Causal Relationship between Entrepreneurship Poverty and Income Inequality in Thailand

Muhammadsuhaimee Yanya

Abstract—The Global Entrepreneurship Monitor (GEM) Report 2007 records that Thailand has a remarkably high entrepreneurial activity, even if compared to Japan or the United States. Many studies, including Schumpeter emphasized the role of entrepreneurship in economic growth and development of a country. Entrepreneurs, characterized by their attitudes to be imaginative, innovative, authoritative, and risk-taking, drive innovation and technological change in the economy, which are crucial in economic growth and development and lead to higher income of the population. On the other hand, entrepreneurship has been considered to associate with higher inequality because the risk embodied in it. Although, during 1990 to 2002 poverty reduction in Thailand has been claimed to be success but income inequality became higher. This raise the question that in Thailand does entrepreneurship cause poverty and inequality or poverty and inequality cause entrepreneurship? Therefore, the aim of this paper is to study the causal relationship between firm establishment as proxy of entrepreneurship, income inequality and poverty. Towards this ends, the analysis on the impact of entrepreneurship on income of the poor, income inequality and poverty are carried out by following the model of Beck et al. This study uses data that are disaggregated into 76 provinces in Thailand, The empirical analysis, based on panel data of Thailand 76 provinces from 1997-2010. The results suggest that firm establishments lead to increasing in number of poverty and higher income inequality of Thai people.

Index Terms—Causality, entrepreneurship, inequality, thailand.

I. INTRODUCTION

Entrepreneurship is believed to be an important mechanism of economic growth and development [1]. Their role is to promote prosperity by creating new jobs [2], reducing unemployment [3], and increase economic development and growth of a region [4]. They also increase productivity by bringing new innovation and speed up structural changes by forcing existing business to reform and increasing competition.

In Thailand, entrepreneurs constitute a large proportion of the adult workforce. According to GEM 2002 report, Thailand has the highest rate of entrepreneurship activity in Asia [5]. The activities of entrepreneurs provide a major impetus of commercial activity. In 2005 Thailand had the highest Total Entrepreneurial Activity (TEA) index with over 20 percent of the adult population claiming to be engaged in some form of entrepreneurship. A further 14 percent of adults

claimed to be owner manager of businesses more than 3 and half years old. Even adults who are not themselves active entrepreneurs profess a positive attitude towards entrepreneurial activity. Some 86 percent of adults aged between 18-64 years say they would be willing to start new businesses). This means that individuals with an entrepreneurial mind set perceive business opportunities and actively pursue these opportunities through some form of entrepreneurial endeavor. Furthermore, Global Entrepreneurship Monitor report year 2007 have shown that the level of Total Early-Stage Entrepreneurial Activity (which is defined as percentage of 18-64 population who are either actively involved in setting up business they will own or co-own, nascent entrepreneur, and who are currently an owner-manager of a new business, i.e. new business ownership) of Thailand is very high, particularly in the population ages between 18 to 34 years if compare to India China Japan and Also America. Moreover, in the latest 2011 the report also shows that the established business ownership rate of Thailand is at the highest rate among 54 countries including China, Japan and America.

II. LITERATURE REVIEW

This section reviews some literatures about poverty, income inequality and entrepreneurship in Thailand and the impact of entrepreneurship on poverty and income inequality.

There are many literatures on poverty and income inequality of Thailand. Some are emphasized on the importance of economic growth, poverty and income inequality such as the paper of Deolalikar [6] using data at provincial level between 1992 to 1999 to explore the impact of economic growth and change in income inequality on poverty reduction and found that while income growth had a strong positive effect on poverty reduction, income inequality had a sharply negative effect. Pholphirul [7] study about the long run evidence of competitiveness income distribution and economic growth and found that the income distribution during the period of crisis gained from labour more than from capital. While Jeong [8] studied about relationship between growth and inequality by using micro data from 1976 to 1996 and suggested that the financial deepening and education expansion contributed to increasing inequality while occupational transformation contributed to reduction in poverty of the country. Warr [9] has concluded in his study about poverty reduction of Thailand through long term growth that the poverty of Thailand had declined over time even though a long-term increase in income inequality however in the short-term the poverty incident declining had

Manuscript received November 14, 2012; revised December 20, 2012.

Y. Muhammadsuhaimee is with the Faculty of Communication sciences, Prince Of Songkla University, Pattani Campus, Pattani, 94000, Thailand (e-mail: ymuhamma@bunga.pn.psu.ac.th).

been directly related to the rate of economic growth. While Deaton [10], Ikemoto [11], and Krongkaew et al. [12] tried to explore the role of agricultural sector on income distribution in Thailand then concluded that income levels in the agricultural sector are lower than that of other sectors. In term of the dynamics of income inequality in Thailand Fofack and Zuefack [13] devided the data of study into six periods

About entrepreneurship, there are small literatures about entrepreneurship in Thailand, especially in the field of economics. Starting with Ayal [14] by shedding some light on the private enterprise and economic progress in Thailand. Paulson and Townsend [15] had studied about entrepreneurship and financial constraints by using the data from rural and semi-urban of Thailand, and given the result that financial constraints play an important role in shaping the pattern of entrepreneurship in Thailand and wealthier households were more likely to start business and invest more in their business and face fewer constraints. While Thoumrungroj [16] emphasized the relationship between institution and entrepreneurship.

There was a seminar on Entrepreneurship and Socio-economic Transformation in Thailand and Southeast Asia in 1993 held by Chulalongkorn University Social Research Institute and French Institute of Scientific Research for Development in Cooperation, divided their paper into five main parts by starting with introduction of economic and cultural context for entrepreneurship in Southeast Asia, second parts was about rural enterprises, third parts concerned with self-employment, forth about entrepreneurs in modern industries and the last was about cultural context for entrepreneurs. In each part of the seminar paper study about Thailand was included, such as, the first part Knippenberg [17] gave an introduction about conditions for successful transition to an industrialized country by using Thailand as the case study. Second section drawn pictures about Thailand rural enterprise in the study of Phelinas [18] about empirical evidence on rice entrepreneurs and land constraint and in the comparative study of Doryane and Schar [19] between Southern India and North-Eastern Thailand about entrepreneurship and dynamics of rural systems. Third, Oudin [20] studied about education and career patterns among small scale entrepreneurs in Thailand, while Charoenloat [21] paid his attention on the economy of the poor by focusing on informal sector in Thailand similar to Igel [22] looked at the economy of survival in the Slums of Bangkok meanwhile a comparative study between Thailand, Ecuador and Tunisia about micro and small enterprises and institutional framework had been taken by Bunjongjit and Lecomte [23]. In the field of modern industries there was no study about Thailand in this section and for the last section most studies based on the history of Chinese enterprise in Thailand [24], [25].

The literatures about impact of entrepreneurship on poverty and income inequality are small. Kimhi [26] mentioned in his study that the conventional wisdom has been to associate entrepreneurship with higher inequality because of the risk embodied in it. By using the inequality decomposition techniques, he has given the conclusion of his study about entrepreneurship and income inequality in Southern Ethiopia that a uniform increase in entrepreneurial

income reduces per capita household income inequality but increasing the number of entrepreneurs does not affect income inequality. Moreover, using supporting policy to encourage entrepreneurship, to reducing inequality could be success in the society that low income, low wealth and relatively uneducated [26]. This is supported by Quadrini [27], Meh [28] and Cagetti and De Nardi [29] that entrepreneurship leads to wealth concentration due to the higher saving rate of entrepreneurs [27].

On the other hand, Rapoport [30] and Naudé [31] argued that inequality could encourage entrepreneurship in developing countries. However, the direction of relationship between inequality and entrepreneurship is depend on moderating factors [28]. In line with the study of Paulson and Townsend [32] that the financial constraint play a key to determine the business start-up and the richer household are easier to start a business. Barnerjee and Duflo [33] emphasize the increasing number of entrepreneurship among the poor by the explanation of characters of the poor with have few skills and little capital which is difficult for the poor to find a job as an employee but easier to be an entrepreneur. This is supported by the work of Acs, *et al* [34] that a country's higher development level can encourage and strengthen entrepreneurial activity. In the work of Deutsch and Silber [35] by using the Kuznets curve to evaluate the impact of various income sources on inequality which is found that one of the factor that effect to declining section of the Kuznets curve is related to the declining share of entrepreneurial income.

III. METHODOLOGY AND DATA

To evaluate the causal relationship between firm establishment, poverty and inequality in Thailand, the empirical equations of Beck et al [36] are used by replacing the SME with entrepreneurship variable and using natural log instead of average growth rate for each variable, and then the following equation will be regressed:

$$(y_{ilt}) = \alpha + \beta(y_{it}) + \gamma(E_{it}) + \varepsilon_{it} \qquad (1)$$

where,

y_{ilt} = Ln of Lowest income quintile of province i at time t

y_{it} = Ln of GPP per capita of province i at time t

E_{it} = Ln of No. of new firm establishment of province i at time t

The coefficient β indicates whether income of lowest income quintile grows proportionally with overall income growth in the economy, and γ indicates whether there is any differential effect of entrepreneurship on income growth of the lowest income quintile beyond any impact on overall income growth. The regression is taken on the annualized log difference of the Gini-coefficient on the log of its initial value, GDP per capita growth and Entrepreneurship.

$$G_{it} = \alpha + \beta(y_{it}) + \gamma E_{it} + \varepsilon_{it} \qquad (2)$$

where G = the log of Gini-coefficient at time t. γ indicates whether Entrepreneurship has any relationship with the evolution of income distribution in the economy. The following equation is regressed in order to evaluate the relationship between entrepreneurship and poverty:

$$P_{it} = \alpha + \beta(y_{it}) + \gamma E_{it} + \varepsilon_{it} \qquad (3)$$

where P is the log of headcount ratio.

The Granger causality test would be applied to test the causal relationship between entrepreneurship and economic growth by apply the steps as follows: first the order of integration of the series(stationary) were needed to test for both variables by using the augmented Dickey Fuller (ADF) Panel Unit Root test, if the economic growth and entrepreneurship variable are stationary t-test or F-test will be used and the F-test would be proposed if the causal variable can be made to appear only in first differences. Second step, the optimal lag length will be chosen by using the Schwarz Information Criterion (SIC) and the Akaike Information Criterion(AIC) and then the cointegration would be tested as the third step if non-stationary appeared for both variables. For testing the long run relationship, the Granger Causality Test will be applied at this step, with the null hypothesis that entrepreneurship does not granger cause economic growth and vice versa. To indicate how much the variability of Gross provincial product (YG) is explained by disturbances in firms establishment (EG) and vice versa, the variance decomposition and Impulse Response Function will be tests. Given the model specification in Eq. (1), we collect the necessary data on the aforementioned variables for the 76 provinces in Thailand during the period 1997–2008. The data are obtained from four main sources: The National Statistical Office (NSO), Office of Small and Medium Enterprise Promotion (OSMEP), Department of Business Development (DBD), Bank of Thailand, Office of the National Economic and Social Development Board

IV. RESULTS

The ADF panel unit root test results are present in Table1.shows that all variables included the model are all integrated at order zero I (0) except natural log of gross provincial product that is integrated at first difference. Therefore we can directly estimate the VAR Granger Causality Test. In order to investigate the direction of causal relationship between firm establishment poverty and inequality the panel granger causality by VAR method has been used to test these relationships.

Table II presents the results for the Granger causality test which shows that there are significant relationships between lnE and lnGPP, lnYq, lnGini and lnHC, which mean that firm establishment are granger cause natural log of gross provincial product, income quintile, Gini-coefficient and Headcount index. In contrary, only natural log of gross provincial product that granger cause firm establishment but natural log of income quintile, Gini-coefficient and Headcount index do not granger cause natural log of new firm establishment.

TABLE I: PANEL UNIT ROOT TEST RESULTS

	Level /I(0)	
Variable	Levin, Lin & Chu t	PP - Fisher Chi-square
lnGPP	-5.30 (0.00)	105.77 (0.15)
lnE	-20.26 (0.00)	234.26 (0.00)
lnYq	-12.47 (0.00)	135.38 (0.00)
lnGini	-35.28 (0.00)	132.31 (0.00)
lnHC	-4.69 (0.00)	154.78 (0.00)

	Level /I(1)	
Variable	Levin, Lin & Chu t	PP - Fisher Chi-square
lnGPP	-30.6422 (0.0000)	182.205 (0.0000)
lnE	-61.7118 (0.0000)	99.9308 (0.0005)
lnYq	-3.78007 (0.0001)	78.3356 (0.0389)
lnGini	-484.830 (0.0000)	114.031 (0.0000)
lnHC	-42.8362 (0.0000)	179.451 (0.0000)

TABLE II: GRANGER CAUSALITY TEST RESULT.(VAR GRANGER CAUSALITY/BLOCK EXOGENEITY WALD TESTS)

IV / DV	lnGPP		lnE		lnYq		lnGini		lnHC	
	Chisq	Prob.	Chisq	Prob.	Chisq	Prob.	Chi-sq	Prob	Chisq	Prob
lnGPP	-	-	0.03	0.0023	9.32	0.0095	17.15	0.0002	1.94	0.3790
lnE	9.57	0.0084	-	-	3.06	0.2165	3.96	0.1377	1.67	0.4330
lnYq	5.45	0.0656	7.60	0.0224	-	-	-	-	-	-
lnGini	9.57	0.0084	6.78	0.0337	-	-	-	-	-	-
lnHC	1.63	0.4435	8.95	0.0114	-	-	-	-	-	-

TABLE III: VARIANCE DECOMPOSITION OF LN E:

Period	S.E.	LNE	LNGPP	LNYQ
1	0.26	100.00	0.00	0.00
2	0.33	98.37	1.59	0.04
3	0.39	98.09	1.49	0.42
4	0.43	97.90	1.39	0.70
5	0.47	97.68	1.25	1.07
6	0.51	97.46	1.11	1.43
7	0.54	97.23	0.99	1.78
8	0.56	96.96	0.91	2.13
9	0.59	96.64	0.88	2.48
10	0.61	96.28	0.91	2.82

In the Table III-Table VI the variance decomposition of lnE, lnYq, lnGini and lnHC are explained by its own innovations even after 10th period, while the variation of ,

lnYq, lnGini and lnHC is explained by disturbance of natural log of firm establishment (lnE) are very small. These imply that the firm establishments (EG) have a greater influence on natural log of gross income quintile, Gini-coefficient and Headcount index than the variance decomposition of natural log of gross income quintile, Gini-coefficient and Headcount index. This is consistent with the result of Granger Causality Test that growth of firm establishment granger cause growth of income quintile, Gini-coefficient and Headcount index but not vice versa.

TABLE IV: VARIANCE DECOMPOSITION OF LN LNYQ

Period	S.E.	LNE	LNGPP	LNYQ
1	0.22	4.49	0.42	95.09
2	0.24	5.90	0.37	93.72
3	0.25	5.56	0.37	94.08
4	0.25	5.53	0.52	93.96
5	0.25	5.85	0.72	93.43
6	0.25	6.38	0.99	92.63
7	0.25	7.02	1.27	91.70
8	0.26	7.70	1.56	90.74
9	0.26	8.38	1.83	89.79
10	0.26	9.03	2.09	88.88

TABLE V: VARIANCE DECOMPOSITION OF LNGINI

Period	S.E.	LNE	LNGINI	LNGPP
1	0.16	1.93	98.07	0.00
2	0.17	1.91	97.95	0.15
3	0.18	1.71	98.13	0.16
4	0.19	1.85	97.88	0.28
5	0.19	2.30	97.17	0.53
6	0.20	2.97	96.15	0.88
7	0.20	3.80	94.89	1.31
8	0.20	4.72	93.50	1.78
9	0.20	5.68	92.04	2.28
10	0.20	6.64	90.57	2.79

TABLE VI: VARIANCE DECOMPOSITION OF LNHC:

Period	S.E.	LNE	LNGPP	LNHC
1	0.65	2.41	0.00	97.59
2	0.74	8.32	0.20	91.47
3	0.85	8.52	0.21	91.27
4	0.91	9.39	0.32	90.29
5	0.96	9.55	0.43	90.02
6	1.00	9.72	0.58	89.70
7	1.04	9.75	0.75	89.50
8	1.10	9.75	0.96	89.30
9	1.09	9.70	1.18	89.12
10	1.11	9.63	1.44	88.93

In summary, there is only one way relationship between growth of entrepreneurship (firm establishment) and poverty (Headcount ratios), and income distribution (Income quintile index and Gini-coefficient) that is an increase in firm establishment could granger cause poverty and income inequality to significantly change. This means that firm establishment plays a key role in increasing of number of poverty and income inequality.

V. CONCLUSION

This study attempted to capture the causal relationship between entrepreneurship and poverty and income inequality by using a framework from the model of Beck et al (2005) by exploring the direction of causality using Granger Causality as a tool. As an empirical matter, the significant support were found for the notion that the firm establishment cause poverty and income inequality but poverty and income inequality do not cause new firm to establish. This is may be explained by the data used in the study between years 1997-2008, which was the period of Asian economic crisis. At the time of crisis number of unemployment were very high as well as number of poverty and level in income inequality. When workers tried to survive by becoming self-employment and establish new firm, level of poverty and income inequality were still increased.

REFERENCES

[1] J. A. Schumpeter, (Ed.), *The Theory of Economic Development,* Cambridge MA: Harvard University Press, 1934.

[2] A. Van Stel and D. Storey, "The link between firm births and job creation: Is there a Upas tree effect?" *Regional Studies*, vol. 38, no. 8, 2004, pp. 893-909,

[3] D. Evans and L. S. Leighton, "Some empirical aspects of entrepreneurship," *American Economic Review*, vol. 79, 1989, pp. 519-535.

[4] Z. J. Acs, S. Desai, and J. Hessels, "Entrepreneurship economic development and institutions," *Small Business Economics*, vol. 31, no. 3, 2008, pp. 219-234.

[5] P. Reynolds, W. Bygrave, A. Erkko, and M. Hay, *Global Entrepreneurship Monitor 2002 Summary Report*, Babson Park, MA: Babson College, Ewing Marison Kauffman Foundation and the London Business School, 2002.

[6] A. B. Deolalikar, "Poverty, Growth, and Inequality in Thailand," *Erd Working paper Series No. 8 Economics And Research department*, Asian Development Bank, 2002.

[7] P. Pholphirul, "Competitiveness, Income Distribution, and Growth in Thailand: What Does the Long-run Evidence Show?" *International Economic Relations Program Thailand Development Research Institute*, Thailand, 2005.

[8] H. Jeong, "Assessment of Relationship between Growth and Inequality: Micro Evidence from Thailand," the Iepr Working Paper 05.20, California, 2005.

[9] P. Warr, *Poverty Reduction Through Long-term Growth: The Thai Experience. Working Papers in Trade and Development.* Working Paper no. 2008/19(College of Asia and the Pacific The Australian National University).

[10] D. Angus, "Rice Prices and Income Distribution in Thailand: A Non-parametric Analysis," *Economic Journal, Royal Economic Society*, vol. 99, no. 395, 1989, pp. 1-37.

[11] I. Yukio, *Income Distribution in Thailand: Its Changes, Causes, and Structure.* Tokyo: Institute of Developing Economies, 1991.

[12] M. Krongkaew, P. Tinakorn, and S. Suphachalasai, "Thailand. In M. G. Quibria ed.," *Rural Poverty in Developing Asia*, vol. 2. Asian Development Bank, Manila, Philippines. 1996.

[13] F. Hippolyte and A. Zeufack, "Dynamics of Income Inequality in Thailand: Evidence from Household Pseudo-Panels," World Bank Economists Forum, 1999

[14] B. A. Eliezer, "Private Enterprise and Economic Progress in Thailand," *The Journal of Asian Studies*, November 1966, vol. 26, no. 1, 1966, pp. 5-14.

[15] A. L. Paulson, and R. M. Townsend, "Entrepreneurship and Financial Constraints in Thailand," *J. Corporate Finance*, vol. 10, (March): 2004, pp. 229–262.

[16] T. Amonrat, "Institutional drivers of entrepreneurial intentions in an emerging economy: an empirical investigation in Thailand," *Journal of International Business and Economics*, International Academy of Business and Economics. May, 2010, vol. 10, no. 2.

[17] L. Knippenberg, "Conditions for a Successful Transition to an Industrialized Country: Thailand as a Case," A Preliminary Theoretical Framework, presented at the Entrepreneurship and socio-economic transformation in Thailand and Southeast Asia., Bangkok, 1993.

[18] P. Phelinas, "Rice Entrepreneurs Facing Land Constraints: Some Empirical Evidence," presented at the Entrepreneurship and

socio-economic transformation in Thailand and Southeast Asia, Bangkok. 1993.

[19] K. T. Doryane and P. Schar, "Entrepreneurship and Dynamics of Rural Systems: A Comparative Study on Southern India and North-Eastern Thailand," presented at the Entrepreneurship and socio-economic transformation in Thailand and Southeast Asia, Bangkok. 1993.

[20] X. Oudin, "Education and Career Patterns among Small Scale Entrepreneurs in Thailand," presented at the Entrepreneurship and socio-economic transformation in Thailand and Southeast Asia, Bangkok. 1993.

[21] V. Charoenloet, "Informal Sector: the Economy of the Poor? presented at the Entrepreneurship and socio-economic transformation in Thailand and Southeast Asia, Bangkok, 1993.

[22] B. Igel, "The Economy of Survival in the Slums of Bangkok" presented at the Entrepreneurship and socio-economic transformation in Thailand and Southeast Asia, Bangkok. 1993.

[23] H. B. S. L. a. N. Bunjongjit, "Micro and Small Enterprises and Institutional Framework: a Comparative Study of Thailand, Ecuador and Tunisia," presented at the Entrepreneurship and socio-economic transformation in Thailand and Southeast Asia, Bangkok. 1993.

[24] A. Pongsapich, "Some Theoretical Consideration on Chinese Entrepreneurs and Their Dominant Role in Responding to the Thai Development Ideology," presented at the Entrepreneurship and socio-economic transformation in Thailand and Southeast Asia, Bangkok. 1993.

[25] J. Baffie, "From Rags to Riches: Discussing Achievements of Some Chinese Families in Thailand," presented at the Entrepreneurship and socio-economic transformation in Thailand and Southeast Asia, Bangkok. 1993.

[26] A. Kimhi, "Entrepreneurship and income inequality in southern Ethiopia," *Small Business Economics*, Springer, vol. 34, no. 1, January, 2010, pp. 81-91,

[27] V. Quadrini, "Entrepreneurship, Saving and Social Mobility," *Review of Economic Dynamics, Elsevier for the Society for Economic Dynamics,* vol. 3, no. 1, Jan. 2000. pp. 1-40,

[28] C. Meh, "Entrepreneurship, Wealth Inequality, and Taxation," *Review of Economic Dynamics, Elsevier for the Society for Economic Dynamics*, vol. 8, no. 3, July, 2005, pp. 688-719.

[29] Cagetti and D. Nardi (Marco Cagetti & Mariacristina De Nardi. *Entrepreneurship, Frictions, and Wealth*, Journal of Political Economy, University of Chicago Press, October, 2006, vol. 114, no. 5, pp. 835-870.

[30] R. Hillel, Migration, "Credit Constraints and Self-Employment: A Simple Model of Occupational Choice, Inequality and Growth," *Economics Bulletin*, vol. 15, 2002, pp. 1-5.

[31] N. Wim, *Entrepreneurship in Economic Development*, Working Papers RP2008/20, World Institute for Development Economic Research (UNU-WIDER). 2008.

[32] P. L. Anna and R. M. Townsend, "Entrepreneurship and Financial Constraints in Thailand," *J. Corporate Finance,* vol. 10, pp. 229–62, March, 2004.

[33] B. Abhijit and E. Duflo, "The Economic Lives of the Poor," *Journal of Economic Perspectives*, vol. 21, no. 1, 2007, pp. 141-167.

[34] A. J. Zoltan and C. Armington, *Using Census BITS to Explore Entrepreneurship, Geography, and Economic Growth*, Small Business Research Summary No. 248, U.S. Small Business Administrations Office of Advocacy, 2005.

[35] J. Deutsch and J. Silber, "Measuring the Impact of Various Income Sources on the Link between Inequality and Development: Implications for the Kuznets Curve," *Review of Development Economics*, Wiley Blackwell, vol. 8, no. 1, 2004, pp. 110-127.

[36] BECK *et al*. "SMEs, Growth, and Poverty: Cross-Country Evidence," *Journal of Economic Growth*, vol. 10, 2005, pp. 199–229.

Muhammadsuhaimee Yanya is a lecturer of the Information and Communication Technology for Management program, Faculty of Communication Sciences, Prince Of Songkla University, Pattani Campus, Thailand. He is a phd. Candidate at Universiti Utara Malaysia. His research interests include entrepreneurship, economic development and quantitative research method.