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Noppadol Senken, Jorge Fidel Barahona Caceres, Wanvilai Chulaphan, and Tanchanok Bejrananda

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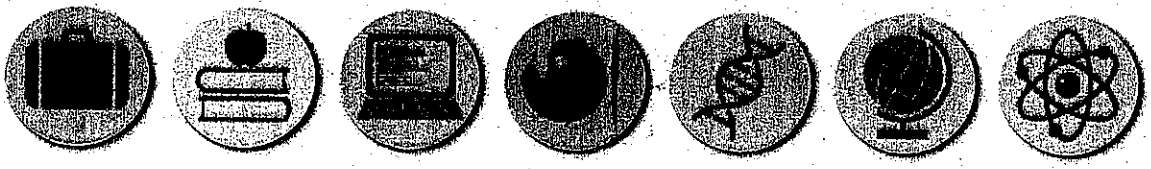

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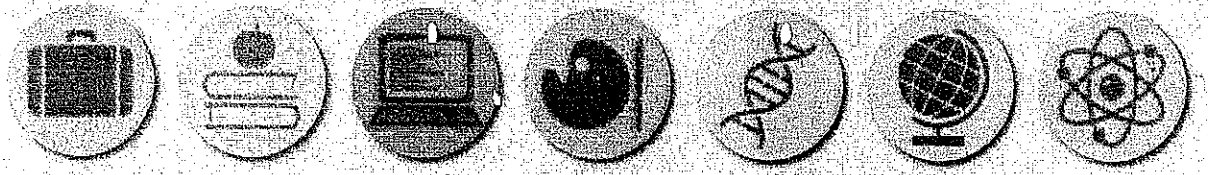

Editors:
Vichit U-on
George C. Hadjinicola

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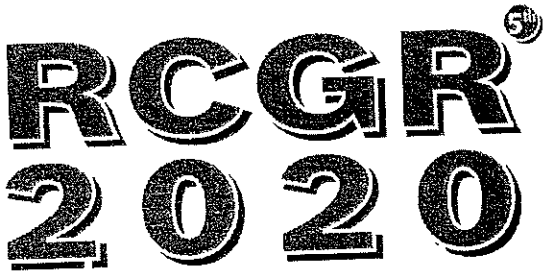

Noppadol Senken
Master of Economics Program in Applied Economics,
Maejo University, Chiang Mai, Thailand
E-mail: Noppadol.senken@gmail.com

Jorge Fidel Barahona Caceres
Maejo University, Chiang Mai, Thailand
E-mail: jorge@mju.ac.th

Wanvilai Chulaphan
Maejo University, Chiang Mai, Thailand
E-mail: wanvilai@mju.ac.th

and

Tanchanok Bejrananda
Maejo University, Chiang Mai, Thailand
E-mail: thanchanok@mju.ac.th

The Causal Relationship between Financial Development, Energy Consumption and Economic Growth in South East Asia

by

Noppadol Senken
Master of Economics Program in Applied Economics,
Maejo University, Chiang Mai, Thailand
E-mail: Noppadol.senken@gmail.com

Jorge Fidel Barahona Caceres
Maejo University, Chiang Mai, Thailand
E-mail: jorge@mju.ac.th

Wanvilai Chulaphan
Maejo University, Chiang Mai, Thailand
E-mail: wanvilai@mju.ac.th

and

Tanchanok Bejrananda
Maejo University, Chiang Mai, Thailand
E-mail: thanchanok@mju.ac.th

Abstract

The impact of development in the financial and energy sector on the economic growth have garnered much attention. This is the case in South East Asia, where energy consumption and financial development have experienced a rapid growth. The aim of this study is to investigate the causal link between financial development, energy consumption and economic growth using panel data of Singapore, Thailand, Malaysia and Philippines from 1971 to 2014 Our models are panel ordinary least square with auto regressive based on the growth model. Our results show that there is evidence of unidirectional causality running from energy consumption to economic growth and unidirectional causality running from financial development to economic growth. These finding provide insightly the policy recommendation which is making research and development more accessible for renewable energy in the future.

Keywords: Financial Development, Energy, Growth, Auto Regressive

1. Introduction

In the present, the level of financial development and energy consumption are the important variables which identified economic growth (Jalil and Feridun, 2011; Kahouli, 2017; Komal and Abbas, 2015; Omri, Daly et al. 2015; Pradhan et al. 2018; Sadorsky, 2010). The nexus between financial development, energy consumption and economic growth has been investigated in energy economics literature for developing and developed countries. The available evidence on the relationship between these variables have been inconsistent due to the different countries studied, period to studies, variable used and different methodologies used. In a broad-spectrum, financial development are main forces that can improve about high economic growth (Pradhan et al. 2014). Energy is an important factor in the production of goods and services (Sadorsky, 2010). The increase in energy use will have many consequences such as: climate change and air pollution. In the same context, the financial development can distribute efficient financial service for markets, and improve the access of consumption and firms to financial good and services including energy use (Kahouli, 2017). There are studies about causal relationship between financial development, energy consumption and economic growth for example studies in Tunisia found that financial development has positive impact on energy consumption (Shahbaz and Lean, 2012). The relationship between financial development and economic growth have been studied in the empirical literature on the causal link between financial development and economic growth such as Ang and McKibbin, (2007) studied in Malaysia and found that economic growth causal to financial development. Naceur and Ghazouani (2007) studied about financial development and economic growth in Middle East and Africa region and found that unidirectional causality from financial development to economic growth. On the other hand, we still lack knowledge about the relationship between financial development, energy consumption and economic growth in South East Asia. And due to development of technology and energy use are growing fast in these region (Adjaye, 2000; Lee and Chang, 2008). Likewise, financial sector in developing countries is growing continuously (Pradhan et al. 2014). So, studying the causality between financial development, energy consumption and economic growth can help developing countries understand how these causal relationship in South East Asia can differ other regions from those developed countries. In these circumstances, determinant of the causal link between financial development, energy consumption and economic growth is important to allow deducible the implications of passable financial, energy and economic policies to achieve the economic development. To our studies, there has been investigate the causality between financial development, energy consumption and economic growth in South East Asia including Singapore, Malaysia, Philippines, and Thailand. The objective of this study is to investigate the causal relationship among the variables: financial development, energy consumption and economic growth. This study uses three structural equation models, to examine the impact which are (1) financial development and energy consumption on economic growth, (2) economic growth and energy consumption on financial development, and (3) economic growth and financial development on energy consumption.

2. Literature review

Studies have found evidence of financial development help improve the economic growth. Stolbov, (2012) found that financial development significantly affected economic growth. He said that this is due to a healthy development in the financial development economic growth in several ways. An efficiency of financial sector can help increase the rate of capital accumulation, thus increasing the amount of and capital circulating in the economy. There are other studies that try to study whether economic growth can improve financial development. According to King and Levine, 1993 said that economic growth could facilitate the development of the financial. This is due to

economic growth help increase opportunities for fundraising to provide liquidity to reduce the risks. Studies have found evidence that energy consumption helps economic growth. In Middle East it was found that energy consumption improves economic growth in part because energy is a vital part of productive activities (Lise and Montfort, 2007; Pinzon, 2018). Mezghani and Haddad, 2017; Schurr and Netschert, 1960, said that energy use improves economic growth through various channels, including energy cost reduction, and increasing total factor productivity and economic growth. Increasing in energy security. Make investments in the energy sector to rise and affect the economy in the long run (Jacobson, 2009). There are other studies that try to study whether economic growth can improve energy consumption. Studies have found evidence of economic growth help improve the energy consumption. In the six countries of Gulf Cooperation Council (GCC) find that causality running from economic growth to energy consumption, had to support energy conservation policies in the GCC countries may be start and designed to decrease energy consumption growth without much concern about negative effect on economic growth. Studies have found evidence of financial development help improve the energy consumption. Studies in Central and Eastern European frontier economies found that the household can be easier for gaining an easy and cheap access to borrowed funds to consume energy product that directly affect energy demand. Industrial also can be easier for entrepreneurs to gain access capital in order to expand existing business that business effect. Increased stock market activity can increase risk diversification for consumers and business that result in increased fund for investment, that a wealth effect (Sadorsky, 2011). There are other studies that try to study whether energy consumption can improve economic growth. In Malaysia found that energy is a key input for the development of financial sector in Malaysia. That, energy conservation policy will contrast affect the financial development, which in slows down the efficacy of the Malaysian economy (Tang and Tan, 2014).

3.Data

Data used for this study covers four countries in South East Asia (Singapore, Malaysia, Philippines, and Thailand) from 1971 to 2014. The data were extracted from the World Development Indicators, published by the World Bank and U.S. Energy Information Administration. The variable used in study are GDP per capita (constant 2010 US$), domestic credit to private sector by banks, energy use (kg of oil equivalent per capita), CO_2 emissions (metric tons per capita), trade (percentage of GDP), gross fixed capital formation (constant 2010 US$), total population, broad money (percentage of GDP), consumer price index (2010 = 100), life expectancy at birth, total (years) and Real Average Imported Crude Oil Price Imported Crude Oil Price ($/barrel).

4 Research Methodology

To examine linkages between economic growth, financial development and energy consumption in South East Asia we base our empirical approach on the growth model proposed by Kahouli, (2017), Omri et al. (2015), Omri and Kahouli, (2014) and Sadorsky, (2011) use of the following equations

$$\Delta log\, y_{it} = \alpha_0 + \beta_1 \Delta logfd_{it} + \beta_2 \Delta logec_{it} + \beta_3 \Delta logk_{it} + \beta_4 \Delta logt_{it} + \beta_5 \Delta logp_{it} + \beta_6 \Delta logle_{it} + \varepsilon_{it} \quad (1)$$

$$\Delta logfd_{it} = \alpha_0 + \beta_1 \Delta logy_{it} + \beta_2 \Delta logec_{it} + \beta_3 \Delta logk_{it} + \beta_4 \Delta logp_{it} + \beta_5 \Delta logbm_{it} + \beta_6 \Delta logcpi_{it} + \varepsilon_{it} \quad (2)$$

$$\Delta logec_{it} = \alpha_0 + \beta_1 \Delta logy_{it} + \beta_2 \Delta logfd_{it} + \beta_3 \Delta logt_{it} + \beta_4 \Delta logco_{2it} + \beta_5 \Delta logp_{it} + \beta_6 \Delta logoil_{it} + \varepsilon_{it} \quad (3)$$

In the equations, the subscript i = 1,...,N denote the country (in our study, we have 4 countries) and t = 1,...T denote the time period (our time frame is 1971-2014). Equation 1 states that growth rate of domestic credit to private sector $\Delta logfd_{it}$, growth rate of energy consumption $\Delta logec_{it}$, growth rate of gross fixed capital formation $\Delta logk_{it}$, growth rate of trade $\Delta logt_{it}$, population growth $\Delta logp_{it}$ and growth rate of life expectancy $\Delta logle_{it}$ can be affect to economic growth $\Delta log\, y_{it}$. According to theory we predict that fd_t can positive affect to y_t or we call supply-leading (Patrick, 1996). Due to financial sector can help increase investment and ec_t can positive impact on economic growth or we call growth hypothesis because energy consumption is a factor increasing the production, which also led to increase economic growth. In Equation 2, $\Delta logfd_{it}$ can be influenced by $\Delta log\, y_{it}$, $\Delta logfd_{it}$, $\Delta logk_{it}$, $\Delta logp_{it}$, growth rate of broad money $\Delta logbm_{it}$ and growth rate of consumer price index $\Delta logcpi_{it}$. From theory we can predict that y_t can to positive affect to fd_t or demand-following (Patrick, 1996), due to economic growth help increasing opportunities for fund to provide liquidity, ec_t can positive affect to fd_t because energy can help countries to achieve high investment which to increasing in financial development. bm_t to demonstrate all the existing money supply in the system. Equation 3 states that $\Delta logec_{it}$ can be affected by $\Delta log\, y_{it}$, $\Delta logfd_{it}$, $\Delta logt_{it}$, growth rate of CO_2 emissions of $\Delta logco_{2it}$, $\Delta logp_{it}$, $\Delta logge_{it}$ and growth rate of real average imported Crude Oil Price $\Delta logoil_{it}$. From theory we can predict that y_t can positive affect to ec_t or we call conservation hypothesis due to economic growth help improve the energy use, especially that of renewable energy. And fd_t can positive affect to ec_t, to help consumer easy to get energy use. This study applies the Auto Regressive Model (AR) with panel data and lagged value (t-j) of variable to explore the causal relationship between financial development, energy consumption and economic growth. In equation 4 financial sector of each country is not the same. So, the effect of financial development impact on economic growth may be different, we add interaction and we separate interaction. D_1 we use represent the effect of financial development in Singapore on economic growth by determining Singapore equal one, Malaysia, Philippines and Thailand equal zero, D_2 we use represent the effect of financial development in Thailand on economic growth by determining Thailand equal one, Singapore, Malaysia and Philippines equal zero and D_3 we use represent the effect of financial development in Malaysia on economic growth by determining Malaysia equal one, Singapore, Thailand and Philippines equal zero. In equation 5, we also add interaction and separate as equation 4. But in this case, we use dummy variable to represent the effect of economic growth on financial development as follow:

$$\Delta log\, y_{it} = \alpha_0 + \sum_{j=0}^{M} \gamma_j \Delta logy_{it-j} + \sum_{j=0}^{M} \delta_j \Delta logfd_{it-j} + (\upsilon_1 \Delta logfd_{it} \times D_1 + \upsilon_2 \Delta logfd_{it} \times D_2 + \upsilon_3 \Delta logfd_{it} \times D_3) + \sum_{j=0}^{M} \zeta_j \Delta logec_{it-j} + \sum_{j=0}^{M} \kappa_j \Delta logk_{it-j} + \sum_{j=0}^{M} \rho_j \Delta logt_{it-j} + \sum_{j=0}^{M} \psi_j \Delta logp_{it-j} + \sum_{j=0}^{M} \lambda_j \Delta logle_{it-j} + \varepsilon_{it} \quad (4)$$

$$\Delta logfd_{it} = \alpha_0 + \sum_{j=0}^{M} \gamma_j \Delta logfd_{it-j} + \sum_{j=0}^{M} \delta_j \Delta logy_{it-j} + (\upsilon_1 \Delta logy_{it} \times D_1 + \upsilon_2 \Delta logy_{it} \times D_2 + \upsilon_3 \Delta logy_{it} \times D_3) + \sum_{j=0}^{M} \zeta_j \Delta logec_{it-j} + \sum_{j=0}^{M} \kappa_j \Delta logk_{it-j} + \sum_{j=0}^{M} \varphi_j \Delta logp_{it-j} + \sum_{j=0}^{M} \psi_j \Delta logbm_{it-j} + \sum_{j=0}^{M} \lambda_j \Delta logcpi_{it-j} + \varepsilon_{it} \quad (5)$$

$$\Delta logec_{it} = \alpha_0 + \sum_{j=0}^{M} \gamma_j \Delta logec_{it-j} + \sum_{j=0}^{M} \delta_j \Delta logy_{it-j} + \sum_{j=0}^{M} \zeta_j \Delta logfd_{it-j} + \sum_{j=0}^{M} \kappa_j \Delta logt_{it-j} + \sum_{j=0}^{M} \varphi_j \Delta logco_{2it-j} + \sum_{j=0}^{M} \psi_j \Delta logp_{it-j} + \sum_{j=0}^{M} \chi_j \Delta logoil_{it-j} + \varepsilon_{it} \quad (6)$$

5. Results and Discussion

Table 1 Determinants of Economic growth, financial development and energy consumption

Economic Growth		Financial Development		Energy consumption	
Variable	Coefficient	Variable	Coefficient	Variable	Coefficient
C	0.037 (0.006)[a]	C	-0.039 (0.029)	C	-0.012 (0.017)
Δlogfd	-0.015 (0.023)	Δlogy	1.456 (0.481)[a]	Δlogy	0.563 (0.200)[a]
$\Delta logfd_{t-1}$	0.016 (0.016)	$\Delta logy_{t-1}$	0.660 (0.283)[b]	$\Delta logy_{t-1}$	0.281 (0.206)
Δlogfd x D_1	0.078 (0.044)[c]	$\Delta logy_{t-2}$	0.219 (0.166)	$\Delta logy_{t-2}$	0.093 (0.168)
Δlogfd x D_2	0.003 (0.036)	Δlogy x D_1	-0.654 (0.457)	Δlogfd	0.043 (0.055)
Δlogfd x D_3	0.035 (0.031)	Δlogy x D_2	-0.205 (0.451)	$\Delta logfd_{t-1}$	-0.069 (0.055)
Δlogec	0.058 (0.022)[b]	Δlogy x D_3	-0.614 (0.442)	Δlogt	0.082 (0.080)
$\Delta logec_{t-1}$	0.007 (0.021)	Δlogec	0.085 (0.082)	$\Delta logt_{t-1}$	-0.052 (0.070)
Δlogk	0.195 (0.017)[a]	$\Delta logec_{t-1}$	-0.026 (0.078)	$\Delta logco_{2t}$	0.163 (0.046)[a]
$\Delta logk_{t-1}$	-0.021 (0.017)	Δlogk	0.121 (0.090)	$\Delta logco_{2t-1}$	-0.083 (0.048)[c]
Δlogt	0.097 (0.022)[a]	$\Delta logk_{t-1}$	0.071 (0.079)	Δlogp	-0.267 (0.926)
$\Delta logt_{t-1}$	-0.028 (0.021)	Δlogp	0771 (0.957)	$\Delta logp_{t-1}$	-3.952 (1.162)[a]
$\Delta logt_{t-2}$	0.039 (0.018)[b]	$\Delta logp_{t-1}$	0.248 (1.131)	$\Delta logp_{t-2}$	4.505 (0.898)[a]
Δlogp	-1.127 (0.276)[a]	$\Delta logp_{t-2}$	0.592 (0.987)	Δlogoil	-0.042 (0.025)
$\Delta logp_{t-1}$	-0.212 (0.269)	Δlogbm	0.631 (0.060)[a]	AR(1)	0.014 (0.085)
Δlogle	-3.508 (1.578)[b]	$\Delta logbm_{t-1}$	0.037 (0.058)		
$\Delta logle_{t-1}$	-0.697 (1.890)	Δlogcpi	-0.257 (0.151)[c]		
$\Delta logle_{t-2}$	4.594 (4.640)[a]	$\Delta logcpi_{t-1}$	0.118 (0.134)		
AR(1)	0.133 (0.095)	AR(1)	0.266 (0.078)[a]		
AR(2)	0.048 (0.090)				

R^2	0.778	R^2	0.712	R^2	0.363
ADJ R^2	0.747	ADJ R^2	0.675	ADJ R^2	0.302

Notes: a, b, c Show significance at 1%, 5%, and 10% level.

The findings in table 1 show that domestic credit to private sector has an insignificant impact on economic growth including result with interaction. However, energy consumption, is found to significantly affect economic growth. A 1% increase in energy will increase economic growth by 0.058%. As Lise and Montfort, 2007; Pinzon, 2018; found that positive significant to economic growth. We can imply that increasing energy use cause economic growth increase. In case of gross fixed capital formation show a positive and significant impact to economic growth, when capital formation increases 1%, the economic growth will increase 0.195%. The coefficient of trade implies that a 1% increase in trade led to 0.097% increase in economic growth. That result similar to Omri, Kahouli, 2014, Jalil and Feridun, 2011, therefore increasing in trade cause to higher economic. And we found that population and life expectancy have negative relationship to the economic growth. Turning to the determinants of financial development, the result indicates that economic growth has a positive impact on financial development. A 1% increase in economic growth is found to increase domestic credit to private sector by 1.456%. Our finding is also consistent with Ang and McKibbin, 2007, the economy expands, demand for financial increase. Furthermore, it was found that the interaction between economic growth and each country was not significantly different. In the same context, the result of energy consumption has an insignificant impact on financial development, which is similar to results found by Coban and Topcu (2013). They found that in the European Union (EU) there was no significant association between financial development and energy consumption. Indeed, our result show that capital formulation growth no significant association between financial development and capital formulation. In case of population has no significant effect on financial development. In case of broad money has a positive and significant impact to financial development. The coefficient of broad money implies that a 1% increase in broad money led to 0.631% increase in domestic credit to private sector. In case of consumer price index result show that negative and significant impact on financial development, when changing in consumer price index increase 1%, domestic credit to private sector will decrease 0.257%. When investigating the determinants of energy consumption, the result show that economic growth has positive and significant impact on energy consumption, when economic growth increases 1%, energy use will increase 0.563%. As financial development has insignificant impact on energy consumption. The result for other explicative variables CO_2 emissions, population and oil price give mixed result. In case of CO_2 emissions, the finding result show that a 1% increase in CO_2 emissions will led to increase energy use by 0.163%. And population we found that population has insignificant affect to energy consumption, and oil price, result show an insignificant impact on energy use.

6. Conclusion

This study explores the causal relationship between financial development, energy consumption and economic growth in case of Singapore, Malaysia, Philippines, and Thailand over period 1971-2014. We have investigated the three-way linkages between financial development, energy consumption and economic growth using three structural equations to examine the impact of first financial development, energy consumption and other variables on economic growth; second economic growth, energy consumption and other variables on financial development; third economic growth, financial development and other variables on energy consumption. The main findings show that of unidirectional causality running from energy consumption to economic growth. And unidirectional causality running from economic growth to financial development. Have not causality

between financial development and energy consumption. Proposal financial development with economic growth means economic growth has a causal impact on financial development and an increase in economic growth continued to impact positively on the financial and effect the business sector. Another proposal between economic growth and energy consumption implies energy is an important in current but in future energy may be not available or not enough to consume. So, the energy price will increase and it will impact on economic growth. Therefore, we would recommend increase spending on Research and Development of renewable energy which can solve the problem of the energy consumption in the future. Finally, would benefit from future research, take an interest more about trade. Because trade is the important in Asia and due to situation of trade between China and United States can be affect to the relationship.

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SPU
SRIPATUM UNIVERSITY

Sripatum University (Bangkhen)
2410/2 Phaholyothin Rd., Jatujak, Bangkok 10900 Thailand
Tel: (662)579 1111, Ext .1302, 1307, 1308, Fax: (662) 558 6868
Email: ir@spu.ac.th

Acceptance Letter

5 January 2020

Paper Title: The Causal Relationship between Financial Development, Energy Consumption and Economic Growth in South East Asia

Author(s): Noppadol Senken

Dear Sir/Madam,

We are pleased to inform you that your paper, based on your abstract, has been accepted for the Regional Conference on Graduate Research 2020 to be held on 18 January 2020, Sripatum University, Khonkaen, Thailand. The Committee now needs to have confirmation from you that you will be able to submit your full paper to us by 10 January 2020 and that you will be able to present your paper in a 15 minute time slot during parallel session at the Conference. The paper should be no more than 4000 words, Times Roman 12pt and single-spaced. Please confirm that you will attend the conference to present your paper, notifying us as soon as possible, and no later than 15 January 2020. If I do not have confirmation from you by 15 January 2020, your 15 minute time slot will be allocated to a reserve speaker.

We would also like you to submit your PowerPoint presentation to us by 13 January 2020 so that we can give you feedback regarding the likelihood that your presentation will stay within the 15 minutes of allocated time. A member of our Committee will be in contact with you about this after we have had confirmation that you will attend the conference to present your paper. The conference program, and final session schedule will be delivered to you by 15 January 2020 through your email address, and we are looking forward to hearing from you.

With Warmest Regards,

Assoc. Prof. Dr. Vichit U-on
Dean, Graduate College of management
Coordinator E-mail: yongyut.ho@spu.ac.th
Website: https://www.spu.ac.th/fac/graduate/th/content.php?cid=19370

Th[illegible]th Regional Conference on Graduate Research
Sripatum University, Khon Kaen Campus, Khon Kaen, Thailand
Theme: Sustainable Business Growth, Challenges, Measures and Solutions in Global Scenario

Saturday (S) 18 January 20	Room	Floor 3, Room 206 – Pookayaporn Auditorium						
		Floor 2, Room 301	Floor 2, Room 302	Floor 2, Room 303	Floor 2, Room 304	Floor 2, Room 305	Floor 2, Room 306	Floor 2, Room 307
08:00 – 09:00		REGISTRATION						
09:00 – 09:15		OPENING ADDRESS: Asst. Prof. Dr. Janya Phukkamarn, Honorary Chair Sripatum University, Thailand						
09:15 – 09:30		WELCOME ADDRESS: Assoc. Prof. Dr. Vichit U-on, General Chair Sripatum University, Thailand						
09:30 – 10:45		KEYNOTE ADDRESS: "Sustainable Business Growth Towards Global Economy" Dr. Tau Maarten Pieter Rpderik, The Netherlands Tomas Lars Planberg, Sweden						
10:45 – 11:00		SUNDAY AM BREAK						
11:00 – 12:20		SA1 Educational Administration and Planning 1	SB1 Educational Administration and Planning 2	SC1 Educational Administration and Planning 3	SD1 Business and Marketing Management 1	SE1 Accounting, Finance, and Banking 1	SF1 Operation and Supply Chain Management	SG1 Laws and Public Administration 1
12:20 – 13:20		SUNDAY LUNCH BREAK						
13:20 – 15:00		SA2 Educational Administration and Planning 4	SB2 Educational Administration and Planning 5	SC2 Educational Administration and Planning 6	SD2 Business and Marketing Management 2	SE2 Accounting, Finance, and Banking 2	SF2 Communication Arts	SG2 Laws and Public Administration 2
15:00 – 15:20		SUNDAY PM BREAK						
15:20 – 18:20		SA3 Educational Administration and Planning 7	SB3 Educational Administration and Planning 8	SC3 Educational Administration and Planning 9	SD3 Business and Marketing Management 3	SE3 Accounting, Finance, and Banking 3	SF3 Accounting, Finance, and Banking	SG3 Organization and Human Resource Management
19:00 – 21:00		WELCOME DINNERS: Authentic Chinese Food, Kosa Hotel, Khon Kaen, Thailand						
21:00 – 21:15		CLOSING ADDRESS: Asst. Prof. Dr. Ungul Laptaned, Program Chair Thai Researchers' Consortium of Value Chain Management and Logistics, Thailand						

Code	Session		Chair	Room	Start	Finish
SE1	Accounting, Finance, and Banking 1		Dr.Sumana Chantharat	Floor 2, Room 305	11:00	12:20
0037	11:00	11:20	The Relation Between Marketing Mix and Acceptance of Using MYMO Application by GSB in Kamalasai District, Kalasin *Chinapa Issaradeth and Nontipan Prayurhong*			
0049	11:20	11:40	The Relationship between Marketing Mix and Financial Investment Behaviors of Senior Citizens in Nong-Rua, Chumpae, and Sichomphu District, Khon Kaen Province *Natda Chaichawakoop and Nontipan Prayurhong*			
0055	11:40	12:00	The Relationship between Marketing Mix and Purchase Decision of Fresh Coffee at the Gas Station in Nong Ruea and Chum Phae Districts in Khon Kaen Province *Tuntigon siritepsongklod and Nontipan Prayurhong*			
0039	12:00	12:20	Motivation Factors and Transformational Leadership Affecting Organizational Commitment of the Construction Business in Bangkok *Jirapach Pongsunont and Natsapun Paopun*			

Code	Session		Chair	Room	Start	Finish
SF1	Operation and Supply Chain Management		Dr.Virat Chareonchua	Floor 2, Room 306	11:00	12:20
0080	11:00	11:20	Ethics on Online Media Creation *Monchaya Sabuar and Karatploy Thamkaew Sillapaurai*			
0077	11:20	11:40	The Impacts of Social Media Marketing Activities on Brand Awareness of Hair Care Brands *Patnarin Manokum, Wanvilai Chulaphan, Jorge Fidel Barahona Caceres, and Tanchanok Bejrananda*			
0072	11:40	12:00	Ethics in Presenting Entertainment News in the Digital Age *Athit Kamultra and Trirath Pluempitichaikul*			
0073	12:00	12:20	A Study of Thai Film Marketing Communication Strategy at Sahamongkol Film International Co., Ltd. and M Pictures Entertainment Public Co., Ltd. *Chonticha Kingkwai and Ongart Singhalumporng*			

Code	Session		Chair	Room	Start	Finish
SG1	Laws and Public Administration 1		Ms.Nisarawan Piboonpornpong	Floor 2, Room 307	11:00	12:20
0047	11:00	11:20	Guidelines for the Internal Control of the Financial and Accounting of Veterinary Clinics in Muang Khonkaen *Siriprapa Jampee, Kanyarat Jungpantaw, Sudduangkamon Buatik, Supakan Siriod, Pancheewa Chomphuphuen, and, Palakorn Wiangtai*			
0058	11:20	11:40	Factors That Influence The Performance of Accountancy Strategic Management of SME Business in The Province Khon Kaen *Amornrat Sanpanna, Thidarat Kengthon, Tanaporn Prapun, Muttika Onapai, Pornpimon Moonrat, and Palakorn Wiangtai*			
0061	11:40	12:00	The Causal Relationship between Financial Development, Energy Consumption and Economic Growth in South East Asia *Noppadol Senken, Jorge Fidel Barahona Caceres, Wanvilai Chulaphan, and Tanchanok Bejrananda*			
0065	12:00	12:20	A Study of the Accounting Problem of Small and Medium Business in Khon Kaen Province *Tutsanee Hadkhunthod, Chirawan Singkong, Ruttikal Saisopa, Apinya Jomtong, Pawarisa Buanong, and Palakorn Wiangtai*			