transaction and post-transaction periods

Using accounting measures, namely ROE, ROA and EPS, we show evidence that targets in partial M&A transactions exhibit a significantly lower performance after the events. There is a tendency that ROE, ROA, and EPS of target firmsdecrease after being partial acquired and the differences are highly significant. The results are in line with that in Ravenscraft and Scherer (1989) who examined financial performance of target firms during 1957-1977 in US. They investigate 2732 lines of business by US manufacturing companies and find that mergers have substantial negative impact on the post-merger profitability.

Since the buyers mostly are foreign investors, the results imply that firms in banking and finance industry in Vietnam react negatively to

the participation of foreign stockholders. On the other hand, another plausible explanation is that firms in banking and finance industry in Vietnam realize a declining trend in their performance and they are interested in the participation of foreign investors. They expect that the expertise of foreign investors will help the firms to overcome the declining trend. More statistical tests should be done to test the second explanation when data are available.❑

**References**


1. Afolabi, J.A. (2011). Mergers and Acquisitions in the Nigerian Banking System: Issues and Challenges, Presented at the Workshop for Business Editors and Finance Correspondents Association of Nigeria at Manpower Development Institute, Dutse, November 28 – 29.
2. Datta, S., M. Iskandar-Datta and K. Raman (2001). Executive compensation and corporate acquisition decision, Journal of Finance 56, 2299-2336
3. Ismail, T.H., Abdou, A.A. & Annis, R.M (2011). Review of Literature Linking Corporate Performance to Mergers and Acquisitions, The Review of Financial and Accounting Studies, ISSN 1450 – 2812, Issue 1, 89 – 104.
4. Limmack, R.J. (1991). Corporate mergers and shareholder wealth effects: 1977-1986, Accounting and Business Research 21, 239-251
5. Loughran, T. and Anand M. Vijh, 1997, Do long term shareholders benefit from corporate acquisitions? Journal of Finance 52, 1765-1790
6. Ravenscraft, D. J., and Scherer, F. M. (1989). The profitability of mergers. International Journal of Industrial Organization, 7(1), 101–116.
7. Saboo, S. and Gopi, S. (2009). Comparison of Post-Merger Performance of Acquiring Firms (India) Involved in Domestic and Cross-Border Acquisitions", MPRA Paper No. 19274, University Library of Munich, Munich
8. Yeh, T. M., & Hoshino, Y. (2000). The effects of mergers and acquisitions on Taiwanese corporations. Review of Pacific Basin Financial Markets and Policies, 3(2), 183–199.1.

# RELATIONSHIP BETWEEN INTRA-FIRM LOGISTICS INTEGRATION AND TRANSACTION COSTS: AN EMPIRICAL STUDY OF INTERNATIONAL MULTIMODAL TRANSPORT COMPANIES IN VIETNAM

*Phuc TT. Nguyen*[*] *, Lin Crase*[**] *,*
*Nguyen Thi Thu Ha*[***]

**Abstract:**

*Whilst there is theoretical support for the view that there is a negative relationship between intra-firm logistics integration and transaction costs, this has been largely untested in an empirical sense at least. This study remedies this by reporting results from an empirical investigation of the International Multimodal Transport Industry in Vietnam. Extant literature on inter-departmental integration and transaction costs are briefly reviewed. Conceptualized hypotheses are then tested mainly using the Structural Equation Modeling (SEM) technique. Results from this study imply several mechanisms for reducing transaction costs and thus potentially guiding improvements in firm efficiency and performance. The paper also toucheson areas for future research.*

***Keywords:*** *Logistics, intra-firm logistics integration, transaction costs, international multimodal transport companies, structural equation modelling.*

***Date of submission: 18th April 2016; Date of revision: 22nd April; Date of approval: 25th April 2016.***

## 1. INTRODUCTION

Traditionally, activities that are associated with the movement and storage of goods and services into, through and out of firms were treated separately. They have historically been treated as isolated performance areas. For example, transportation has been considered separately from inventory or inbound logistics or outbound logistics (Ross, 2003, Bowersox, 1969). Some have considered this approach to be unduly restrictive insomuch as it fails to capture the benefits obtainable from integrated control (Bowersox, 1969). By way of contrast, the logistics discipline emphasizes the total system of material and service flows and storage rather than focusing on functions, departments, or institutions which may be involved in the process (Kast and Rosenzweig, 1992). Ideally, all related functions are holistically managed for the optimal flow and storage of goods and services and this is advanced as the appropriate scale of analysis. Integration is a process which facilitates systems' components to behave in a unified way, to rapidly and adequately respond, adjust, or adapt to the demands of other components for the benefit of the system as a whole (Kast and Rosenzweig, 1992, Barki and Pinsonneault, 2005). Integration

[*] University of Melbourne, Australia; Email: phuc.nguyen@unimelb.edu.au
[**] La Trobe University, l.crase@latrobe.edu.au
[***] Foreign Trade University, Vietnam; nguyenthithuha.cs2@ftu.edu.vn

thus plays a major role in logistics analysis. Accordingly, the process and outcomes from integration is a critical component likely to impact upon firm efficiency, effectiveness and performance (Chow et al., 1995).

Hitherto empirical studies on logistics integration borrow from a range of theoretical conceptualizations and cover interdepartmental and supply chain contexts (for instance, see Daugherty et al. (1996), Gustin et al. (1995), Murphy and Poist (1996), Fawcett and Clinton (1997) and Bowersox et al. (1999)). However, significant gaps remain. Firstly, most studies have ignored the integration of logistics activities where there is no logistics department per se. Secondly, the hypothetical negative relationship between logistics integration and associated transaction costs, as defined in Williamson's Transaction Cost Economics (TCE), to the authors' knowledge, has never been empirically tested. Lastly, there is an overt bias in the existing empirical studies towards Western-developed nations and manufacturing activities (Luo et al., 2001). Thus, the extent to which the findings from some of this work can be generalized remains problematic.

This research focuses on empirically investigating the relationship between within-firm integration of logistics activities (LI) and the firms' transaction costs (TC). The analysis is conducted in the context of international multimodal transport (IMT) firms (i.e. a service industry) in Vietnam. The justification for focusing on IMT resides in the fact that most studies in the area of transport have focused on transport issues independently (that is, with no connection to overarching logistics principles) or have treated transport as an element of a manufacturing firm's logistics systems (Stock, 2001). The extent to which logistics principles are actually applied by a transport company, as a service provider, thus provides an interesting nuance.

The paper itself is divided into five additional sections. The second section briefly discusses the theoretical background to the TCE literature and different types of organizational integration. The research hypotheses and conceptual model are then developed as part of this section. The research methods and results of hypotheses testing are presented in Section 3 and 4, respectively. Section 5 is used to consider the managerial implications, the limitations of the work and identify future research directions. Some brief concluding remarks are then presented in Section 6.

## 2. BACKGROUND

### *2.1. Transaction Cost Economics and Williamson*

Specialization and the division of labor have long been argued to bring benefits (Wallis and Douglass, 1986). According to Eigen-Zucchi (2001), for example, these processes spur productivity, which in turn generates better economic performance. The presence of specialization and division of labor brings about the necessity for exchange or transfers of resources, goods and services among specialized units (Eigen-Zucchi, 2001). These so-called 'transactions' can take place either in the market place or within organizations. One of the major implications of this approach is that transactions usually involve a cost of some form or another (Wallis and Douglass, 1986). Two types of transaction costs have been distinguished in Williamson's TCE literature: ex ante and ex post. The first includes the costs of drafting, negotiating, and safeguarding an agreement. Safeguards can take several forms,

for example, common ownership and credible commitments (Williamson, 1985). Ex post costs of contracting, on the other hand, are divided into four groups, comprising (1) the mal-adaption costs incurred when transactions drift out of alignment, (2) the haggling costs incurred if bilateral efforts are made to correct ex post misalignment, (3) the setup and running costs associated with the governance structures (often not the courts) to which disputes are referred, and (4) the bonding costs of effecting secure commitments (Williamson, 1985).

Given the criticism of Williamson's TCE that theoretical development has not been accompanied by successful measurement of transaction costs (Hobbs, 1996, Hobbs, 1997), another useful and operational approach to classifying Williamson's transaction costs has been proposed by Hobbs (1996) and Hobbs (1997). Here transaction costs are divided into three main classes: information costs, negotiation costs and monitoring or enforcement costs. Information costs include costs in the search for information about products, prices, inputs and buyer or sellers. Negotiation costs arise from the physical act of the transaction, such as negotiating and writing contracts (costs in terms of managerial expertise, the hiring of lawyers, etc.), or paying for the services of an intermediary to the transaction (such as an auctioneer or a broker). Monitoring costs arise after an exchange has been negotiated. This may involve monitoring the quality of goods from a supplier or monitoring the behavior of supplier or buyer to ensure that all the pre-agreed terms of the transaction are met. Also included are the costs of legally enforcing a broken contract, should the need arise. It should be noted that the relaxation of neoclassical assumption of perfect and costless information gives rise to all three types of transaction costs (Hobbs, 1996).

Underlying Williamson's TCE are two behavioral assumptions (i.e. bounded rationality and opportunism) and two others regarding the nature of transactions (i.e. asset specificity and frequency). Bounded rationality refers to human behavior that is "intendedly rational, but only limitedly so" (Simon, 1961, p.xxiv). In other words, although people may intend to make a rational decision, their capacity to evaluate accurately all possible decision alternatives is physically limited (Williamson, 1979). "Bounded rationality poses a problem only in situations of complexity or uncertainty where the ability of people to make a fully rational decision is likely to be impeded" (Hobbs, 1996, p.17).

Opportunism is defined as "self-interest seeking with guile. This includes but is scarcely limited to more blatant forms, such as lying, stealing, and cheating" (Williamson, 1985, p.47). Put differently, it recognizes that businesses and individuals within businesses will sometimes seek to exploit a situation to their own advantage. This does not imply all those involved in transactions act opportunistically all of the time, rather, it recognizes that the risk of opportunism is often present. This risk is greater when there exists a small numbers bargaining problem (Simon, 1961). For example, "the fewer the number of alternative suppliers available to the buyer, the more likely it is that an existing supplier will act opportunistically to alter the terms of the business relationship to their own advantage, such as by demanding a higher price than that previously agreed" (Hobbs, 1996, p.17).

Asset specificity refers to the degree to which "an asset cannot be redeployed to alternative uses and by alternative users without sacrifice of productive value" (Williamson, 1991, p.218). "Asset specificity arises when one partner to an exchange has invested resources specific to that exchange which have little or no value in an alternative use" (Hobbs, 1996, p.17). Asset specificity can take several forms, for example, site-asset specificity, physical-asset specificity, human-asset specificity and dedicated-asset specificity (Afuah, 2001). In the presence of specific assets, significant transaction costs can incur because the party who has made investment in specific assets is locked into a monopoly-like relationship (Kulkarni and Heriot, 1999).

Frequency refers to how often a particular transaction is undertaken. Increased frequency of a transaction is argued more likely to be associated with the internalization of economic activities (Williamson, 1985).

Treating transaction costs as friction, Williamson brings the above four behavioral assumptions together under the so-called "discriminating alignment hypothesis". According to this hypothesis, the parties to a transaction will, in a comparative way, match a transaction (which varies in frequency, asset specificity and consequently transaction costs) with a governance structure (which vary in terms of their ability to manage opportunism and bounded rationality) so that the costs of transacting are minimized. Put simply, given certain attributes of an exchange, firms are inclined to choose a mechanism of managing that transaction (i.e., market, intermediate arrangements or vertically integrated firms) which results in the lowest overall level of transaction costs. Theoretically, the decision on the appropriate governance mechanism is premised on comparing transaction costs of an exchange in different contexts.

Williamson's discriminating alignment hypothesis provides a useful tool for analyzing organizational integration. The first aspect of the application of Williamson's discriminating alignment hypothesis in this context is relatively straightforward: Vertical integration takes effect to minimize transaction costs in particular contexts. However, vertical integration is only one among various forms of inter-firm integration (Ellram, 1995). Basically, firms' early efforts to cooperate in this case result in full-ownership integration (i.e. vertical integration). Nevertheless, this form of inter-firm integration is proving increasingly problematic and often lacks the flexibility to respond to current business practices. Subsequently, other forms of integration have emerged in the form of strategic alliances, long-term supplier relationships, customers contracts and shared processes, for instance (Ellram, 1995, Stonebraker and Afifi, 2004). This range of non-ownership forms of inter-firm integration continues to fit within the category of 'hybrids' described by Williamson and are thus theoretically consistent with the notion of transaction costs minimizing arrangements.

Whilst the internal management of transactions is argued to benefit from low ex post search cost, low cost of drafting employment contract, and adapting uncertainty (Mathiesen, 2007), potential transaction costs due to the bounded rationality and opportunism persist. Specifically, internal management of diversified activities continues to incur cost in the form of administrating, monitoring, processing information and training

employees. The diversity of activities might also lead to costs from shirking and political efforts, the loss of competitive checks and the time taken to discover inefficiency (Mathiesen, 2007). Specific measures have therefore been developed to minimize transaction costs within a firm including organizational integrating mechanisms (e.g. mutual work adjustment, direct work supervision and standardization), rewards (e.g. salary, promotion possibilities, status, and bonuses) and sanctions (e.g. fire, loose status, reduced salary, loss of prospect for promotion, degradation and court sanctions) (Mathiesen, 2007). Viewed through the Williamson lens within-firm integration can also be viewed as a natural response to the firms' endeavors to minimize transaction costs.

### *2.2. Dimensions of Inter-departmental Integration*

Different levels of integration have been widely discussed in the organizational literature, including inter-departmental or inter-functional integration, inter-firm integration and inter-organizational functional integration. Inter-departmental integration is "the quality of the state of collaboration that exists among departments that are required to achieve unity of effort by the demands of the environment" (Lawrence and Lorsch, 1986, p. 11), or "how effectively organizational members can receive and interpret messages sent by other members or the environment, and to respond in an appropriate manner" (Grant as cited in Barki and Pinsonneault, 2005, p. 167).

What differentiates inter-departmental and inter-firm integration is the matter of full ownership. Departments within a firm are under the same leadership. As a result, tight control and formal authority can be of use, even when there is a lack of esprit de corps, goodwill, and/or mutual necessity among departments (Min, 2001a). Inter-firm integration, also called supply chain integration, includes all supply chain associations outside those occurring under common ownership (Stonebraker and Afifi, 2004). Put differently, this amounts to "*... an ongoing relationship between two organizations which involves a commitment over an extended time period, and a mutual sharing of the risks and rewards of the relationship*" (Ellram, 1995, p.41).

An additional variant of integration arises when inter-departmental integration is extended to include supply chain partners. Larson describes this as inter-organizational functional integration (Larson, 1994). More specifically, inter-organizational functional integration occurs when one department of one firm coordinates with one or more departments of other firms.

Integration of logistics activities within a firm, the focus of the research at hand, is arguably a manifestation of inter-departmental integration. Various dimensions for assessing the extent of this form of integration have been characterized throughout the literature and include communication, collaboration, formal structures, and formal authority. Each of these is discussed briefly below.

Firstly, it is suggested that successful inter-departmental integration is primarily achieved through the encouragement of information sharing activities among departments (Dougherty, 1992). It is believed that the frequent exchange of information helps reduce misconceptions and misunderstandings between departments (Stank et al., 1999).

Verbal and documented information can be exchanged formally through routine meetings, faxes, planned teleconferencing, conference calls, memoranda, and the transmission of standard documentation (Stank et al., 1999, Kahn and Mentzer, 1996). Informal information sharing is promoted by casual encounters, say around water coolers and coffee machines (Robbins and Barnwell, 2002) or by mutual adjustments, where "people informally interact with one another to coordinate" (Min, 2001b , p. 376). Embedded in the communication dimension are also various applications of information technology in order to improve the quality of interaction among departments (Jonscher as cited in Beretta, 2004, Power, 2005). However, one reservation of this component has been made by Kahn and Mentzer (1996) who suggest that too much formal communication might impede an effective inter-departmental relationship by burdening personnel with meetings, documentation efforts and information overload.

Collaboration, as one mechanism for firms to achieve interdepartmental integration, comprises deliberate programs to build esprit de corps between departments (Kahn and Mentzer, 1996) and voluntary processes (e.g., departments working together, sharing resources, and seeking to achieve collective goals) (Stank et al., 1999). Esprit de corps among departments can be achieved by linking the mission assigned to each unit to the value generation strategy of the firm (Beretta, 2004) and encouraging the adoption of a process view, whereby individual members within departments understand their roles in each value-added process (Beretta, 2004). This establishes a shared vision and common goals across departments (Kahn and Mentzer, 1996). As long as departments trust one another and are willing to work together, firms can utilize various voluntary coordinating programs such as unstructured, largely informal inter-departmental teamwork (Stank et al., 1999), coordination by mutual adjustment (Glouberman and Mintzberg, 2001) and sharing resources (Kahn and Mentzer, 1996). One important note about this dimension is that voluntary processes cannot happen without the prior existence of esprit de corps among departments. As a result, the existence of voluntary processes can itself be used as a proxy for the presence of esprit de corps among departments.

Underlying the argument for the necessity for collaboration is the assumption that the relationships among departments are innately competitive (Kahn and Mentzer, 1996), i.e. each of two parties has an interest in an issue such that any gain for either is at the expense of the other. However, according to Lawrence and Lorsch (1986), this is not always the case. Departments might not conflict with one another regarding basic goals. Rather, extant differences might be the result of structural segmentation and specialization. The resolution process as a result does not require efforts to establish common goals among departments. Therefore, whether collaboration is necessary is determined by whether conflicts among departments arise over basic goals or not (Lawrence and Lorsch, 1986). Nevertheless, the presence of collaborative processes would prima facie support greater degrees of integration.

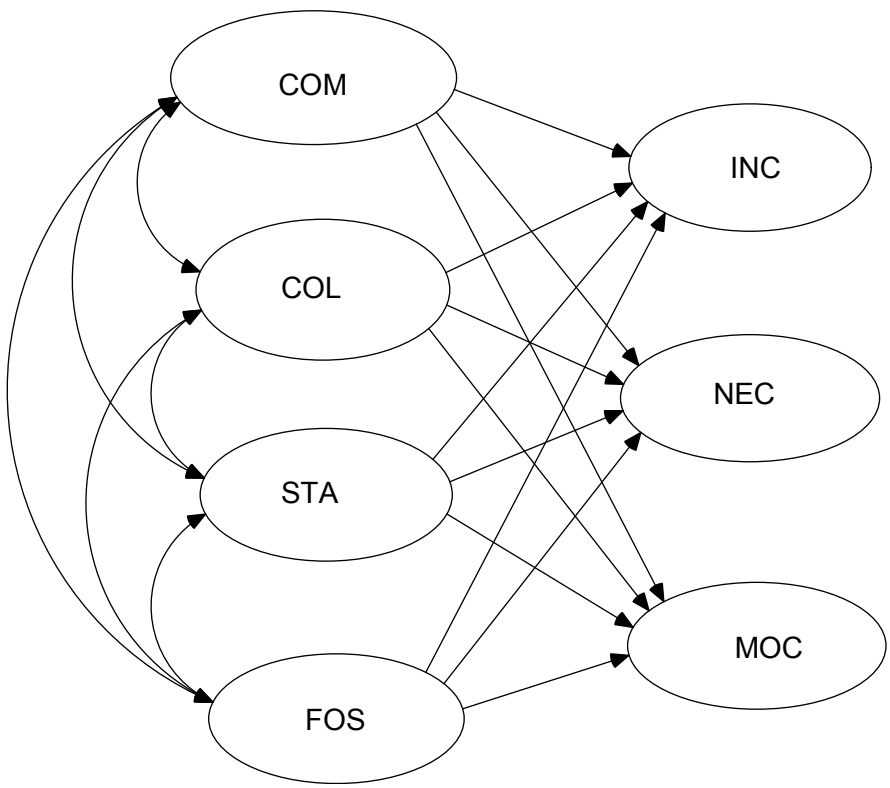
Formal authority involves giving responsibility for conflict resolution and integration to certain individuals or departments or

using a formal decision making hierarchy. Individuals who have formal authority for achieving integration are called integrators and can be competent representatives of the basic functional departments, managers at appropriate levels within the firm (Lawrence and Lorsch, 1986), or an integrating sp1Inter-departmental integration is popularly conceptualized as a multidimensional process. However, there is no general consensus about the relative weight of each dimension. For example, Kahn and Mentzer (199?) describe inter-departmental integration as comprising primarily communication and collaboration (Kahn and Mentzer, 1996); Lawrence and Lorsch (1986) and Glouberman and Mintzberg (2001) mainly focus on formal authority and standardization mechanisms. By way of contrast, Min combines all these mechanisms equally in his implementation framework of inter-departmental integration (Min, 2001b). Consequently, the application of this concept varies greatly from researcher to researcher.

### 2.3. Research Hypotheses and Conceptual Model

The third application of Williamson's discriminating alignment hypothesis to organizational integration effectively conceptualizes the relationship between integration of logistics activities within a firm and its association with transaction costs: *The higher intra-firm logistics integration, the lower the associated transaction costs*. However, any research that involves multi-dimensional concepts, like L and TC, would be much more informative if investigated at a component level (Cunningham, 2008).

**FIGURE 1. Theoretical Structural Model for Relationships among LI and TC Components**



Thus, in this study, LI and TC components, rather than summative measures of LI and TC as integrated constructs, are deliberately scrutinized.

For the purpose of relating LI and TC components, the useful classification of TC into three components - information cost (INC), negotiation costs (NEC), and monitoring cost (MOC) by Hobbs (1996) was initially employed. The four major dimensions of inter-departmental integration: Communication (COM), collaboration (COL), standardization (STA) and formal structures (FOS) were originally selected as components of LI, primarily on the grounds of the conceptual work summarized earlier.

Theoretically, these three components of TC (INC, NEC, and MOC) impact on total TC. Similarly, the higher the levels of COM, COL, STA and FOS, the higher will be aggregate LI. Moreover, there is a theoretically negative correlation between the two global constructs (LI and TC) and potential interaction effects between the components of each. These theoretical relationships are depicted in Figure 1. We hypothesize that: *The higher the perceived components of LI, the lower will be components of perceived TC and vice versa.*

## 3. RESEARCH METHODS

This section briefly describes the development of measures and the sample design. It is also used to provide a synoptic overview of the analytical procedures.

### *3.1. Development of Measures*

Initial indicators of constructs in this study were derived from two main sources: (1) Previous related studies and (2) underlying theoretical treatments. The LI construct borrowed questions from previous related studies but also involved the development of new items based on the theoretical dimensions of inter-departmental integration. As far as TC constructs were concerned, no previous studies on measuring TC costs have been undertaken in the context of logistics processes, let alone in Vietnam. Consequently, all of the items in this study were developed or modified from existing definitions of the components of TC.

A set of questions was developed and then tested for content validity and reliability. The final list of questions is presented in the Appendix. For LI and TC items, respondents were asked to indicate agreement based on a five-point Likert scale where 1 = Strongly disagree; 2 = Somewhat disagree; 3 = Neither disagree nor agree; 4 = Somewhat agree and 5 = Strongly agree.

### *3.2. Sample Design*

A sample frame transport companies in three major cities in Vietnam (Hanoi, Haiphong and Ho Chi Minh City) was established. The rationale for including firms from these three sites is that IMT is an international service, and firms that are located in large cities with international border-gates will be more likely to be involved in IMT services.

Senior managers were targeted in this study in order to ensure reasonable reliability of perceived evaluation. The pilot test resulted in 50 responses from the 157 companies contacted. In the mail survey stage (i.e., the survey proper), questionnaires were sent to 701 transport companies (original sample minus the number of companies contacted in the pilot test). In this context, significant effort was made to encourage firms to respond. First, firms were contacted by phone to establish their preparedness to participate. Second,

a survey was mailed to those expressing a willingness to complete the questionnaire. Third, personalized correspondence and return mail was supplied. Fourth, follow-up phone calls were employed to encourage response. The outcome was a total response of 102. Of the surveys returned, 67 were received two weeks after initial distribution with the remaining 35 being retrieved after follow-up phone calls. Together, the pilot and survey studies resulted in a total of 152 responses from a sample frame of 709, representing a response rate of 26%.

An analysis of non-response bias was conducted. The mean scores of two random variables (LI31 and TC1) were compared for responses obtained before follow-up phone calls (i.e. early responses) and responses received after follow-up phone calls (i.e. late responses). No significant difference (at $p<0.5$) in means was revealed, and thus, we cautiously contended that non-response bias is unlikely to be a major constraint in this instance.

### 3.3. Analytical Techniques

As previously discussed, the empirical measurement of LI and TC constructs has been largely underdeveloped. Consequently, exploratory factor analysis (EFA), an approach that does not set *a priori* constraints on the estimation of factors or the numbers of factors to be extracted (Hair et al., 2006), was used to explore the dimensionality of LI and TC.

The Structural Equation Modeling (SEM) technique was subsequently employed to test the relationships between LI and TC components. The justification for this choice was two-fold. Firstly, this study involved latent variables and SEM is the only viable technique that allows for the incorporation of latent constructs in the analysis and for the correction for measurement error in the estimation process itself (Hair et al., 2006). Secondly, this study was designed to test multiple relationships among LI and TC components. SEM offers the most efficient estimations of a series of separate but interdependent, multiple regression equations simultaneously. Accordingly, it is possible to define a model to explain the entire set of relationships with SEM rather than separately testing single relationships between dependent and independent variables (Hair et al., 2006).

Due to the limited sample size of 152, a single indicator latent variable model which uses average scores of LI and TC components as scale indicators (as known as item parcelling technique) was developed for the purpose of increasing the ratio of sample size to parameters to be estimated. As a result of that, the ratio reached 6.08:1, higher than the minimum cutoff of 5:1 as stipulated by Kline (2005) and was arguably acceptable (Cunningham, 2008).While arguably being less informative than a model that incorporating all measured variables, this model still accounts for measurement errors inherent in the constructs under consideration (Cunningham, 2008).

## 4. RESULTS

### *4.1. Exploratory Factor Analysis*

Four dimensions of LI and three of TC were extracted using principal component analysis, Oblimin rotation method and a cutoff of 0.45 for significant factor loadings. Results show that items did not converge into their theoretically designated concepts. As illustrated in Table 1 below, the extracted components of LI are represented by combinations of indicators of multiple theoretical scales (values in bold). For instance, they are COM, COL and STA scales for Component 1. This situation also holds true for TC factors (see Table 2).

**TABLE 1. Factor Loadings for LI Construct Items**

| | Component | | | |
|---|---|---|---|---|
| | **1** | **2** | **3** | **4** |
| | **.756** | -.036 | -.175 | -.026 |
| COL2 | **.700** | .014 | .172 | .106 |
| STA1 | **.665** | .105 | -.062 | -.198 |
| COM3 | **.605** | -.143 | .127 | -.199 |
| COL3 | **.589** | -.204 | .303 | -.098 |
| STA2 | **.562** | .106 | .149 | .073 |
| COM6 | **.526** | .276 | .002 | -.239 |
| COM1 | **.526** | -.041 | .188 | .202 |
| COL5 | .414 | .030 | .087 | -.173 |
| FOS1 | .238 | .133 | .207 | -.002 |
| STA4 | .250 | **.727** | -.236 | .354 |
| COM9 | .030 | **.638** | .032 | -.022 |
| COL9 | -.126 | **.606** | .083 | -.062 |
| STA5 | -.150 | **.547** | .314 | -.056 |
| COL8 | -.025 | **.525** | .040 | -.357 |
| COL7 | -.041 | **.513** | .134 | -.035 |
| COL6 | .214 | .351 | -.064 | -.191 |
| FOS4 | -.109 | .092 | **.710** | .150 |
| FOS2 | .137 | -.109 | **.568** | .102 |
| STA3 | .109 | .211 | **.543** | .002 |
| COM4 | .084 | -.045 | **.532** | -.308 |
| FOS3 | .134 | -.124 | **.504** | -.288 |
| COM7 | .245 | .116 | **.494** | -.002 |
| COL4 | .073 | .063 | **.489** | -.274 |
| COM5 | .342 | .016 | .418 | -.081 |
| COM2 | .016 | .082 | .342 | .015 |
| COL10 | .206 | -.116 | -.128 | **-.792** |
| COM10 | .114 | .112 | -.033 | **-.733** |
| COL11 | .231 | .301 | -.063 | **-.576** |
| COM11 | -.189 | .048 | .164 | **-.522** |
| COM8 | .381 | .176 | -.048 | **-.459** |

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.
Factor loadings above 0.45 were considered significant.

**TABLE 2. Factor Loadings for TC Construct Items**

| | Component | | |
|---|---|---|---|
| | **1** | **2** | **3** |
| NEC6 | **.729** | -.051 | -.092 |
| NEC5 | **.644** | -.247 | .129 |
| MOC1 | **.635** | -.107 | .074 |
| NEC1 | **.620** | -.018 | .198 |
| INC3 | -.084 | **-.803** | .147 |
| MOC2 | .108 | **-.790** | -.032 |
| NEC2 | .042 | **-.787** | -.033 |
| INC1 | .078 | **-.707** | -.103 |
| INC2 | .128 | **-.686** | -.103 |
| MOC5 | -.432 | **-.496** | .371 |
| INC4 | -.073 | .177 | **.746** |
| NEC4 | -.029 | -.135 | **.740** |
| MOC4 | .154 | -.116 | **.624** |
| MOC3 | .301 | .081 | **.529** |
| INC5 | .403 | .101 | .419 |
| NEC3 | .327 | -.059 | .384 |

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.
Factor loadings above 0.45 were considered significant.

**TABLE 3. LI Scales**

| Factor | Content |
|---|---|
| Strategic Goals Communication (SGC) | Functional units understand the firms' strategic goals and their role in achieving them |
| Managerial Support (MS) | Support that flows from standardization of processes and the resultant response of the various units within the organization to internal requests |
| Multi-functional Projects (MP) | Utilization of work-related projects purposely designed to include more than one functional unit |
| Conflict Resolution (CR) | Functional units' willingness to discuss and resolve problems when they arise |

**TABLE 4. TC Scales**

| Factor | Content |
|---|---|
| Negotiation Costs (NG) | Trust between functional units and responsiveness to negotiating new and existing orders |
| Information costs (IC) | Time that functional units spent sorting through information, and effort expended tracking internal orders |
| Staff Availability Costs (SAC) | Staff members available to source, interpret and track information and/or available to undertake negotiations as required |

Names were given to newly extracted constructs based on the highest loading variables on each of the component (Hair et al., 2006, Pallant, 2005), as illustrated in Tables 3 and 4 below

***4.2. Hypothesis Tests***

Results of hypothesis tests are shown in Table 5 and its visual portrayal appears as Figure 2, below. Evidence suggests that a Bolllen-Stine bootstrapping was insignificant at p = 0.06. Notwithstanding the weak fit implied by two among five conventional model fit indices - RMSEA higher than the anticipated 0.08 and TLI lower than 0.95 - it is worth noting that Karl Joreskog, the highly acclaimed founder of SEM contends that the chi-square (represented by the Bollen-Stine bootstrap p value in this case due to the data's modest departure from multivariate normality) should be regarded as the paramount measure of fit (Cunningham, 2008). On these grounds, the model fit was contended to be adequate overall.

Relationships among LI and TC components were assessed by reviewing the significance, magnitude, and direction of each parameter coefficient. Four relationships: MS-IC, CR-NC, CR-IC and CR-SAC were statistically significant (values in bold). While CR was negatively related to three TC factors (i.e. IC, NC and SAC), the relationship between MS and IC was positive.

**TABLE 5. Overall Model Statistics and Construct Relationships**

| | SGC | MS | MP | CR |
|---|---|---|---|---|
| **NC** | 0.11 | 0.23 | 0.16 | **-0.90** |
| **IC** | -0.32 | **0.60** | 0.07 | **-0.41** |
| **SAC** | 0.14 | 0.12 | 0.01 | **-0.79** |
| **Bollen-Stine bootstrap** | p = .060 | | | |
| **SRMR** | 0.032 | | | |
| **RMSEA** | 0.157 | | | |
| **GFI** | 0.971 | | | |
| **TLI** | 0.710 | | | |
| **CFI** | 0.959 | | | |

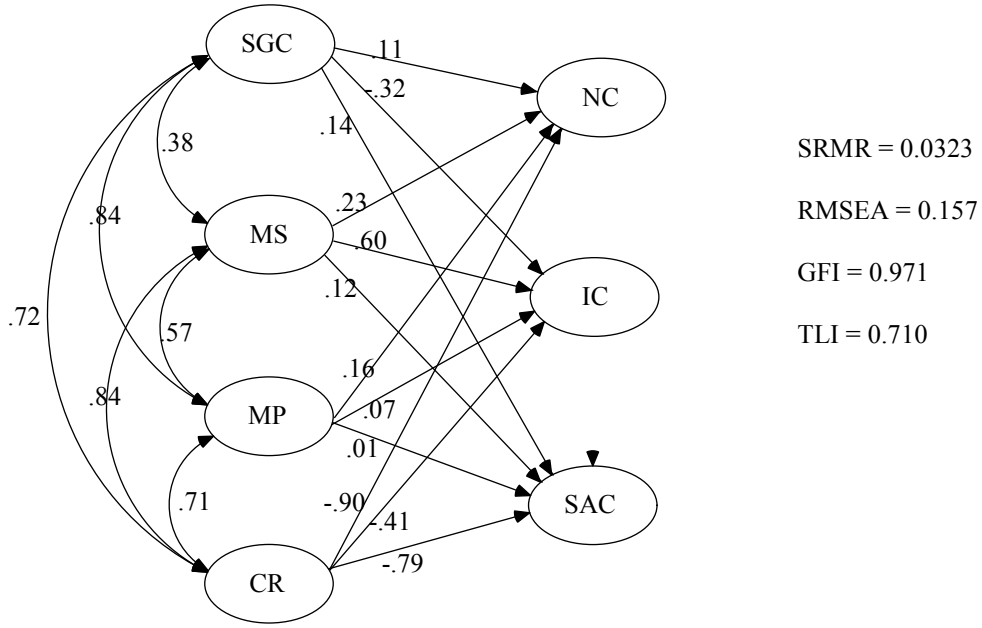



**FIGURE 2. Standardized Parameter Estimates for Relationships between LI and TC Components**

## 5. IMPLICATIONS, LIMITATIONS AND FUTURE RESEARCH

This exploratory research attempted to test the relationship between logistics integration and transaction costs. Results showed that Strategic Goal Communication and Multi-functional Projects had no statistically discernable impact on any of the dimensions of Transaction Costs. Managerial Support also showed no significant capacity to limit Negotiation Costs and Staff Availability Costs while unexpectedly increasing Information Costs. Overwhelmingly, the most influential relationships evident in the model are those between Conflict Resolution and the various dimensions of transaction costs. More specifically, the data support the view that Conflict Resolution plays a role in reducing all variants of transaction costs in international multimodal transport firms in Vietnam. It is not feasible to address all possible components in the space offered but several observations are worth noting.

Plausible explanations for these results could be inferred by referring to the nature of Vietnam's international multimodal transport industry and the observations drawn from case analyses by Nguyen et al. (2008). For instance, as discussed by Nguyen et al. (2008), a staff member involved in service delivery in international multimodal transport companies frequently possesses the flexibility to make commitments regarding contract conditions as well as their performance. Standardization adds an element of certainty to these processes and this may assist those operating in this environment. However, standardization might also act as a constraint on flexibility in some circumstances. For example, an urgent order from an important customer might be delayed due to standardized procedures. This might be one reason for the unanticipated relationships

between Managerial Support and the various transaction cost components in this instance.

Nguyen et al. (2008) also noted that coopetition - a phenomenon where two firms cooperate in some business activities while simultaneously competing with one another (Luo, 2005) - was commonly found in the operations of international multimodal transport firms in Vietnam (Nguyen et al., 2008). In such a setting having clear guidance on the mechanisms for reducing conflict would appear critical to containing information costs, negotiation costs and the costs associated with having staff to monitor and respond to calls for additional negotiation. It is also worth noting that Vietnam is very much a country in transition. There are strong incentives to increase market access and the modification of economic and social norms often creates an environment where transactions can be costly. In such a setting clear guidelines for resolving disputes become paramount, which underlies the important role of Conflict Resolution in transaction cost reduction.

The overall significance of this study has several perspectives. Firstly, it highlights the strategic role of logistics integration insomuch as logistics integration can contribute to the firms' efficiency via reduced transaction costs. Put differently, these results provide some justification for focusing on the integration of logistics activities within firms since, prima facie, those firms with greater investments in logistics integration would appear to enjoy a competitive advantage over their rivals.

Secondly, from a transaction cost perspective, this analysis provides useful empirical evidence in an area that has hitherto been widely neglected. The analysis here provides another piece of evidence that sheds light on the theorized relationship between organizational activities and transaction costs.

At a practical level, these results suggest that some firms respond to high transaction costs by embarking on the integration journey. Operationally, they would appear well-advised to focus on resolving conflicts among departments as a firs step in this process, at least in settings similar to those encountered in this study. Moreover and as we noted earlier in this paper, investments in activities to build esprit de corps may yield relatively little if there is minimal conflict over goal definition in the first case. In that context a heavy focus on clear mechanisms for conflict resolution offers more scope.

Notwithstanding these observations, it would be reckless to conclude that three logistics integration components: Strategic Goal Communication, Multi-functional Projects and Managerial Support are obsolete in all settings, particularly given several high correlations among logistics integration components. For instance, correlations between Strategic Goal Communication - Conflict Resolution, Strategic Goal Communication - Multi-functional Projects, Multi-functional Projects - Conflict Resolution, Managerial Support - Multi-functional Projects and Managerial Support - Conflict Resolution were 0.72, 0.71, 0.71, 0.57 and 0.56 respectively. Such high correlations raise a question about the extent to which the impact of logistics integration components can be considered discretely in any setting. Put differently, whilst the results support the view that the greatest gains on transaction costs can be made by focusing most energies on improving Conflict Resolution, it is not possible to rule out the underlying

influence of Strategic Goal Communication, Multi-functional Projects and Managerial Support. This question remains unresolved and warrants further research.

In addition, the limited sample size has acted as a restraint in several ways. Firstly, a more comprehensive SEM model capable of incorporating all observable variables could not be developed. Rather, a less informative model - a single indicator latent variable model in which logistics integration and transaction cost components were measured by their average scores - was used for testing relationships among logistics integration and transaction cost components. Secondly, it would be ideal if logistics integration and transaction cost measurements are confirmed on a separate sample after the EFA. However, due to the limited sample size, this test was not possible. Consequently, future research which offers greater scrutiny to these areas is desirable.

## 6. CONCLUDING REMARKS

The results of this study validate, in large part, the hypothesized relationship between logistics integration and transaction cost. At a practical level, they point to several ways in which firms might transaction costs, particularly by focusing on solving conflicts among logistics functional units. Like many other studies, this research is not free from limitations. Consequently, directions for further research have been identified and include the development of more informative SEM models and greater attention to the overall influence of Strategic Goal Communication, Multi-functional Projects and Managerial Support.❑

**References**


1. AFUAH, A. 2001. Dynamic Boundaries of the Firm: Are Firms Better Off Being Vertically Integrated in the Face of a Technological Change? *Academy of Management Journal,* 44**,** 1211.
2. BARKI, H. & PINSONNEAULT, A. 2005. A Model of Organizational Integration, Implementation Effort, and Performance. *Organization Science,* 16**,** 165.
3. BERETTA, S. 2004. Enabling Integration in Complex Contexts: The Role of Process Based Performance Measurement Systems. *Managerial Finance,* 30**,** 69.
4. BOWERSOX, D. J. 1969. Physical Distribution Development, Current Status, and Potential. *Journal of Marketing (pre-1986),* 33**,** 63.
5. BOWERSOX, D. J., CLOSS, D. J., STANK, T. P. & MICHIGAN STATE UNIVERSITY 1999. *21st Century Logistics: Making Supply Chain Integration a Reality,* Oak Brook, Council of Logistics Management.
6. CHOW, G., HEAVER, T. D. & HENRIKSSON, L. E. H. 1995. Strategy, Structure and Performance: A Framework for Logistics Research. *Logistics and Transportation Review,* 31**,** 285-303.
7. CUNNINGHAM, E. 2008. *Structural Equation Modelling Using Amos,* Melbourne, Statsline.
8. DAUGHERTY, P. J., ELLINGER, A. E. & GUSTIN, C. M. 1996. Integrated Logistics: Achieving Logistics Performance Improvements. *Supply Chain Management,* 1**,** 25-33.
9. DOUGHERTY, D. J. 1992. Interpretive Barriers to Successful Product Innovation in Large

Firms. *Organization Science,* 3**,** 179-202.

10. EIGEN-ZUCCHI, C. 2001. *The Measurement of Transactions Costs.* Ph.D., George Mason University.
11. ELLRAM, L. M. 1995. Partnering Pitfalls and Success Factors. *International Journal of Purchasing and Materials Management,* 31**,** 35.
12. FAWCETT, S. E. & CLINTON, S. R. 1997. Enhancing Logistics to Improve the Competitiveness of Manufacturing Organizations: A Triad Perspective. *Transportation Journal,* 37**,** 18.
13. GLOBERMAN, S. & SCHWINDT, R. 1986. The Organization of Vertically Related Transactions in the Canadian Forest Products Industries. *Journal of Economic Behavior & Organization,* 7**,** 199.
14. GLOUBERMAN, S. & MINTZBERG, H. 2001. Managing the Care of Health and the Cure of Disease - Part II: Integration. *Health Care Management Review,* 26**,** 70.
15. GUSTIN, C. M., DAUGHERTY, P. J. & STANK, T. P. 1995. The Effects of Information Availability on Logistics Integration. *Journal of Business Logistics,* 16**,** 1.
16. HAIR, J. F., JR, BLACK, W. C., BABIN, B. J., ANDERSON, R. E. & TATHAM, R. L. 2006. *Multivariate Data Analysis,* Upper Saddle River, N.J., Pearson Prentice Hall.
17. HOBBS, J. E. 1996. A Transaction Cost Approach to Supply Chain Management. *Supply Chain Management,* 1**,** 15-27.
18. HOBBS, J. E. 1997. Measuring the Importance of Transaction Costs in Cattle Marketing. *American Journal of Agricultural Economics,* 79**,** 1083.
19. HODGE, B. J., ANTHONY, W. P. & GALES, L. M. 1996. *Organizational Theory: A Strategic Approach,* Upper Saddle River, NJ, Prentice Hall.
20. KAHN, K. B. & MENTZER, J. T. 1996. Logistics and Interdepartmental Integration. *International Journal of Physical Distribution and Logistics Management,* 26**,** 6-14.
21. KAST, F. E. & ROSENZWEIG, J. E. 1992. System Concepts: Pervasiveness and Potential. *Management International Review,* 32**,** 40.
22. KLINE, R. B. 2005. *Principles and practices of structural equation modeling,* New York, Guilford Press.
23. KULKARNI, S. P. & HERIOT, K. C. 1999. Transaction Costs and Information Costs as Determinants of the Organizational Form: A Conceptual Synthesis. *American Business Review,* 17**,** 43.
24. LAMBERT, D. M., COOPER, M. C. & PAGH, J. D. 1998. Supply Chain Management: Implementation Issues and Research Opportunities. *International Journal of Logistics Management,* 9**,** 1.
25. LARSON, P. D. 1994. An Empirical Study of Inter-organizational Functional Integration and Total Costs. *Journal of Business Logistics,* 15**,** 153.
26. LAWRENCE, P. R. & LORSCH, J. W. 1986. *Organization and Environment: Managing Differentiation and Integration,* Boston, Harvard Business School Press.
27. LUO, W., VAN HOEK, R. I. & ROOS, H. H. 2001. Cross-cultural Logistics Research: A Literature Review and Propositions. *International Journal of Logistics: Research and Applications,* 4**,** 57-78.
28. LUO, Y. 2005. Toward Coopetition within a Multinational Enterprise: A Perspective from Foreign Subsidiaries. *Journal of World Business,* 40**,** 71-90.

29. MATHIESEN, H. 2007. *Four Basic Contracts: Market, Bargain, Firm and Government* [Online]. Available: http://www.encycogov.com/B11ResearchTraditions/TCE/Exhi_1DecomposeTC.asp [Accessed 3rd August 2007].
30. MIN, S. 2001a. Inter-Corporate Cooperation in Supply Chain Management. *In:* MENTZER, J. T. (ed.) *Supply Chain Management.* Thousand Oaks, CA: Sage.
31. MIN, S. 2001b. Inter-functional Coordination in Supply Chain Management. *In:* MENTZER, J. T. (ed.) *Supply Chain Management.* Thousand Oaks, CA: Sage.
32. MINTZBERG, H. 1996. Reading 6.2: The Structuring of Organizations. *In:* MINTZBERG, H. & QUINN, J. B. (eds.) *The Strategic Process: Concepts, Contexts, Cases.* 3rd ed. Upper Saddle River, NU: Prentice Hall.
33. MOLLENKOPF, D., GIBSON, A. & OZANNE, L. 2000. The Integration of Marketing and Logistics Functions: An Empirical Examination of New Zealand Firms. *Journal of Business Logistics,* 21**,** 89.
34. MURPHY, P. R. & POIST, R. F. 1996. Comparative Views of Logistics and Marketing Practitioners Regarding Interfunctional Co-ordination. *International Journal of Physical Distribution and Logistics Management,* 26**,** 15-28.
35. NGUYEN, T. P., CRASE, L. & DURDEN, R. G. 2008. Organizational Logistics Processes: A Literature Review and an Exploratory Investigation of International Multimodal Transport in Vietnam. *Asia Pacific Management Review,* 13**,** 403-418.
36. PALLANT, J. 2005. *SPSS Survival Manual: A Step by Step Guide to Data Analysis Using SPSS for Windows (Version 12),* Crows Nest, NSW, Allen & Unwin.
37. POWER, D. 2005. Supply Chain Management Integration and Implementation: A Literature Review. *Supply Chain Management: An International Journal,* 10**,** 252-263.
38. QUINN, J. B. & MINTZBERG, H. 1988. *The Strategy Process: Concepts, Contexts, and Cases,* Englewood Cliffs, N.J., Prentice-Hall.
39. ROBBINS, S. P. & BARNWELL, N. 2002. *Organisation Theory: Concepts and Cases,* French Forest, N.S.W., Prentice Hall.
40. ROSS, D. F. 2003. *Introduction to E-supply Chain Management: Engaging Technology to Build Market-winning Business Partnerships,* Boca Raton, FL, St. Lucie Press.
41. SIMON, H. 1961. *Administrative Behavior,* New York, NY, Macmillan.
42. STANK, T. P., DAUGHERTY, P. J. & ELLINGER, A. E. 1999. Marketing/Logistics Integration and Firm Performance. *International Journal of Logistics Management,* 10**,** 11.
43. STOCK, J. R. 2001. Doctoral Research in Logistics and Logistics-related Areas: 1992-1998. *Journal of Business Logistics,* 22**,** 125.
44. STONEBRAKER, P. W. & AFIFI, R. 2004. Toward a Contingency Theory of Supply Chains. *Management Decision,* 42**,** 1131.
45. WALLIS, J. J. & DOUGLASS, C. N. 1986. Measuring the Transaction Sector in the American Economy, 1870-1970. *In:* ENGERMAN, S. L. & GALLMAN, R. E. (eds.) *Long-Term Factors in American Economic Growth.* Chicago: The University of Chicago Press.
46. WILLIAMSON, O. E. 1979. Transaction Cost Economics: The Governance of Contractual Relations. *Journal of Law and Economics,* 22**,** 233-62.
47. WILLIAMSON, O. E. 1985. *The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting,* New York London, Free Press ; Collier Macmillan.
48. WILLIAMSON, O. E. 1991. Comparative Economic Organization: The Analysis of Discrete Structural Alternatives. *Administrative Science Quarterly,* 36**,** 269.

## APPENDIX

**Questionnaire Items**

| | |
|---|---|
| ***Communication (COM)*** | |
| COM1: | Technologies (like phone, email, fax) are easily available to communicate between functional units |
| COM2: | Technologies (like phone, email, fax) are freely available to communicate between functional units |
| COM3: | The information that passes between functional units is accurate |
| COM4: | The information that passes between functional units is timely |
| COM5: | The information that passes between functional units is formatted appropriately |
| COM6: | Functional units effectively share operational information |
| COM7: | There are current and appropriate systems that integrate information |
| COM8: | Information can be easily shared amongst functional units |
| COM9: | My firm actively utilizes industry standards for data exchange (e.g. Electronic Data Interchange - EDI) |
| COM10: | Functional units openly communicate to each other about emerging problems |
| COM11: | Technologies are available to allow people to communicate off-site |
| ***Collaboration (COL)*** | |
| COL1: | Functional units clearly understand the firm's strategic goals |
| COL2: | Functional units understand their role in achieving the firm's strategic goals |
| COL3: | Functional units cooperate |
| COL4: | Functional units actively plan together |
| COL5: | Functional units share a vision of the firm |
| COL6: | Functional units willingly share resources to achieve a common vision |
| COL7: | My firm has a system of incentives which involves the sharing of benefits and risks between functional units for any cooperative efforts |
| COL8: | My firm provides opportunities for members of functional units to interact socially |
| COL9: | My firm has a job-switching program which provides opportunities for personnel to rotate jobs |
| COL10: | Functional units collaborate to resolve problems when they arise |
| COL11: | Successes are widely shared regardless of the operational unit involved |
| ***Standardization (STA)*** | |
| STA1: | The routines within functional units are well established |
| STA2: | The routines within functional units are understood by all |
| STA3: | There is training and education available to help employees develop an understanding of the firm's standards |

| | |
|---|---|
| STA4: | It is a general expectation that functional units will be responsive to the requirements of other units within the firm |
| STA5: | There are standardized processes in place to resolve conflict between functional units |
| ***Formal Structures (FOS)*** | |
| FOS1: | Functional units extensively utilize cross-functional work teams for managing day-to-day operations |
| FOS2: | A task force, comprising members from different functional units, is used to implement new projects or mission |
| FOS3: | Members of each functional unit can work effectively off-site, if necessary |
| FOS4: | My firm employs people whose role includes integrating the various functional units |
| ***Information Costs (INC)*** | |
| INC1: | It is costly to gather information to allow the functional unit to do its job |
| INC2: | It takes a lot of effort to translate the information from one functional unit into a form useful for another |
| INC3: | Functional units spend a lot of time sorting through information |
| INC4: | Each functional unit has staff who spend time sourcing, interpreting and acting on internal information |
| INC5: | Each functional unit has resources solely devoted to sorting out and understanding information |
| ***Negotiation Costs (NEC)*** | |
| NEC1: | It is easy to come to an agreement among functional units on orders from one another |
| NEC2: | Confirming orders takes a long time |
| NEC3: | Modifications to orders are easily negotiated |
| NEC4: | Functional units are accessible to negotiate new and existing orders |
| NEC5: | Functional units are responsive to negotiating new and existing orders |
| NEC6: | Functional units trust each other which makes negotiating easy |
| ***Monitoring Costs (MOC)*** | |
| MOC1: | It is easy to follow up orders with other functional units |
| MOC2: | Tracking orders being processed by other functional units is difficult |
| MOC3: | It is easy to raise problem with functional units when delivery of orders proves unsatisfactory |
| MOC4: | Conflicts are easily resolved amongst functional units regarding delivery of orders |
| MOC5: | The relationship among functional units has been negatively influenced by internal conflicts |

# NETWORK AND FIRM PERFORMANCE UNDER **BALANCED SCORECARD APPROACH**

***Le Thai Phong****
***LeThi Thu Ha*****

**Abstract:**

*Network and firm performance is an interesting topic, attracting many scholars. There is a sizable body of research on the field. However, this paper is unique since (1) we approach firm performance under balanced scorecard framework, and (2) this is the first paper conducted in a developing context of Vietnam. Utilizing survey data from 158 firms operating in Vietnam, we found that network impacts positively on firm performance. The more network a firm has, the better financial performance, the more customer satisfies, and the more learning and growth of employees. The managerial implication is that firms should invest in building network with others at both individual level and organizational level.*

**Keywords:** *network, firm performance, learning and growth, financial perspective, customer perspective*

***Date of submission: 30th March 2016; Date of revision: 15th April; Date of approval: 22nd April2016***

## 1. Introduction

The capability to network is one of the most significant skills any firm, business or entrepreneur should possess as this is a relatively easiest way to grow business through getting to know customers and competitors as well as the industry as a whole. Networking plays an important role in business, particularly in emerging markets where the level of environmental uncertainties is relatively high (Luo, 2003). While there are many factors that can influence the success of a venture, only recently have researchers begun to highlight the potential significance of networking involvement. It is widely acknowledged that relationships are the social capitals for success, therefore, one of the best ways for enterprises to reach for opportunities and develop strategy is through networking.

Recent developments in the field of network research have made inter-organisational relationships attractive to social science scholars. One of the most important research areas is the link between relationship networks and firm performance. Indeed, there has been opposing arguments relating to whether building up a network effectively will contribute to success of business. Many scholars suggest that making use of networks can stimulate firms' performance while others argue there has been little evidence to support for this point. However, the existing literature focuses mostly on qualitative research. In addition, firm performance is mostly

* PhD, Foreign Trade University; Email: lethaiphong@ftu.edu.vn
** PhD, Foreign Trade University; Email: ha.le@ftu.edu.vn. Two authors are equally contributed to the paper

analyzed under a single financial or market-based indicator, such as profit or market share. Moreover, majority of the literature has been focused on developed contexts with advanced market structures. This paper is to tackle these mentioned drawbacks of literature by deploying balanced scorecard approach in measuring firm performance, and subjective data is collected via survey from 158 firms in Vietnam. The paper is to offer a better understanding of the role of network in firm performance with hope to shed more light to this interesting issue. It is hoped that the findings presented and discussed in this paper will help build a better theory of firm performance as well as inform owners, advisors, and policy makers.

## 2. Theoretical framework

### *2.1. Concept of network*

Networking, while holding various definitions in the past, has recently taken its concept more closely towards business field. Ivan Misner, founder and chief visionary officer of BNI, has concluded that networking is "The process of developing and activating relationship to increase your business, enhance your knowledge, expand your sphere of influence or serve your community." (Misner, 2012). Surely, networking is not simply just meeting and talking to people to build relationship. Instead, it is rather a structured plan for one firm to get to know people or other firms that would like to do business and cooperate with or at least are able to introduce those who would. It is necessary to make a plan and commit to it. Any firms that do networking or networker should be devoted to their plans and particular actions. Half of the success of networking is contributed by the devotion of networkers as by how much they spend their time and effort being out there in the game. Another half is constituted by the efficiency of networking. The term is always easier said than done. Being proactive is mainly the key point to networking. One cannot network successfully without taking control of the situation instead of just reacting to it. Networking requires getting out of the comfort zone and being challenged. Networking holds various benefits for a firm that would develop its performance pretty effectively. Firm performance is a term that is usually mistaken with organizational effectiveness. However, business performance, or firm performance is only a subset of organizational effectiveness. It refers to the degree to which the financial and operational outcome of a company reach expectation or set goals.

Networking is the activity of building relationships and connections from one to other, which help benefit its owner in various ways, especially for business purpose. Networking occurs between different parties, who can be persons, groups, and collectives of organizations. Networks and network relationships provide channels for information that is required for successful business operations. Some people do not take networking seriously as they assume that networking is just about going out and meeting people. In the context of business, networking is a structured plan of controlling all the external sources of knowledge in order to serve the firm's benefits. The structure of network linkages provides both opportunities and constraints on the actions of participants. It is critical that all information gained from networking being used efficiently so as to make right decisions for the firm while the

networks are maintained and expanded.

Networking refers to making connections and building enduring, mutually beneficial relationships. As far as business organizations are concerned, networking theory indicates that the ability of owners to gain access to resources not under their control in a cost effective way through networking can influence the success of business ventures (Zhao and Aram, 1995). While there are many factors involved in the success of business enterprises, only recently that have researchers started to investigate the importance of an owner – manager's networking involvement (Cromie and Birley 1992). Coleman suggested that by networking, information can be reached in a cost effective way to contribute to decision making process. Otherwise, Granovetter (1983) argued that individuals whose networks include primarily family and friends are likely to have access to less information than those with many acquaintances. Florin et al. (2003) suggested that networking can gain benefits for members by giving them access to the social resources included in a network. That is to say, networking can give a chance for small and medium enterprise (SME) owners can tap needed resources that are "external" to the firm (Jarillo 1989). Julien (1993) indicated that this form of cooperation can stimulate the economies of scale, avoiding diseconomies caused by large size.

The notion that firms corporate with competitors to improve business performance was considered to be contradicted to conventional wisdom (Rowley et al., 2000). However, with the increasing complexity of business environment where intersectoral nature of knowledge increase rapidly, there is a need to go beyond traditional boundaries of firms to seek for knowledge from others. It is becoming more and more challenging for firms to capitalize all available knowledge (George et al., 2001). In other words, focusing entirely on firm's internal resource and capabilities is no longer offering competitive advantage. Rather, the nexus of relationships with other parties contribute to the production function (Schilling & Steensma, 2001). Networking with other firms would help firms to improve its knowledge reservoir, catching up with cutting edge technology, a critical aspect to the innovative performance of firms (Cohen and Levinthal, 1990; Rosenkopf & Nerkar, 2001).

Matusik (2000) argues that the ability of firm to recognize and exploit external knowledge plays a critical role in improving competitiveness. Internalizing external knowledge can be achieved via observing and identifying best practices from others, or via collaborating with different firms in the same or other industries (e.g., Inkpen, 1998; Lubatkin et al., 2001). Networking facilitates learning ability of firms and improve innovation outputs, which is empirically proved by Darr et al., 1995; Shan et al., 1994). Networking could offer the best for firms: gaining knowledge from partners without paying for accumulating experience (Ingram, 2002).

Literature on learning and innovation (e.g., Anand & Khanna, 2000; Child, 2001; Kale, Dyer, & Singh, 2002) show that networking can be able to facilitate creating new knowledge, which is not possessed by parties before. The entirely new knowledge is developed via the activities of sharing, transferring existing knowledge that combining with existing knowledge from partner to make something

totally new. Via networking, firms can acquire knowledge and skills that cannot be able to, or hardly, develop internally. This might include the direct transfer of assets, the sharing of key equipment, intellectual property, or personnel, and the transfer of organizational knowledge (Dyer & Singh, 1998; Hamel & Prahalad, 1989).

How much knowledge firms acquire via networking activities depends on its absorptive capacity (Cohen & Levinthal, 1990). Absorptive capacity would be built and developed via R&D activities of firms, which facilitate the ability to recognize and value external knowledge. Over time, the firm improve its ability in assimilating and sharing external knowledge internally via the development of appropriate processes, policies, and procedures. The firm is more skillful in using the combination of internal and external knowledge to recognize technological trends, create products and markets, and maneuver strategically.

Social network theory suggests that a firm's behaviors are significantly influenced by inter-and intra-firm relationships which are embedded in the social context of environment (Galaskiewicz & Zaheer, 1999; Gulati, 1999). The interaction with other players in the social network help improve firm's ability in creating value, expanding the boundaries of firms (Dyer & Singh, 1998; Gulati, 1999). In a social network, a firm can enter into social networking activities, such as strategic alliance, to access to knowledge, technology, and other resources.

### *2.2. Firm performance under balanced scorecard perspective*

Firm performance refers to the process of analyzing the action's efficiency and effectiveness as compared to goals and objectives (Neely, Gregory & Platts, 1995). Each firm has their own suitable methods of measuring its performance. For instance, firm performance can be measure by the market share and or by growth rate, ROI, profit margin, etc. Firm performance does not only demonstrate how well the firm is doing but also offers significant important information in managing firm activities and determining follow-up solutions.

An assessment of the measurement of performance within the field of business and management, traditionally, show that scholars normally use financial indicators to indicate how good or bad a firm performs in a certain period of time. Research shows that commonly used measures of financial performance consist of sales-based indicators, return on assets, return on investment and profitability. However, measuring performance using the accounting profit rate is unstable, as the profit rate may vary in different industries significantly over the business cycle (Globerman, 1979). Using financial measures may fail adequately to reflect the extent to which a firm achieves its short-term and long-term objectives (Geringer & Hebert, 1991). A firm may have a variety of objectives, ranging from profitability, market share and technology transfer to material assets. Traditional accounting measures thus are unable statistically to detect the excellence of the firm (Chakravarthy, 1986). Hax & Majluf (1984) argue that accounting-based measures are less reliable and that 'market' or 'value-based' measurements are more appropriate in reflecting business performance.

To tackle the abovementioned weakness, in this study, we employ a more advanced

way to measure firm performance, by using balanced scorecard (BSC) approach. The BSC system not only incorporates financial and non-financial measures but also translates a company's mission and strategy into tangible objectives and measurements. It is considered a "balanced" framework because it incorporates results from previous efforts with measures that drive future performance, grouping them according to four different perspectives: financial, customer, internal business processes, and learning and growth (Arroyo, 2010). This is a holistic approach, being able to evaluate firms from various angles. Banker et al. (1996) revealed that nonfinancial measures of customer satisfaction were significantly associated with future financial performance and contained additional information not reflected in historical financial measures.

*The Financial Perspective:* The financial perspective retains the short-term approach of measuring profitability, sales growth or generation of cash flow, mainly because these measurements indicate the company's financial success from a shareholder's point of view. The financial perspective is to evaluate whether the company's strategies are translating into bottom-line improvements of the company. Financial measures tend to be historical, and do not reveal the present situation of the business environment and the prospects of the future performance. However, financial measures are still important because there is no guarantee that improved operating performance will indeed lead to financial success (Kaplan & Norton, 1992). The financial performance such as profitability of an organization is significant to its success, therefore cannot be dismissed. According to Kaplan & Norton (1992), operational improvements that do not lead to financial success indicate that the implementation of the strategy of an organization needs to be revisited. However, trying to capture the success strategy using the traditional financial indicators requires the selection of financial measures that will most effective suited by the product life cycle stage. There are three possible stages described by Kaplan and Norton (1996), that is rapid growth, sustain, and harvest. For the growth stage, companies will probably use measures such as increased sales volumes, acquisition of new customers, and growth in revenues that can evaluate the growth and development of the company. In the sustain stage financial measures will be return on investment (ROI) and the return on capital employed, measures on this stage are purposely directed to evaluate the effectiveness of the organization. Finally, the harvest stage, measures are payback periods and revenue volume aimed to reap the rewards of the strategy that will potentially be based on different cash flow analysis that attempt to evaluate the company's success in harvesting profits from maturing products or services.

*The customer perspective:* The customer perspective includes not only market share and new customer acquisition but also measures related to the value propositions that the company will deliver to its customers, such as customer intimacy, operational excellence or product leadership (Arroyo, 2010). The aim of the customer perspective is to ascertain the needs of the customers, and then devise appropriate the value the company wants to apply to the end-user that will potentially satisfy their needs taking into account the measure of quality and perceived

value of the products or services that are supplied to the customer. According to Kaplan and Norton (1992), customers are primarily concerned with time, quality, performance and service, and costs. For a company to attain its customer satisfaction and retention ought to deliver on time, offer innovative products/ services and technological excellence that will render the company's offering at a satisfactory cost, because if customers are not satisfied, they will seek products and services elsewhere. Customer measures are considered leading indicators of future performance.

*The internal business perspective:* The internal business processes perspective identifies critical internal processes in which the company must excel in order to deliver the value propositions that will attract and retain customers (Arroyo, 2010). The purpose of the internal business perspective is to determine the key business processes that create and deliver the goods and services of the company to the customers whilst develop measures to ensure that these processes are working well. By focusing on the activities and key processes required, it enhances the company's efforts to excel at providing the value expected by the customers, hence that the measures in the customer perspective will be supported. The processes in the in the internal business perspective have impact on the financial perspectives, whereas well implemented measures that attain smaller lead-times or better quality may result in greater profit margins. Contrary, poor performance in critical business processes can lead to a decline in customer satisfaction and ultimately in profit margins. These measures serve as focal guidelines for managers to focus on the important internal operations that will aid them meet customers' expectations. According to Kaplan & Norton (1992), companies should focus on business processes that have the most significant impact on customer satisfaction and are required to excel and compete in their industry. Measures in the internal business perspective could be innovation rates, service measures, lead-time, quality measures, efficiency measures, costs reductions

*The innovation and learning perspective:* The learning and growth perspective identifies the capabilities required to deal with the competitive environment so as to create long-term growth and continuous improvement (Arroyo, 2010). The purpose of the innovation and learning perspective is to determine the ability of the company to continually improve and innovate. This is the foundation of any strategy and centers on the human and intangible assets of the company. As discussed earlier, intangible assets are increasingly important in today's globalized economy as business success lies on it. Thus, the focus is mainly on the internal skills and capabilities that are required to support the value creation, which includes the areas of individual and corporate self improvement and technological support and tools. This perspective tries to define the human and developmental requirements of the company that will enable ambitious objectives in the other three perspectives to be achieved. To increase shareholder value a firm must constantly able to innovate, learn and improve which will result in firm growth. Theoretically, through increased improvement, businesses are able to improve their internal processes, leading to greater customer satisfaction, corporate growth, and increased profits (Scott et al. 2012). The possible measures in this perspective are illness rates, employee turnover and education and development.

### *2.3. The link between networking and firm performance*

While there are many factors that can contribute to the performance of a venture, only recently have researchers begun to emphasize the potential significance of networking (Cromie and Birley 1992). According to Coleman (1988), networking can provide access to information, a costly yet inevitable factor in the decision making process, in a more cost effective manner. Therefore, the use of network can lower a firm's risk of 'failure' and increase its chances of 'success'. Even though not strongly demonstrated, there have been a limited number of empirical studies that have documented a positive association between networking and firm performance. Throughout history, there were prime findings of the association between networking and performance. For example, Potts (1977) noted that successful companies relied more heavily on accountants' information and advice than did unsuccessful companies. Duchesneau and Gartner (1990) found that successful firms were more likely to have used professional advice. Donckels and Lambrecht (1995) found that network development, particularly at the national and international level, was positively associated with firm growth. Kent (1994) stated that the financial performance of a group of small pharmacy businesses was positively related to using external management advisory services, which was backed up by Lerner, Brush and Hisrich's statement (1997) that there was a significant link between network affiliation and profitability, and that the use of outside advisors was related to revenue. Hustedde and Pulver (1992) found that entrepreneurs who failed to seek assistance were less successful in acquiring equity capital. Similarly, Larsson et al. (2003) found that a lack of contacts with outside expert advisors was an obstacle to the expansion of small businesses. Although the positive impacts of networking are acknowledged, one major shortcoming of prior studies refers to evaluating the effects of specific network configurations on performance. According to Hoang and Antoncic (2003), network configuration can be defined as the pattern of relationships involving direct and indirect ties with different external actors. Moreover, there is considerable ambiguity and debate within the literature regarding appropriate network configuration for competitiveness (Pittaway et al., 2004). As prior studies also hold diverse views on how to capture a network configuration, this research gap can be further expanded. For example formal vs. informal configurations, strong vs. weak ties (Granovetter, 1973), customer-oriented (Jacob, 2006) vs. supplier-oriented (Arend, 2006) configurations. To solve this problem, the study of Baum et al. (2000) can give a general view on network configurations, distinguishing networks with upstream partners (e.g. suppliers), downstream partners (e.g. customers), and horizontal partners (e.g. competitors). Networking with upstream partners deals with direct suppliers, which can be important for new ventures and small firms as their involvement can lead to development of more efficient processes (Bradley, Meyer, & Gao, 2006). In his study Arend (2006) found that upstream configuration has a positive effect on performance. According to Ragatz, Handfield, & Scannell, (1997), networking with upstream partners is also believed to positively affect speed, responsiveness, cost, quality and technology of a firm's production.

Lee et al. (2001) stated that networking with established suppliers would increase the credibility of firms among third parties, such as customers and other interested parties. Thus, networking certainly accelerate firm's development in a rather fast manner.

Since firm performance has four perspectives under BSC approach, the paper is going to test the following hypotheses:

H1: Network positively associates with financial performance of firm

H2: Network positively associates with customer performance of firm

H3: Network positively associates with internal business processes of firm

H4: Network positively associates with learning and growth of firm

## 3. Research methodology

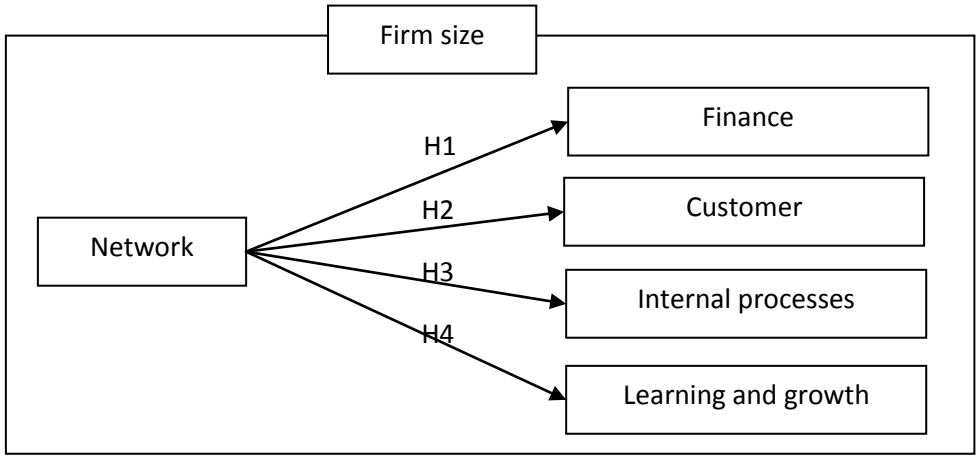



**Figure 1: Research framework**

Research model is:

Finance $= \alpha + \beta1*\text{network} + \beta2*\text{firm size} + \varepsilon$

Customer $= \alpha + \beta1*\text{network} + \beta2*\text{firm size} + \varepsilon$

Internal process $= \alpha + \beta1*\text{network} + \beta2*\text{firm size} + \varepsilon$

Learning and growth $= \alpha + \beta1*\text{network} + \beta2*\text{firm size} + \varepsilon$

Due to the nature of five variables (finance, customer, internal process, learning and growth, and network), we decided to use subjective data via survey technique. Questionnaire is developed with 21 items (5-point Likert scale) (see Appendix). Data are coded and use SPSS package to analyze, as following: network has 3 items: Q12.1-Q12.3; finance has 4 items Q16.1-Q16.4, customer as 5 items: Q17.1-Q17.5, internal process has 2 items: Q18.1-Q18.2, and learning and growth has 6 items: Q19.1-Q19.6. Number of employee (under Logarithmic form) is used as a control variable to capture firm size, which can affect the ability of firm to network. The questionnaire was sent to 200 firms operating in various industries, in various geographical areas in Vietnam. 158 usable responses are used in this study.

## 4. Research findings and discussion

### *4.1. Descriptive statistics*

Among 158 firms, 92 firms are in service sector (banking, finance, consulting, trading, insurance, exporting…), and the remaining 66 firms are in manufacturing sector (mechanical engineering, auto-spare part,…). 81 firms from the North, 32 firms from the Centre, and 45 firms from the South.

Three items of network ability of firms have a mean range from 3.44 to 3.73; and 17 items of firm performance. Cronbach Alphas of both network and firm performance are above 0.7, showing the reliability of the questionnaire. This table also presents the adequateness of factor analysis, with KMO of both network and firm performance are above 0.6 and Barlett's tests are significant at 1 percent level (Table 1).

Table 2 shows that 3 factors have Eigenvalues larger than a conventional threshold of 1, suggesting that 3 factors are remained for further analysis.

**Table 1: Cronbach Alpha and factor analysis of network and firm performance**

| | Reliability test | | Factor analysis | |
|---|---|---|---|---|
| | Cronbach Alpha | N | KMO | Barlett's test sig |
| Network | 0.868 | 3 | 0.716 | 0.000 |
| Firm performance | 0.920 | 17 | 0.864 | 0.000 |

**Table 2: Total variance explained**

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 5.604 | 43.107 | 43.107 | 5.604 | 43.107 | 43.107 |
| 2 | 2.273 | 17.487 | 60.594 | 2.273 | 17.487 | 60.594 |
| 3 | 1.126 | 8.665 | 69.258 | 1.126 | 8.665 | 69.258 |
| 4 | .763 | 5.869 | 75.128 | | | |

Table 3 indicates that Q17.1, Q17.2, Q18.1, and Q18.2 are loaded at two factors. We decided to discard these four variables and rerun factor analysis. Table 4 suggests that only three factors are remained: factor 1 includes Q19.1-Q19.6 (*learning and growth* aspect), factor 2 includes Q16.1-Q16.4 (*finance* aspect), and factor 3 includes Q17.3-Q17.5 (*customer* aspect). These 3 factors can explain 69.26% the variance of performance. Means of 3 factors are used as three dependent variables for regression.

For the case of networking, factor analysis shows that only 1 factor is remained, and this factor can explain 79.18% variance. Mean of there three variable is used as independent variable. Descriptive statistics of four variables are described in Table 5.

**Table 3: Rotated Component Matrix[a]**

| | Component | | |
|---|---|---|---|
| | 1 | 2 | 3 |
| Q16.1 | | | .792 |
| Q16.2 | | | .829 |
| Q16.3 | | | .802 |
| Q16.4 | | | .691 |
| Q17.1 | | .659 | .520 |
| Q17.2 | | .749 | .377 |
| Q17.3 | | .708 | |
| Q17.4 | | .828 | |
| Q17.5 | | .822 | |
| Q18.1 | .381 | .500 | .464 |
| Q18.2 | .439 | .438 | .433 |
| Q19.1 | .710 | | |
| Q19.2 | .821 | | |
| Q19.3 | .717 | | |
| Q19.4 | .840 | | |
| Q19.5 | .793 | | |
| Q19.6 | .709 | | |

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

**Table 4: Rotated Component Matrix[a]**

| | Component | | |
|---|---|---|---|
| | 1 | 2 | 3 |
| Q16.1 | | .837 | |
| Q16.2 | | .859 | |
| Q16.3 | | .802 | |
| Q16.4 | | .686 | |
| Q17.3 | | | .675 |
| Q17.4 | | | .894 |
| Q17.5 | | | .812 |
| Q19.1 | .721 | | |
| Q19.2 | .819 | | |
| Q19.3 | .722 | | |
| Q19.4 | .842 | | |
| Q19.5 | .805 | | |
| Q19.6 | .711 | | |

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 4 iterations.

**Table 5: Correlations matrix**

| | | N | Mean | Std. Dev. | (1) | (2) | (3) | (4) |
|---|---|---|---|---|---|---|---|---|
| (1) | learninggrowth | 158 | 3.83 | .730 | 1 | | | |
| (2) | finance | 158 | 3.48 | .697 | .373** | 1 | | |
| (3) | customer | 158 | 3.64 | .777 | .391** | .563** | 1 | |
| (4) | networking | 158 | 3.57 | .800 | .333** | .564** | .518** | 1 |

**. Correlation is significant at the 0.01 level (2-tailed).

**Table 6: Regression results**

| | **Model 1** | **Model 2** | **Model 3** |
|---|---|---|---|
| networking | 0.244*** (2.85) | 0.495*** (7.62) | 0.463*** (5.90) |
| Lemployee | 0.048 (0.95) | 0.081** (2.11) | -0.033 (-0.72) |
| R | 0.071 | 0.349 | 24.2 |
| F | 4.34** | 30.29*** | 18.08*** |

*Note: **, ***: significant level at 5% and 1%*
*Model 1: dependent variable: learning and growth*
*Model 2: dependent variable: finance*
*Model 3: dependent variable: customer*

*Source: SPSS results*

Table 6 are the results of regression. Model 1, Model 2, and Model 3 test the impacts of network on learning and growth, financial performance, and customer, respectively. Employee (under logarithmic form) is a controlled variable in all three models. As can be seen, network variables are statistically significant at 1 per cent level in all models. For Model 1, when firm improves network 1 point, learning and growth performance increases 0.244 point. For Model 2, when network

improves 1 point, financial performance of firm improves 0.495 point. And, for Model 3, when network improves 1 point, customer perspective improves 0.463 point. All three hypotheses are strongly supported.

There is a positive relationship between network and firm performance. When network increases 1 point, firm performance increases 0.468 point, approving the hypothesis set forth. The results of this paper can be summarized in Table 7.

**Table 7: Hypothesis testing results**

| | Hypotheses | Supported or not |
|---|---|---|
| H1 | *Network positively associates with financial performance of firm* | Supported |
| H2 | *Network positively associates with customer performance of firm* | Supported |
| H3 | *Network positively associates with internal business processes of firm* | Not tested |
| H4 | *Network positively associates with learning and growth of firm* | Supported |

## 5. Conclusions

The ability to identify key factors associated with the performance of firms has been of significant interest to entrepreneurs. Although many studies have investigated the factors of success in many countries, accurate models for predicting venture performance are not widely available (Lussier and Pfeifer 2001). The study, therefore, aims to examine (and model) the potential impact of networking on firm performance.

Utilizing survey data from 158 firms operating in Vietnam, we found that network impacts positively on firm performance. The more network a firm has, the better financial performance, the more customer satisfies, and the more learning and growth of employees. The managerial implication is that firms should invest in building network with others at both individual level and organizational level.

To be concluded, as the industry is becoming more and more competing through development, business enterprises should invest in their networks, both formal and informal, for either expected or unexpected benefits. In business, the executives with broad and deep networks, together with excellent networking skill are likely to become the game changer, the key to success of a firm. Therefore, encouraging networking might well be highly beneficial if the objective is to maximize business survival and growth.

Networking has become more popular in the large scale such as business or industry ones since it has such a significantly positive impact on the overall firms performance. Networking could increase a company's position on the market and also its profitability. Secondly, it cannot be denied that networking helps a firm mainly in getting to know competitors and other cooperative agents. And finally, since networking is not only done by companies but also by individuals and employees, it helps a firm improve its human resource and intellectual resource by recruiting talents. With its many benefits that eventually lead a better-off firm performance, networking should be more invested in and taken more seriously.❑

**References**


1. Anand, B. N. & Khanna, T. 2000. Do firms learn to create value? The case of alliances. Strategic Management Journal, 21: 295-315.
2. Arroyo, P. (2010). Implementing a Three-Level Balanced Scorecard System at Chilquinta Energía, International Journal of Case Study in Management, 8(2) pp. 1-20
3. Banker, R., S. Lee, and G. Potter. (1996). A field study of the impact of a performance-based incentive plan. Journal of Accounting and Economics 21 (2): 195-226.
4. Chakravarthy, B. (1986). Measuring strategic performance. *Strategic Management Journal,* 7(5), pp 437-458.
5. Child, J. 2001. Learning through strategic alliances. In M. Dierkes & A. B. Antal & J. Child & I. Nonaka (Eds.), Handbook of organizational learning and knowledge: 657-680. Oxford: Oxford University Press.
6. Cohen, W. M. & Levinthal, D. A. 1990. Absorptive capacity: A new perspective on learning and innovation. Administrative Science Quarterly, 35(1): 128-152.
7. Darr, E. D., Argote, L., & Epple, D. 1995. The acquisition, transfer, and depreciation of knowledge in service organizations: Productivity in franchises. Management Science, 41(11): 1750-1762.
8. Dyer, J. H. & Singh, H. 1998. The relational view: Cooperative strategy and sources of interorganizational competitive advantage. Academy of Management Review, 23(4): 660-679.
9. Galaskiewicz, J. & Zaheer, A. 1999. Networks of competitive advantage. In S. Andrews & D. Knoke (Eds.), Research in the Sociology of Organizations, Vol. 16: 237-261. Greenwich, CT: JAI Press.
10. George, G., Zahra, S. A., Wheatley, K. K., & Khan, R. 2001. The effects of alliance portfolio characteristics and absorptive capacity on performance. A study of biotechnology firms. The Journal of High Technology Management Research, 12: 205-226.
11. Geringer, J. & Hebert, L. (1991). Measuring performance of international joint ventures. *Journal of International Business Studies*, 22(2), 249-263.
12. Globerman, S. (1979). Foreign direct investment and spillover efficiency benefits in Canadian Manufacturing Industries. *Canadian Journal of Economics,* 12, 42-56.
13. Gulati, R. 1998. Alliances and networks. Strategic Management Journal, 19: 293-317.
14. Hamel, G., Doz, Y., & Prahalad, C. K. 1989. Collaborate with your competitors and win. Harvard Business Review, 67(1): 133-139.

15. Hax, A.C. & Majluf, N.S. (1984). *Strategic management: an integrative perspective*. Englewood Cliffs, NJ: Prentice-Hall

16. Hoque, Z., and W. James. 2000. Linking balanced scorecard measures to size and market factors: impact on organizational performance. Journal of Management Accounting Research 12: 1-17

17. Ingram, P. 2002. Interorganizational learning. In J. A. C. Baum (Ed.), The Blackwell companion to organizations: 642-663. Oxford: Blackwell Business.

18. Inkpen, A. C. 1998. Learning and knowledge acquisition through international strategic alliances. Academy of Management Executive, 12(4): 69-80.

19. Kale, P., Dyer, J. H., & Singh, H. 2002. Alliance capability, stock market response, and long-term alliance success: The role of the alliance function. Strategic Management Journal, 23: 747-767.

20. Kaplan, R. S., & Norton, D. P. (1996). Balanced Scorecard: Translating Strategy into Action. Harvard Business School.

21. Kaplan, R.S., & Norton, D. P. (1992). The Balanced ScorecardMeasures That Drive Performance. Harvard Business Review.

22. Lubatkin, M., Florin, J., & Lane, P. (2001). Learning together and apart: A model of reciprocal interfirm learning. Human Relations, 54(10): 1353-1382.

23. Matusik, S. F. (2000). Absorptive capacity and firm knowledge: Separating the effects of public knowledge, flexible firm boundaries and firm absorptive abilities, Working Paper.

24. Rosenkopf, L. & Nerkar, A. (2001). Beyond local search: Boundary-spanning, exploration, and impact in the optical disk industry. Strategic Management Journal, 22: 287-306.

25. Rowley, T. J., Behrens, D., & Krackhardt, D. (2000). Redundant governance structures: An analysis of structural and relational embeddedness in the steel and semiconductor industries. Strategic Management Journal, 21: 369-386.

26. Schilling, M. A. & Steensma, H. K. (2001). The use of modular organizational forms: An industry-level analysis. Academy of Management Journal, 44(6): 1149-1168.

27. Scott M. B, Jack, W.W. & Hause, E.L. (2012). Using Employee and Customer Perspectives to Improve Organizational Performance. Kenexa Research Institute, Lawrence Fogli, Editor.

28. Shan, W., Walker, G., & Kogut, B. (1994). Interfirm cooperation and startup innovation in the biotechnology industry. Strategic Management Journal, 15: 387-394.

# THE ECONOMICEFFECTS OF AIRLINE ALLIANCES AND MERGERS IN THE AIRLINE INDUSTRY

*Hoang Truong Giang*[*]
*Tran Thi Kim Anh*[**]

**Abstract:**

*The paper discusses the impacts of international consolidation in the airline industry, with a focus on alliances and mergers which are two typical forms of consolidation. It provides a comprehensive overview of airline alliances and mergers development within the framework of economic effects. The paper compares economic effects on airlines as well as benefits for consumers and analyses the differences between various mergers and alliances as well as the synergies generated thereof. In all respects this paper attempts to provide a suitable framework for future research of international consolidation in the airline industry, as a strategy for international network development.*

***Keywords:*** *International Consolidation, Airline Industry, Economic Effects, Airline Alliances, Airline Mergers.*

***Date of submission: 3rd April 2016; Date of revision: 15th April; Date of approval: 22nd April2016.***

## 1. Introduction

### *1.1. A brief history of Airline Alliance*

The first formation of airline alliances was related to the expansion of the hub-and-spoke scheme and the airlines' need to develop domestic and international networks. After the US Airline Deregulation Act of 1978, US airlines changed network structures in order to take advantage of hub economies. Large US airlines formed regional alliances by establishing code shares with regional airlines, a cost-effective way to feed into profitable long-haul and medium-haul networks.

By 2001, there were five large strategic alliances in the North Atlantic area – SkyTeam, Oneworld, Star Alliance, Qualiflyer and Wings. Nevertheless, based on each alliance's frequency of flights to all the inhabited continents in the world, only Star Alliance and Oneworld could be considered as global-reaching alliances. Eventually the scenario of multi-airline alliance with global reach stabilized with three current Global Airline Alliances – SkyTeam, Oneworld, and Star Alliance. Each Global Airline Alliance was founded with one of the "Big Three" European airlines (Lufthansa, Air France and British Airways), a major US airline, and an Asian major airline. As of 2006 when the first African airline, South African Airways, joined Star Alliance as the 18th member, the alliance could be considered as truly global.

During the past decade, the picture of the

[*] PhD Candidate, Victoria University, Autralia.
[**] PhD, Foreign Trade University, Vietnam.

airline industry with three global alliances has been continuously reinforced by the growth of Star Alliance, Oneworld and SkyTeam, and the absence of further consolidation between global alliances or the rise of new strategic multi-airline alliances. By 2012, the majority of large network legacy airlines had aligned into one of three global alliances. In 2011, they carried 68% of international scheduled Revenue Passenger Kilometres (RPKs), and provided 59.5 % of world capacity share, as shown in Figure 1 (Airline Business, 2012). In fact, by 2012 Star Alliance had presence in 181 countries, Oneworld in 145, and SkyTeam in 169 (Airline Business, 2012). There are about 40 unaligned airlines, most of which are small airlines and low cost carriers with the exception of Emirates and Air India.

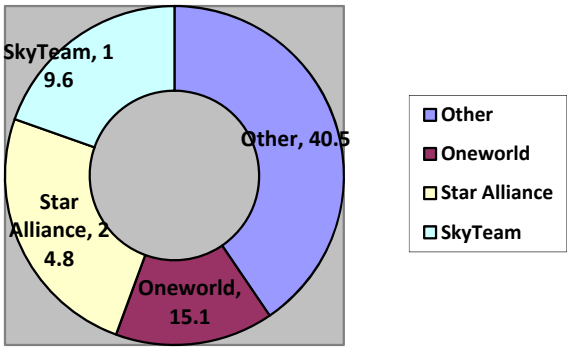



**Figure 1: Alliances Market share (2011)**

*Source: Airline Business, September 2012, page 28*

### *1.2. A brief history of Airline Merger*

The most integrated form that two airlines can become is when they enter into a merger and act as one. More than 200 airlines have merged since the start of deregulation in 1978 in the U.S providing the involved airlines with larger gains in efficiency.[1] In recent years, the global airline industry has experienced an increase in many cases of merger. According to Airline Business Magazine (2013), in the US, the new American, Southwest Airlines, Delta Air Lines, and United Airlines and their regional affiliates carry up to 90% of US domestic traffic.[2] Also, Europe experiences a period of consolidation motivated by International Airlines Group (British Airways with Iberia), Air France-KLM and Lufthansa Group (who took over Swiss and Austrian Airlines).

#### Airline Mergers in US

The US air transport industry has been experiencing substantial merger activity since its initial time, particularly immediately after the deregulation in 1978. A flurry of mergers throughout the 1980s, when Delta Air Lines and Western Airlines merged, and American Airlines and Air California merged. In 1988, merger review authority was transferred from the Department of Transportation (DOT) to Department of Justice (DOJ). Since 1998, in spite of tumultuous financial periods, fewer mergers took place.

Figure 2 shows airline mergers, acquisitions and bankruptcies that took place in the first half of the 1980s decade in the US. Throughout this time a lot of "local service carriers" of the regulated era, such as Ozark, Republic, Southern, and PSA, were merged into larger airlines. The second trend of consolidation took place in the second half of 1980s decade driven by the "leveraged buyout" phenomena. From 2000 to 2007, there were three important proposals of merger and acquisition, of which two were approved without major congressional opposition, American's acquisition of TWA (2001) and America West's acquisition of US Airways (2005) (Fischer et al, 2008).

[1] http://www.uni-marburg.de/fb02/strategy/dateien/scenariosairline.pdf.

[2] Edward Russell, Mergers signal new dawn for US airline industry, Airline Business Airline Business Magazine, 15 Mar 2013, available at http://www.flightglobal.com/news/articles/analysis-mergers-signal-new-dawn-for-us-airline-industry-383473/.

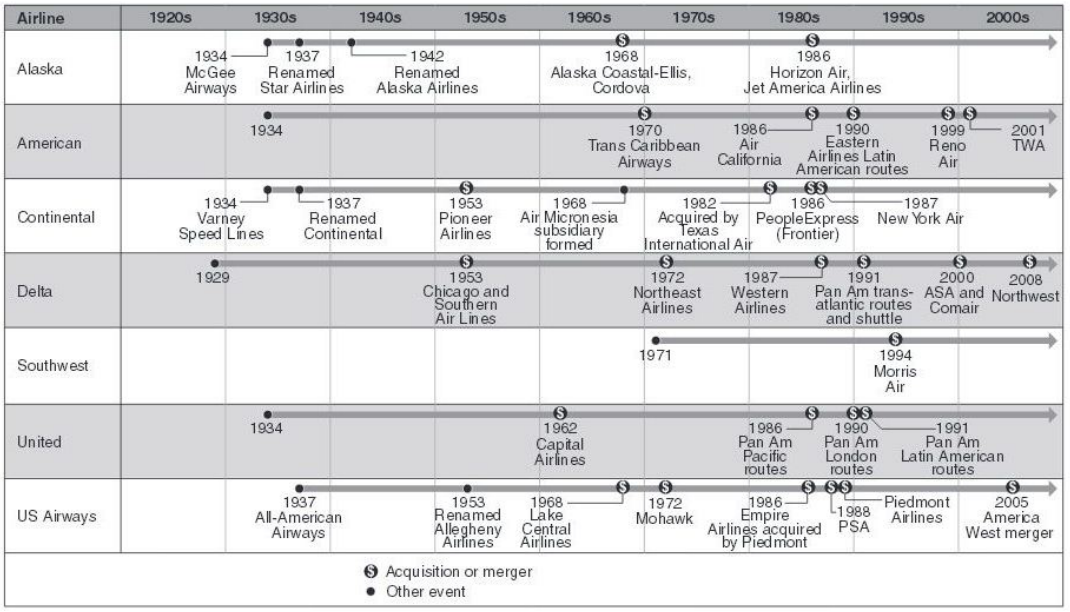



**Figure 2: Highlights of Domestic Airline Mergers**

*Source: Cathay Financial and Airline Company documents (2012)*

Recently, the US airline industry has been facing long-standing challenges such as limits to organic growth, fuel price instability and lower demand for air travel. Both low cost carriers and legacy airlines have reacted to the developments with reorganizations, new pricing strategies, bankruptcies, and spin-offs. There have been six major mergers in the U.S airline industry in recent years: US Airways and America West Airlines (2005), Delta Airlines and Northwest Airlines (2008), Republic Airlines and Midwest Airlines (2009), Republic Airlines and Frontier Airlines (2009), and United Airlines and Continental Airlines (2010). In 2011, Southwest Airlines and AirTran Airways merged in the first major transaction involving low cost carriers. In August 2013, the US Department of Justice (DOJ) and the District of Columbia filed a lawsuit challenging the merger of US Airways and American Airlines because the combination would lead to less service and higher prices for consumers. According to the DOJ, the merger which would create the largest airline in the world would "substantially lessen competition" for commercial air travel.[3]

## European Market consolidation

Consolidation is in fact a trend in Europe and the merger between British Airways and Iberia in Europe could be an example. Actually, many European airlines have developed through acquisitions and mergers in the most recent decade. Other outstanding cases apart from British Airways are Air France-KLM and Lufthansa (Wulf and Maul, 2010). Nevertheless, this consolidation trend does not only happen through to full mergers. Many airlines often create strategic equity stakes which could be enlarged later, because

[3] http://edition.cnn.com/2013/08/13/us/airline-merger-antitrust-lawsuit/

the regulatory constraints in many countries usually prevent foreign majority ownership. For instance, in 1999 Singapore Airlines purchased 49% of Virgin Atlantic in order to get an indirect access to the traffic between London Heathrow and the US (Wulf and Maul, 2010). Because of better marketing advantages and the larger efficiency, which consolidation holds for airlines, further mergers is expected to occur in the coming decades in the global airline industry.

Since 2004, when the extensive improvement of EU merger guidelines was brought into effect, the EC investigated eleven cases of airline merger European airline industry. If the effect of a merger is limited to only one EU member state, the competition authorities in that country are in charge of merger control, for example the competition authority in Germany made decision on two significant mergers between Air Berlin/TUIfly and Air Berlin/LTU. Table 1 summarizes of the EC's decisions during 2004-2013 managing mergers in European airline industry.

**Table 1: Overview of EC's airline merger decisions during 2004 -2013**

| Merger approved | Merger subject to conditions | Merger prohibited |
|---|---|---|
| KLM-Martinair (2008) | Air France-KLM (2004) | Ryanair-Aer Lingus (2007) |
| Lufthansa-bmi (2009) | Lufthansa-Swiss (2005) | |
| British Airways-Iberia (2010) | Lufthansa-Eurowings (2005) | |
| Olympic-Aegean (2013) | Lufthansa-SN Brussel (2008) | |
| | Iberia-Vueling-Clickair (2009) | |
| | Lufthansa-Austrian Airlines (2009) | |

*Source: Fichert (2013)*

**Airline Mergers in Australia**

In 1992, the Australian Government's international airline, Qantas Airways Ltd., merged with the Government's domestic carrier, Australian Airlines, completing a $290 million merger.

In September 1996, Air New Zealand signed a conditional agreement to buy 50 percent of Ansett Holdings which owned 100 percent of domestic Ansett Australia and 49 percent of Ansett International. The purchase was completed in October 1996. In February 2000, Air New Zealand purchased the remaining 50 percent of Ansett Holdings Limited from News Corporation Limited, with a further deferred consideration equivalent to 10.5 percent of issued capital to be settled between two and four years.[4]

In 2013, the proposal by Virgin Australia to purchase 60 percent of Tiger Airways Australia was approved by the ACCC. ACCC admitted that allowing an airline to buy a major part of a rival is unusual to maintain market competition but it said that if the deal does not go ahead struggling Tiger is likely to leave Australia altogether.[5]

[4] See http://www.airnewzealand.co.nz/history
[5] See http://www.abc.net.au/news/2013-04-23/accc-clears-virgin-tiger-merger/4647198

## 2. ECONOMIC EFFECTS OF AIRLINE ALLIANCES

### *2.1. Economic effects of alliances for the airlines*

**Effects of Alliances on Economies of Scale**

Economies of scale are the decrease in unit costs with respect to the increase in network size and the provision of services. They can also derive from learning, specialization and the distribution of fixed costs over a larger output (Iatrou & Oretti, 2007). In general, almost all airline alliances find ways to achieve a large amount of output to decrease the cost per unit of each seat departure. Sometimes, airlines make use of economies of scale by cutting costs through joint marketing or purchasing. There can be potential economies of scale with aircraft size, as the unit costs in fuel and crew increase to a lesser degree than the available seats/km if laboring under the ceteris paribus assumption when considering aircraft technology and pilots' seniority. Stage length also provides economies of scale as fixed costs in airport-based costs are the same for a longer covered distance. Fuel costs also reduce with longer stage lengths as there is lower fuel consumption at cruise altitude and the higher consumption in takeoff and descent are distributed over a longer period. Alliances with foreign airlines bring more international flights, enhancing economies of scale from a larger average stage length and, tentatively, the operation of a larger number of flights.

**Effects of Alliances on Economies of Scope**

Airline alliances could achieve economies of scope when an increase in the production of air service results in a decrease in the production costs of another. According to Kilpi and Vepsäläinen (2004), "Code sharing allows airline alliances to operate like a hub-and-spoke network with a large presence at both sides of the market. The yields economies of scope from lower entry costs into new markets and economies of scale from increased route density producing lower incremental costs of carrying additional passengers". Moreover, the airline alliances have economies of scope when the cost of providing two products together by two airlines is cheaper than producing them independently. Those economies often involve the size of the alliance. For instance, advertising costs are not targeted to an individual airline, but to the whole network of the alliance, which could be defined as an economy of scope. A large airline alliance network also creates chances for economies of scope by means of frequent flyer programs that build customer loyalty and Computer Reservation Systems.

**Marketing advantages**

Joining airline alliances offers extensive marketing advantages to the members. Most alliances integrate computer reservation programs and frequent flyer programs, and launch common advertising campaigns. From the travelers' view, the airlines are offering a better product of a seamless journey to all the destinations of the network (Schäfer, 2003). By becoming a member of the alliances, airlines could earn more loyalty from their customers. Higher switching costs give airline alliances chances to gain a premium on their flights and become more effective in their response than competitors. The sharing of total marketing costs for a large number of airlines in the alliance lowers the marketing average costs (Hanlon, 1999).

Airline alliance has advanced and distinct characteristics, that are exploited by joint marketing activities to manage the marketing co-operation of the whole alliance. Joint

marketing activities of an alliance control its member's joint Frequent Flyer Program registration and recognition, mutual recognition of alliance member's priority status, sharing of airport lounges, wide multilateral code-sharing, coordinated network schedule and fare setting. Nevertheless, the goal of the alliance marketing is to present a seamless travel experience to the customers across the alliance carriers (Oum et al, 2000).

Alliance members could build value to their partners in the alliance by introducing their networks of flight, destination, airport lounge, loyalty programs, joint airline operation, joint marketing strategy, and integrated information technology system to enhance airline services quality to their customers. Conversely, an airline can create value to the alliance by introducing its own flight network, destination, transit, knowledge about their market, airport lounge, loyalty program, and experience in dealing with customer complaints and giving consumers' experience. Thus, the benefit offered by an airline alliance to its members' passengers are mutual.

**Market power and Competition**

Alliances can be an effective means for airlines to gain market power and become more competitive in the market. Youssef and Hansen (1994) indicate that alliances may create virtual monopolies in markets between the hubs of alliance partners. Alliance helps its members to reduce the number of competitors in the long-haul market and give airlines the power to control yield and increase prices. This may be very effective for parallel alliances, such as the alliances between British Airways and American Airlines because the network size is not enlarged considerably and the competition on the route between London and Miami, Chicago and Dallas may be reduced. According to Martin Holtz et al., "the addition of two complementary non overlapping networks will not create market power."

The global airline alliances, Star Alliance, SkyTeam and Oneworld could shift the nature of competition, for instance, competition does not often happen between American Airlines and United Airlines but does happen between Star and Oneworld. The impact of alliances on competition in the airline industry also depends on the nature of the network resulting from the alliances. Particularly, an alliance could considerably reduce competition on overlapping non-stop and connecting routes where alliance members used to compete with each other.

### *2.2. Economic effects of alliances for the consumers*

Alliances create more chances for airlines in generating economic benefits, some of which might be dependent on the closer integration attainable only with antitrust immunity. Those benefits could be considered from the demand-side, regarding the formation of new or developed air service through extended network or seamless service, or from the supply-side, basically the ability to supply similar services at lower cost taking advantages of traffic densities, improved utilization of capacity as well as reduce transaction costs (IATA Economics, 2011). A number of those economic benefits will be explained in more detail below.

**Lower fares for passengers**

A major benefit from airline alliances is gained by customers who fly beyond international hubs to and from small cities, on two alliance airlines during the journey. There are widespread recognition of the benefits to the interline component of an international

trip (Chanpayom, 2002).

If the carriers providing service for those customers are not aligned, the airfare setting process involves each co-operating airline independently setting airfares on the part of the route that they operate with their own aircraft. Airlines set airfares based on market conditions through their revenue management process. This complicated process was expressed in research to be represented as airlines both maximizing their mark-ups based on demand in their segments, while ignoring the negative effect on the others' segments. In research, this price effect is mentioned as 'horizontal double marginalization'. At the same time, it increases the airfare for passengers and reduces airlines' profits.

**Passengers can combine fares in a journey more simply**

Alliances' non-price benefits are important and undoubted. New trends in product differentiation place special importance on these elements of competition. The applications of technology in airfare distribution, including the internet, generally lead to transparent prices and give both consumers and travel agents low airfare search tools. This results to the commoditization of air transport that passengers may consider prices as a first priority in selecting services of an airline. Yet, the combination of airfare transparency and airlines' ability to set immediate price changes lead to very homogenized pricing. Consequently airlines begin to focus on their product differentiation, to compete on other elements that bring much value to their customers such as increasing frequency, frequent flyer programs, better flight timing in order to lower total connection time, airport lounges, and unbundling extra services.

**Airlines can offer passengers a much wider range of schedules**

Cooperation between members in the alliances improve flight schedules with more route frequencies, separating concurrent departures to offer customers better options, and coordinating departure and arrival to cut down on connecting times. A characteristic of competing airlines is to cluster services around times of peak demand. This characteristic of the marketplace was studied by Hotelling (1929) who observed that competing firms try to make their products similar in order to expand their market share. Competing airlines usually operate 'wingtip-to-wingtip' flights to fulfill their own traffic capacity, although it is not efficient for the whole market. Immunized alliances could co-organize flight times and schedules to achieve the right capacity at peak seasons, and increase daily departures more regularly, rather than flying concurrent competing departures. Departure and arrival times could be controlled by the allied airlines to improve connecting itineraries' elapsed time. Additionally, rising demand caused by the enlarged network might result in increased frequency on hub-to-hub routes and spoke-to-hub routes which provides the customers with more options.

## 3. ECONOMIC EFFECTS OF AIRLINE MERGERS

### *3.1. Economic effects of mergers for the airlines*

**Market power**

Market power in the airline industry is defined as the ability of an airline to charge airfares profitably above the competitive level for a certain period of time. An airline merger often leads to the loss of a direct competitor in the airline market and is suspicious of extending the market power of merging parties

resulting in further decrease in output and increases in price, which impedes passengers (Hüschelrath and Müller, 2012). The main reasons of the airfare sizes increase after merging are explained by oligopoly theory. For example, in the case of Cournot model with homogeneous products, the percentage of post-merger airfare increase is a function of market concentration, shown by market shares or market demand elasticity (Werden and Froeb, 2008). Regarding differentiated products, Bertrand models often provide a better explanation to the nature of competitive interaction. In a simple differentiated Bertrand model, the rise in price post-merger depends on - the pre-merger price-cost margin - a measure of the degree of market power pre-merger - and the diversion ratio - a measure of how close two products are in the product space and therefore how intense competition is between these two products - (Hüschelrath and Müller, 2012).

**Efficiencies**

Gaining market power could be an important rationale for mergers; however, airline usually justifies its merger objective with the achievement of merger efficiencies. The achievement of efficiency is different regarding the time window that they are planned to materialize. Under the total welfare standard, all the mergers that result to a post-merger airfare increase would decrease total welfare by the size of deadweight loss. Nevertheless, once the achievement of merger-specific efficiencies allows the merged entity to reduce cost, the consequential increase of producers' surplus need to be traded off against the deadweight loss. If the efficiency is big enough, total welfare increases post-merger.

Amir et al. (2009) demonstrated in a Cournot model that "airlines have an incentive to overestimate the achieved efficiencies in the merger regarding both the antitrust authority and rivals."Thus, they concluded that antitrust authorities have to be strict when accepting cost-reducing arguments because there is likelihood that the estimated efficiencies are much smaller or even do not exist which could cause higher airfares in the post-merger cases.

**Entry**

Post-merger entry is a significant market power mitigating factor because it raises the entry barriers for the new entrants. Though market concentration is rather high, incumbents might not possible to exercise market power providing potential entrants can start producing substitutes easily. Froeb and Werden (1998) studied the impacts of entry-induce to antitrust policies. It was found that airlines only have a motivation to merge if they look forward to important efficiencies created by the merger or they acknowledge extensive entry barrier that allows them to charge high competitive airfares post-merger. They came to a conclusion that antitrust authority must be skeptical to prevent mergers' anti-competitive effect. Since they reduce the possibility of post-merger entry, the cost-saving's beneficial effect passed on to consumers is not strong enough to over-compensate the negative effect on consumer welfare. When studied the relationship between entry and merger efficiencies in a Cournot model, Spector found that profitable Cournot mergers that fail to generate synergies will reduce consumer welfare irrespective of entry conditions(Spector, 2003*)*. He came to a conclusion that such mergers must be blocked without consideration of the role of post-merger entry.

### *3.2. Economic effects of mergers for the consumers*

The effects of competition and mergers on consumer welfare have been investigated by a number of scholars. Brueckner and Spiller (1991) differentiate between competition in three different hub-and-spoke route structures and investigate the implications for competition and mergers on traffic and fares. The authors found that competition is not necessarily beneficial as soon as both the effects on hub-to-hub and hub-to-spoke routes are taken into account (Bittlingmayer, 1990). As an increase in competition is likely to reduce traffic for the incumbent airlines on that route, cost complementarities and economies of traffic density are reduced possibly causing increases in marginal costs and therefore prices on complementary routes of the network. Whether the benefits of additional competition overtop these cost increases, depends on the demand and cost characteristics of the respective routes. Therefore, mergers cannot be considered as generally consumer welfare reducing, as the costs of a reduction in competition might be overtopped by additional efficiencies created by the larger network operated by the merged entity.

Although any investigation of the consumer welfare effects of a merger has to consider market price as a key variable, it is equally undisputed that additional service-related variables might also influence consumer welfare. Bailey and Liu (1995) studied the effects of airline consolidation on price andservice measured by scope of operations or network density. They assume that consumers prefer larger airline networks as they basically allow them to reach a higher number of destinations with a higher level of convenience in a shorter amount of time. In a two-stage model with open entry, they show that the service-enhancing effects of further consolidation may indeed outweigh the price-increasing effects of a reduction in the number of effective competitors. Richard (2003) concentrates on flight frequency as a service-related driver of consumer welfare in another research. Based on a model of firms' decisions which endogenizes flight frequency, the results of various simulation exercises suggest that although a merger typically causes decreases in passenger volume and consumer surplus, some markets show net welfare gains as soon as merger induced changes in flight frequency are included into the welfare assessment.

Hüschelrath and Müller (2013) study the consumer welfare effects of mergers in airline networks basing on the background of five large mergers in the US (American Airlines - Trans World Airlines (2001), America West - US Airways (2005), Delta Air Lines - Northwest Airlines (2009), United Airlines - Continental Airlines (2010) and Southwest Airlines and AirTran Airways (2011)). Their estimation on the route-carrier level shows that, across all route types, two years after its completion, the merger led to 6.4 percent higher prices than observed on the comparator routes over the same time frame. Their analysis also revealed that average prices of the merging parties and their competitors do not differ significantly from each other; this is found to be true for both price increases and price decreases post-merger. Regarding to the overall consumer welfare effects of the merger, their estimation results on the surface suggest that the merger might have been anticompetitive as it led to substantial price increases in two route categories and to price decreases in only one category. However, taking the number of passengers traveling in the

respective categories into account revealed that only about 10 percent of the overall number of passengers in the two year period following the merger travelled in markets which experienced a price increase post-merger. For the majority of passengers, the merger either led to substantial price reductions or had no significant effect on average prices (Hüschelrath and Müller, 2013).

## 4. MERGERS AND ALLIANCES: COMPLEMENTARY AND RIVAL FORMS OF COOPERATION

### *4.1. Differences between mergers and alliances*

If airlines try to get economies of scale from integration, a merger will provide more rationalization than an alliance. The planned merger aims to take the rationalization process further, finish inefficient facility or reorganize the product line more consistently.

The main difference between mergers and alliances is that collaboration in an alliance will be limited in effectiveness and scope by two factors: (a) All decisions have to be made by consensus among the partners, and (b) alliances are transient in nature and must remain reversible (Chang and Hsu, 2005). Since they are placed under the concurrent authority of many partners, alliances may lead to nearly everlasting rounds of negotiations (Garette and Dussauge, 2000). Differences about decision to be made within the framework of newly merged firms could be decided by the acquiring firm's managerial board. Nevertheless, one of the parties in an alliance could not force other members to agree any specific solution without an agreement.

Airline alliances have another characteristic that is temporary in nature. It is possible to terminate an alliance without putting its partners at risk. One important justification for choosing alliances rather than other permanent forms of integration is that they could be undone very without difficulty.

One of the main difficulties for mergers is the post-merger period. Alliances try to avoid the organizational and cultural shock that often appear in the post-merger process. A large number of integration problems that unavoidably arise after a merger means that

**Table 2: Advantages and disadvantages of mergers and alliances**

| Mergers | | Alliances | |
|---|---|---|---|
| **Advantages** | **Disadvantages** | **Advantages** | **Disadvantages** |
| • Full integration of network<br>• Control of partner<br>• Concentration on profitable routes<br>• Cost savings<br>• Rapid decision making | • Difficulties in post-merger integration<br>• Antitrust restrictions<br>• Need capital for purchase<br>• High risk | • Undone relatively easily<br>• Easier to find a partner<br>• Low risk | • Consensual decision-making process takes longer<br>• Must remain reversible<br>• Partners' goals may be different<br>• Cannot force partners to accept any particular solution<br>• Partners might be purchased by a rival |

*Source: Hanlon, 1999*

the merged airlines should be well-prepared for distraction from performance and the triggering of unpredicted lay-offs because separate organizations join into one (Marks and Mirvis, 1998).

Another main inconvenience of merger is that it needs capital to invest and sometimes is a risky investment. When the partner airlines get into financial difficulties, it apparently reduces the market value of the stake and if the partners declare bankruptcy and ceases operation, the investment has to be given up for lost altogether. The differences between alliances and mergers could be found in table 2.

### 4.2. Synergies Generated Respectively by Mergers and Alliances

In this part the mergers and alliances will be compared by looking into their ability to generate synergies for airlines. The ability to realize synergies will be analyzed in detail of three areas of the airline industry:

- Market entry and network expansion
- Network integration
- Identity and integration

**Market Entry & Network Expansion**

In the airline industry an important advantage for the airlines over competitors is to be presented on many markets. Although having numerous destinations is highly demanded by customers, the airlines face difficulty to meet this requirement because of the national laws and the bilateral systems. The regulation and limitation for airline mergers on international level are stricter than for alliances.

Beside legal barriers, there are different uncertainties that airlines should take into account before joining a new market. Although an airline could succeed in its home market, it should not apply its current strategies to other cultures or geographical regions. In order to avoid the risk, airlines could cooperate with a successful experienced local firm. If the new market is very geographically far away and culturally different from the home market, an alliance would be the preferable since the inexperience of the buyers in case of a merger may result to high integration costs. In some cases, it is much better to give the management of the cooperation to the local partners within an alliance (Reuer, 2004).

A second situation could be that airlines already have experience in the new market. In these cases, the integration cost for mergers could become much lower. However, the existing experience proves that the airline was operating in such market, so the term market entry is not suitable in this situation. According to Doukas and Travos (1988), a merger only creates positive economies of scale if the buyer was not active before in its partner's market. Hence, it is uncertain that a merger with competitors could actually improve the buyer's competitive position in a different market as it expected.

Meanwhile, joining into an alliance, members could take full advantages from a global network so that they do not have to invest themselves (Iatrou & Alamdari, 2005). A positive effect for passengers occurs when alliance members combine their traffic and hence could continue to operate in unattractive routes which have low demand from passengers. Meanwhile in a merger case, airlines expect to cancel these routes from the flight plans. Another difference in this situation is that a merger would increase the airlines' network as well as the company size but in an alliance, although the network is extended the size of the company still stays the same. So the airline have to decide

whether it wants to increase company size or not. In the case that the airline has achieved the minimum efficient scale, a merger could cause profits to fall and prevent the company from the profit maximizing output (Besanko et al, 2007).

**Network integration – Code Sharing, Optimization of Flight Plans & Antitrust Immunity**

To enter a new market an airline not only has to attract more customers by persuading them of the good service quality but also offer them more flight route options. To offer reasonable connections it is essential to join with the partner's flight plans and network integration. In merger cases, all the advantages might be realized and will allow the airlines to avoid double routes and jointly set airfares for their code share routes (Iatrou & Oretti, 2007). Partners ought to merge an important amount of traffic routes in order to realize a maximum of cost reducing synergies. On the contrary, an alliance should be founded from members who have little overlap in their networks to improve revenue enhancing synergies. For the network integration process, alliance members need to use the code-sharing system. But that is not enough. Alliance members could integrate their networks to a certain extend with code-sharing, but they could not set a common airfare for the whole route. That means all the alliance partners have to set fare for a part of the route where they are operating separately and then add up to the total route fare. Consequently, double marginalization will occur and raise the price over competitors, causing the decline of passenger amount (Iatrou & Oretti, 2007). Alliances must seek for antitrust immunity with the relevant national authority in order to avoid this risk.

Further coordination of the common network could be realized by assigning a feeder role to small partners in the network. Such strategies often work best in the merger where the buyer is much bigger than the target airline. In this case, the buyer could allocate the firm to a feeder role. With the partner in the integration who has same size, almost all of the decisions must be made together. So it happens to be so complicated to persuade a partner to take the feeder role. The same situation also happens to alliance partners though they have different sizes because of their economic and legal independence. It will take a high level of integration between the alliance members for smaller partners to agree with an absolute feeder role (Vasigh et al., 2008).

**Identity and Integration**

Nowadays in the airline industry, an airline's identity is still very important for the airline itself. Particularly in alliances, airlines who are offering services with higher quality are always afraid that partners with lower service quality might damage their brand image. However, in theory this is not a big problem for merger partners since smaller targets often take on the buyer's brand or sometimes a new brand will be established in the case of mergers of equal firms. Nevertheless, many examples in the airline industry may prove a different fact and also mean that in a merger case, notwithstanding the size of merger partners, airline's brand is very important and must be preserved carefully (Gaughan, 2005). Keeping their own brands or identities could make the integration process of both alliance and merger forms more difficult.

In a merger case, problems may sometimes come from management. It is possible that the merger may not be the best choice for the company; however, the managers still push it forward. The hubris theory may help

to explain this irrational behavior, caused by overvaluing the target. An alliance provides the opportunity to dispose of most of the problems above because the integration process is completed with a softer approach than in a merger. With these smaller steps, partners avoid operative and cultural shocks and the continued independence of the alliance members reduces massive changes. A much bigger difficulty for the alliance partners is the integration of their information technology systems which may be very time intensive, creating high expenditures (Gaughan, 2005).

## 4. CONCLUSION

This paper provides an explanatory framework for identifying the market results of international consolidation of the airline industry. The intention has been to provide a comprehensive view of airline alliances and mergers on development historyand economic effects. Furthermore, the author has analyzed the differences between mergers and alliances as well as the synergies generated respectively by mergers and alliances. Implications have been provided for airlines to take full advantages and limit the dark sides when they decide to participate in international consolidation. In conclusion this paperhas providedsuggested framework for future studies of international consolidation in the airline industry, as a strategy for international network development.❑

**References:**


1. Amir, R., E. Diamantoudi, and L. Xue (2009), Merger Performance under Uncertain Efficiency Gains, International Journal of Industrial Organization, 27.
2. Airline Business, Magazine, September 2013, page 28..
3. Bailey, E. and D. Liu (1995), Airline Consolidation and Consumer Welfare, Eastern Economic Journal, 21, 463-476.
4. Besanko, D., Dranove, D., Shanley, M. & Schaefer, S. (2007). Economics of Strategy (4th ed.). NewJersey: John Wiley & Sons, Inc.
5. Bittlingmayer, G. (1990), Efficiency and Entry in a Simple Airline Network, International Journal of Industrial Organization, 8, 245-257.
6. Crowell & Moring LLP (2009) Brazil moves to raise foreign investment cap, ATW Daily News (July 17, 2009), available at http://atwonline.com/news/story.html?storyID=17210
7. Cabral, L. (2003), Horizontal Mergers with Free-Entry: Why Cost Efficiencies May be a Weak Defense and Asset Sales a Poor Remedy, International Journal of Industrial Organization, 21, 607-623.
8. Chang, Y.C. & HSU, C.J. (2005), Ally or Merge: Airline Strategies after the Relaxation of ownership rules. Proceedings of the Eastern Asia Society for Transportation Studies (5), 545-556
9. Chanpayom, B. (2002) The Airline Business: Global Airline Alliances, p.52
10. Doukas, J. & Travos, N. (1988). The Effect of Corporate Multinationalism on Shareholder´s Wealth, Journal of Finance (43), 1161-1175.
11. European Commission and U.S DOT (2010) 'Transatlantic Airline Alliances: Competitive Issues and Regulatory Approaches'.
12. Froeb, L. and G. Werden (1998), A Robust Test for Consumer Welfare Enhancing Mergers Among Sellers of a Homogeneous Product, Economics Letters, 58
13. Fischer John W., Bart Elias, Robert S. Kirk, U.S. Airline Industry: Issues and Role of Congress, CRSReport for Congress, April 30, 2008

14. Gaughan, P.A. (2005). Mergers: What Can Go Wrong and How to Prevent It. New Jersey: John Wiley & Sons, Inc.
15. Gaughan, P.A. (2007). Mergers, Acquisitions and Corporate Restructuring (4th ed.). New Jersey: John Wiley & Sons, Inc.
16. Garette, V. and Dussauge, P. (2000). Alliances versus acquisitions: choosing the right option. European Management Journal, 18(1), 63-69.
17. Hanlon, P. (1999). Global Airlines. 2nd ed. Butterworth-Heinemann
18. Hotelling, H (1929) 'Stability in Competition', The Economic Journal Vol 39 No. 153.
19. IATA Economics (2011) 'IATA Economics Briefing: THE ECONOMIC BENEFITS GENERATED BY ALLIANCES AND JOINT VENTURES'.
20. Iatrou, K. & Alamdari, F. (2005). The Empirical Analysis of the Impact of Alliances on Airline Operations., Journal of Air Transport Management, 11(3), 127-134
21. Iatrou, K. & Oretti, M. (2007). Airline Choices for the Future: From Alliances to Mergers. Aldershot: Ashgate.
22. Kai Hüschelrath, K. and Müller, K., (2012) Market Power, Efficiencies, and Entry Evidence from an Airline Merger, Discussion Paper No. 12-070
23. Martin Holtz, Wolfgang Grimme, and Hans – Martin Niemeier, Airline Alliances and Mergers in Europe: An Analysis with special focus on the merger of Air France and KLM
24. Marks, M.L and Mirvis, P. H. (1998), Joining Forces- making one plus one equal three in mergers, acquisitions, and alliances. Jossey-Bass Publishers.
25. Oum, T., Park, J.H. & Zhang, A. (2000). Globalization and Strategic Alliances: the Case of the Airline Industry. Oxford: Pergamon.
26. Richard, O. (2003), Flight Frequency and Mergers in Airline Markets, International Journal of Industrial Organization, 21, 907-922.
27. Reuer, J. (2004). Strategic Alliances: Theory and Evidence. Oxford: Oxford University Press.
28. Spector, D. (2003), Horizontal Mergers, Entry, and Efficiency Defences, International Journal of Industrial Organization, 21, 1591-1600.
29. Schäfer. I. S. (2003), Strategische Allianzen und Wettbewerb im Luftverkehr. Berlin: Mensch & Buch Verlag
30. Vasigh, B., Fleming, K. & Tacker, T. (2008). Introduction to Air Transport Economics: From Theory to Application. Aldershot: Ashgate.
31. Wulf, T. and Maul, B. (2010) Future Scenarios for the European Airline Industry, Center for Scenario Planning HHL-Leipzig Graduate School of Management, Germany
32. Werden, G. and L. Froeb (2008), Unilateral Competitive Effects of Horizontal Mergers, in: Buccirossi, P., Handbook of Antitrust Economics, Cambridge, 43-103.
33. Whinston, M. (2007), Antitrust Policy Toward Horizontal Mergers, in: Armstrong, M. and R. Porter (eds.), Handbook of Industrial Organization, Volume 3, Amsterdam, 2369-2440.
34. Youssef, W., Hansen, M. (1994), .Consequences of Strategic Alliances between international Airlines: The Case of Swissair and SAS. Transportation Research Part A, 28, p. 415-431.

# SOME NEW ACADEMIC PAPERS ON ECONOMIC DEVELOPMENT ISSUES IN VIETNAM

**Some new academic papers on economic development issues in Vietnam**

**Structural Transformation and Intertemporal Evolution of Real Wages, Machine Use, and Farm Size–Productivity Relationships in Vietnam.**

Yanyan Liu, William Violette and Christopher B. Barrett. IFPRI Discussion Paper 01525, 2016.

*Abstract: This paper explores the evolution of real agricultural wages, machinery use, and the relationship between farm size and productivity in Vietnam during its dramatic structural transformation over the course of the 1990s and 2000s. Using six rounds of nationally representative household survey data, we find strong evidence that the inverse relationship between rice productivity and planting area attenuated significantly over this period and that the attenuation was most pronounced in areas with higher real wages. This pattern is also associated with sharp increases in machinery use, indicating a scale-biased substitution effect between machinery and labor. The results suggest that rural-factor market failures are receding in importance, making land concentration less of a cause of concern for aggregate food production.*

*Free full text http://ebrary.ifpri.org/cdm/ref/collection/p15738coll2/id/130285.*

**Impact of projects initiating group marketing of smallholder farmers—A case study of pig producer marketing groups in Vietnam.**

Kerstin Schöll, André Markemann, Bekele Megersa, Regina Birner and Anne Valle Zárate. Journal of Co-operative Organization and Management, 2016.

*Abstract: In recent years, several projects in Vietnam have focused on establishing farmer groups to link small-scale pig producers to markets in order to improve their livelihoods. To compare the success between different approaches and by contrasting them to individual farmers without joint marketing, data were collected from 286 members of 18 pig marketing groups initiated by seven projects and from 479 non-members in three provinces and the capital of Vietnam. Groups were categorized in Common Interest Groups, Cooperative Groups and Cooperatives. All groups were comparatively described according to member set-up, management, financing and marketing. Propensity score matching was used to evaluate the economic success, as one of the key factors for a long-term operation of farmer groups. Results showed that the intervention projects supporting farmer groups with training and in-kind subsidies seem to have the highest impact on the increase of income of members in comparison with non-members.*

**Property rights, collateral and interest rates: Evidence from Vietnam.**

Christa Maria Hainz and Alexander Danzer, 2015.

*Abstract: This paper investigates the causal effect of the quality of property rights on the*

*price of collateralized consumer loans. Identification stems from exogenous variation in the im-provement of property rights in Vietnam – following recent accelerations of the land titling program as well as political change in provincial leaderships. We exploit a unique data set which comprises the complete loan data of one of the largest private Vietnam-ese banks, regional level information on the quality of property rights and legal institu-tions as well as an exact measure of bank competition derived from the complete rele-vant geo-referenced bank data of Vietnam. Our findings clearly indicate that more se-cure property rights reduce the cost of credit, and these results are very robust to the inclusion of competition in our regression model. Owing to an institutional peculiarity of the Vietnamese banking practice, we support our findings with a falsification exer-cise on 'employer-insured' loans.*

*Free full text http://econstor.eu/bitstream/10419/112880/1/VfS_2015_pid_484.pdf.*

**The Progressivity and Regressivity of Aid to the Social Sectors.**

Bob Baulch and Tam Vi An Le. Journal of International Development, 2016, volume 27, number 8.

*Abstract: This paper analyses the distribution of aid to the social sectors between 2009 and 2011 using aid concentration curves. Its key findings are four-fold. First, despite the stated objectives of donors, total aid disbursements are broadly neutral, favouring neither the most deprived nor relatively well-off countries. Second, the pattern of social sector aid disbursements follows total aid. Third, the aid allocation patterns of bilateral and multilateral donors differ, with multilaterals donors generally being more focused on the poorest countries. Finally, the distribution of aid for health and population is more progressive than that for education or other social sectors.*

**The Effects of Innovation on Firm Performance of Supporting Industries in Hanoi – Vietnam.**

Nham Tuan, Nguyen Nhan, Pham Giang and Nguyen Ngoc. Journal of Industrial Engineering and Management, 2016, volume 9, number 2.

*Abstract: Purpose: Innovation, including product, process, marketing, and organizational innovation within a firm, is considered as one of essential component for surviving and growing. These innovation activities create value and competitive advantages for successful organizations; therefore, understanding the organization's overall innovation is the first and foremost to understand the role of innovation on firm performance. The objective of this research is to explore two parts: the impacts of innovation on the different aspect of innovation performance, then their effects to firm performance (production, market, and financial performance). --- Design/methodology/approach: This study uses primary data from questionnaire survey. The questionnaire involves 4 parts including general information, innovation activities; innovative performance, and firm performance. This research focuses on firms in supporting industries of mechanics, electronics, motorbike and automobile. These firms are in a list of companies (known as The Excellent Vietnamese Companies in Northern and Central Vietnam) established*

*by JETRO and VCCI. There are 150 firms in this list. The questionnaire survey was administered to directors, CEO of those firms during April and May, 2014. Out of the 150 questionnaires sent out, 118 were valid, accounting for 78.7% of the true response rate. Analysis methodologies of reliability, factor analysis and regression are utilized in this paper. --- Findings: The result demonstrated there are positive effects of process, marketing, and organizational innovations on firm performance in supporting firms. More specifically, the higher the level of innovation activities is, the greater the innovative performance is, which means the larger level of Process, organization and marketing innovation activities are, the higher level of innovative performance are likely to be. Secondly, the higher level of Process, organization and marketing innovative performance, the better level of firm performances is likely to be. To sum up, in order to improve the innovative and firm performance, those firms in supporting industry should highly concentrate on process, marketing, and organizational innovation activities, rather than product innovation activities. --- Originality/value: Initially, this study applies successfully the model which supposing innovation is a process, then clarifying innovation definition through the impact of innovation activities on innovative performances. Secondly, this research confirmed the positive impact of innovative performances on firm performances. It provided one more empirical evidence of the relationship between innovation and firm performance. For practitioners, organizational innovation and process innovation are more important factors affecting innovative performance and firm performance than product and marketing innovation. Therefore, enterprises should focus and mobilize resources to create improvement in organizational structure and manufacturing processes.*

*Free full text http://jiem.org/index.php/jiem/article/viewFile/1564/764.*

**Networks of Enterprises and Innovations: Evidence from SMEs in Vietnam.**

Quang Hung Doan and Hoang Nam Vu, 2016.

*Abstract: By using the latest dataset from the survey of SMEs conducted in Vietnam in 2011, we show that a firm both participating in a wider network of input suppliers, buyers, and associations of enterprises and conducting innovative activities in production has higher labor productivity than others, implying that networks of enterprises and innovation are complementary to each other in affecting performance of SMEs in Vietnam. We also find that supports of the government including providing better infrastructure to the SMEs and helping the SMEs to be formalized when being established are conducive to the development of the SMEs in Vietnam.*

*Free full text https://mpra.ub.uni-muenchen.de/70591/1/MPRA_paper_70591.pdf.*

**The Perceptions and Responses of Vietnamese Firms Towards Deeper Regional Economic Integration: Case Studies from the Food Processing Industry.**

Ha Thanh Nhan Nguyen and Peter Enderwick. Journal of Southeast Asian Economies (JSEAE), 2016, volume 33, number 1.

*Abstract: Increasing regional economic integration amongst ASEAN member countries, and the creation of the ASEAN Economic Community (AEC) will bring both opportunities and challenges for local firms. This research investigates the perception and understanding of five Vietnamese food processing companies towards the AEC as well as their planned responses towards deeper integration. Case study interviews revealed that respondents had a limited understanding of the AEC, which moderated their strategic responses. Opportunities identified include access to new markets, the possibility of exploiting regionwide resources, and access to regional value chains. Increased competitive pressure, particularly from foreign investors, was the key anticipated challenge. Business responses focused on increasing intra-regional exports, cooperating with potential partner organizations, improving products and processes, and revising marketing strategies. Respondents also believed that the Vietnamese government could do more to support their businesses in the face of deepening economic integration.*

**Public Management and Strategic Management in Vietnam State-owned Enterprises (SOEs).**

Mai Thanh Lan. International Business Research, 2016, volume 9, number 4.

*Abstract: State owned enterprises (SOEs) play an important role in Vietnam's economy and therefore always receive care from our Party and State. In the context of economic crisis, to stabilize the business situation and overcome the crisis, the State should have a policy which is correct and conformable to the State economic sector to bring the role of macroeconomic regulation of these enterprises into play. The research analyzes the characteristics of SOEs as well as the actual application of the State management policies to this economic sector, from that to assess the difficulties and shortcomings of Vietnam SOEs against the background of globalization. Based on analyzing the documents collected together with the practical surveys of a number of state-owned corporations, groups, the paper gives an overview of the State economic sector in Vietnam and proposes some effective solutions to improve State management over the national economy.*

**Progress in Intra-industry Trade in the Greater Mekong Sub-region.**

Kenji Nozaki. Foreign Trade Review, 2016, volume 51, number 2, pp. 147-161.

*Abstract: The Greater Mekong Sub-region (GMS) attracts investors' interest today and economic linkage in the GMS is strengthening with the creation of a production network. This paper analyzes the division of labour in the production process by industry. Two industrial sectors are chosen, the clothing industry and automobile industry. Two types of analysis were conducted in this study: one is a detailed analysis of trade figures, with calculation of the Grubel and Lloyd indexes and unit trade value, and the other is the estimation of gravity model. Their results are consistent. In the clothing sector, which is a labour-intensive industry, intra-industry trades include items by both horizontal division of labour and vertical division of labour. In contrast,*

*the automobile sector does not exhibit horizontal division of labour, and signs of vertical division of labour between Thailand and Vietnam are observed. As different types of industry involve the different types of production network, further research will be needed.*

**The Trans-Pacific Partnership: Unveiling Major Implications for Vietnam.**

Vo Tri Thanh and Nguyen Anh Duong. Economy, Culture & History Japan Spotlight Bimonthly, 2016, volume 35, number 2.

*Abstract: The article explores the implications of the Trans-Pacific Partnership trade agreement for Vietnam. Topics discussed include the government's support for international economic integration and opportunities for promoting foreign direct investment and exports made possible by participation in various trade agreements. The new standard for high-quality behind-the-border trade and investment liberalization and the possibility of new investment flows into Vietnam are mentioned.*

**Spatial Spillover Effects from Foreign Direct Investment in Vietnam.**

Tran Toan Thang, Thi Song Hanh Pham and Bradley R. Barnes. The Journal of Development Studies, 2016, pp. 1-15.

*Abstract: This paper investigates the role of inter-firm interaction and geographical proximity in the determination of productivity spillover effects from foreign to domestic firms. We developed an estimation approach using the Spatial Durbin model and applied this to a firm-level dataset from Vietnam from 2000-2005. We found that productivity spillovers diminished when the distance between foreign and domestic firms increases and that interactions among local firms amplify the spillovers. Within short distances, the presence of foreign firms creates positive backward, negative forward and horizontal spillovers. Based on the findings, several implications are extracted regarding promotion policy for foreign direct investment in developing countries.*

**Fiscal Decentralization Review in Vietnam: Making the Whole Greater than the Sum the Parts.**

World Bank, 2015.

*Abstract: This report provides a review of fiscal decentralization policies in Vietnam and their impact on the Government's development objectives. It aims to inform reform of central-local fiscal relations in Vietnam to further promote growth and poverty reduction. The State Budget Law 2002 (SBL 2002) has enabled decentralization of important fiscal responsibilities to local authorities over the past ten years. This report responds to demands for more analysis of fiscal decentralization policies in Vietnam and the extent to which these have delivered on their stability, equity and efficiency objectives. It aims to inform future changes to the system of intergovernmental fiscal relations through revisions to the SBL 2002 and adoption of 2016-2020 Stability Period regulations. This report builds on existing research and aims to provide new analysis and perspectives on the above areas through extensive study of available data,*

*consultations with central and local authorities, and reviews of laws, regulations and policies at central and local levels. It covers the following five pillars of fiscal decentralization: (i) expenditure decentralization and accountability; (ii) expenditure performance of local authorities; (iii) local revenue arrangements; (iv) intergovernmental fiscal transfers; and (v) local borrowing.*

*Free full text http://documents.worldbank.org/curated/en/2016/03/26012370/making-whole-greater-sum-parts-review-fiscal-decentralization-vietnam.*

**Does ISO14001 raise firms' awareness of environmental protection?—Case from Vietnam.**

Bin Ni, Hanae Tamechika, Tsunehiro Otsuki and Keiichiro Honda. Graduate School of Economics and Osaka School of International Public Policy (OSIPP) Osaka University Discussion Paper 16-05 2016.

*Abstract: Environmental protection is an inevitable issue that developing countries all have to deal with during the process of inviting foreign direct investment (FDI). However, high correlation between FDI and pollution doesn't necessarily indicate that foreign firms are to blame. In this paper, we apply firm-level panel data in Vietnam and unique information on waste discharge to show that foreign firms are actually more active to acquire ISO14001, a voluntary environmental standard. And the adoption will in turn improve firms' performance in waste control. It also increases firms' welfare as well as their productivity level. This paper provides strong evidence that firms' efforts towards corporate social responsibility will eventually benefit themselves as well.*

*Free full text http://www2.econ.osaka-u.ac.jp/library/global/dp/1605.pdf.*

**Beneficiary Participation in Non-Governmental Development Organisations: A Case Study in Vietnam.**

Fleur Mercelis, Lore Wellens and Marc Jegers. The Journal of Development Studies, 2016, pp. 1-17.

*Abstract: Beneficiary participation in development projects has been an important topic of debate during the last decades. In the empirical research on the matter beneficiaries themselves are seldom, if ever, asked about their perceptions of participatory mechanisms in place. We present such a (case) study on the Vietnamese local office of a European non-governmental development organisation, also probing into other stakeholders? perceptions (46 interviews in total). Our observations allow us to refine some aspects of the extant theoretical insights on beneficiary participation and representation, as well as to formulate some recommendations for organisations aiming at increasing beneficiary participation in their decision-making.*

**Land Reform and Farm Production in the Northern Uplands of Vietnam.**

Trung Thanh Nguyen, 2016.

*Abstract: Economic theory has suggests that increased tenure security will lead to increased productivity. However, existing literature on the relationship between land tenure and land*

*productivity provides inconclusive evidence. The present paper analyzes the impact of land reform on chemical fertilizer use and land productivity of rural farms in the Northern Uplands of Vietnam using a panel dataset collected before and after land reform. The result shows that land reform has a positive impact on both chemical fertilizer use and land productivity, but the level of influence is different between land privatization and land titling. Relevant policy implications are thus derived for the promotion of farm production in the region.*

*Free full text http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2770387.*

**Poverty Dynamics The Structurally and Stochastically Poor in Vietnam.**

Nguyễn Việt Cường, Đỗ Liên Hương and Phùng Đức Tùng. VNU Journal of Science: Economics and Business, 2015, volume 31, number 5E.

*Abstract: This paper aims to measure poverty dynamics in Vietnam using the most recent Vietnam Household Living Standard Survey (VHLSS) from 2010. Since there are no panel data between the 2010 VHLSS and the previous studies, this study uses the asset approach to estimate the proportion of structurally and stochastically poor. It is found that the proportion of structurally and stochastically poor is 11.1 percent and 9.6 percent, respectively. Nearly half of the poor are the stochastically poor. The proportion of stochastically non-poor, who are non-poor but vulnerable to poverty, is small, at around 3.7 percent.*

*Free full text http://ueb.edu.vn/Uploads/file/tapchi_tbbt@ueb.edu.vn/2016/01/1.%20Cuong%20Viet%20Nguyen.pdf.*

**The Industry Cluster Approach for Tourism Development of Central Vietnam.**

Truong Hong Trinh. International Journal of Business and Management, 2016, volume 11, number 5.

*Abstract: Industry cluster is frequently mentioned in the literature of the regional economic development, but there are a few studies about identifying competitive clusters in the region. For this reason, the paper approaches cluster analysis for identifying competitive clusters in Central Vietnam. From location quotient and shift-share analysis, the result reveals that tourism cluster is a competitive cluster for the regional economic development. T hen, the study develops the tourism cluster in central Vietnam that includes tourism cluster profile, tourism production network, and tourism value chain. Moreover, the study result provides a basic framework for industry cluster analysis that help policy makers and economic developers to understand economic activities, characteristics of competitive cluster and supranational characters in the regional economy, then deliver strategy and policies for tourism cluster development of Central Vietnam.*

*Free full text http://www.ccsenet.org/journal/index.php/ijbm/article/view/58001.*

**Bank reforms and efficiency in Vietnamese banks: evidence based on SFA and DEA.**

Thanh Pham Thien Nguyen, Son Hong Nghiem, Eduardo Roca and Parmendra Sharma. Applied Economics, 2016, pp. 1-14.

*Abstract: This study examines the cost efficiency of Vietnamese banks from 2000 to 2014 in the first stage, and the selection and dynamic effects of two governance reforms, foreign partial acquisition and listing on the stock exchange, on the efficiency in the second stage. Empirical results from the two-stage Stochastic Frontier Analysis (SFA) are highly consistent with those from the two-stage Data Envelopment Analysis (DEA) . Specifically, the first-stage efficiency estimation indicates that the cost efficiency shows a slightly upward trend over the period 2000?2014, with the cost efficiency score being 0.93 and state-owned banks outperforming joint-stock banks (JSBs). The mixed process seemingly unrelated regression estimator which controls the potential endogeneity of public listing and foreign acquisition in the second stage shows that selection effects occur in the Vietnamese banking system: banks selected by the strategic foreign investors for partial acquisition and banks selected for public listing are more cost-efficient than those not selected. The short-term and long-term dynamic effects of foreign partial acquisition are documented: the cost efficiency of the Vietnamese banks post-partial acquisition is lower than prior-partial acquisition, and it experiences a decreasing trend since partial acquisition. However, the short-term and long-term dynamic effects of public listing are not evidenced: the cost efficiency of the banks after public listing is not statistically different from that before public listing, and it also reveals an unclear trend since public listing.*

**Hanoi between Washington and Beijing: Vietnamese Industrial Development Through Export-led Growth and Selective Planning.**

Marco R. Di Tommaso and Antonio Angelino. L'industria, 2015.

*Abstract: The paper aims at highlighting the crucial features of the Vietnamese industrialization pattern as well as at analysing the literature concerning industrial development in Vietnam. Specifically, it focuses on the role played by industrial policies in the transition period followed to the Doi Moi reforms (1986). Moreover, it displays a review of the recent planning strategies undertaken by the Vietnamese government emphasizing the function taken on by the adoption of selectivity as an instrument to upgrade the competitiveness of the Vietnamese production system. The evolution of the Vietnamese planning approach over the last 15 years shows, at the same time, a twofold influence: on a side, the Washington International financial authorities push towards the adoption of a market-friendly and export-led growth model, on the other side the Vietnamese policy makers seem to take as a reference point the Asian developmental model and, in particular, the Chinese upgrading experience whose impressive growth performance have been fueled also by the implementation of selective interventions. In this regard, the paper explores the weaknesses characterizing Vietnamese planning strategies and put some policy implication forward in order to mitigate the structural limits which distinguish the Vietnamese industrial development pattern.*

***Source: Vietnam Development Information Centre - VDIC***