Role of Financial Development on Entrepreneurship in the Emerging Market Economies

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Yükselen Piyasa Ekonomilerinde Finansal Gelişmenin Girişimcilik Üzerindeki Rolü

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Özet

Bu makale 17 yükselen piyasa ekonomisinde 2004-2009 dönemi için finansal gelişmenin girişimcilik üzerindeki rolünü panel veri tahmin metotlarını kullanarak incelemektedir. Bu amaçla, finansal gelişme göstergeleri, kurumsal faktörler ve ekonomik koşulların girişimcilik üzerine etkisi ampirik olarak araştırılacaktır. Değişkenler arasındaki bağlantıları belirlemek için, iki farklı finansal gelişme ölçütü ve üç kurumsal faktör analizlere dahil edilmiştir. Ampirik bulgular, finansal gelişme ile kişi başına gelirin girişimcilik üzerindeki etkisinin, teorik beklentilerle uyumlu bir şekilde, pozitif ve istatiksel olarak anlamlı olduğunu, enflasyonun ise negatif ve istatistiksel olarak anlamlı etkisinin bulunduğunu göstermektedir. Ayrıca kurumsal faktör olarak, yolsuzluğun kontrol edilmesi ve siyasal istikrarın girişimcilik üzerine etkisi pozitif fakat anlamsızdır.

Anahtar Kelimeler: Girişimcilik, finansal gelişme, Panel Veri Analizi, Yükselen Piyasalar

Abstract

This paper examines the role of financial development on entrepreneurship by employing panel data estimation methods for 17 emerging markets economies over the period 2004-2009. The financial development indicators, the impact of institutional factors and economic conditions on entrepreneurship will be empirically investigated in the analysis. In order to determine the linkages among the variables, two different measures for financial development and three institutional factors will be utilized in the analysis. Empirical findings indicate that while financial development and per capita income level have significantly and positively affected on entrepreneurship as theoretically expected, inflation rate has had negatively and significantly influencing entrepreneurship. Additionally, the effects of control of corruption and political stability, as institutional factors, on entrepreneurship are positive but insignificant.

***Keywords:** Entrepreneurship, Financial Development, Panel Data Analysis, Emerging Markets.*

1.Introduction

The role of financial sector in economic development has been long a hotly debated issue. While Schumpeter (1934), in an early study, emphasizes the importance of financial sector, Patrick (1966) argues that nature of the linkage between financial system and economic growth may be in the demand-following and supply-leading characters. Goldsmith (1969) and Gurley and Shaw (1955, 1957) highlight importance of the intermediary role of financial sector in economic development, McKinnon (1973) and Shaw (1973) separately promoted the idea of liberalizing all sort of restrictions in the financial sector. Parallel to the supply-leading hypothesis (Patrick, 1966), the endogenous growth theories extended to include financial development show that financial factors may be one of the source for increasing rate of return (Greenwood and Jovanovic, 1990; Bencivenga and Smith, 1991; Pagano, 1993; King and Levine, 1993a, 1993b; Hermes, 1994; Hermes and Lensink, 1996; Levine, 1997).

Based upon this theoretical framework, some studies attempt to show how the operation of financial sector may affect the rate of economic growth in the endogenous framework (Greenwood and Jovanovic, 1990; Bencivenga and Smith, 1991; King and Levine, 1993a, 1993b; Roubini and Sala-i Martin, 1992 and Pagano, 1993). The other studies directly tested the causal linkages between financial development and economic growth (Jung, 1986; Murinde and Eng, 1994a, 1994b; Lyons and Murinde, 1994; Demetriades and Hussein, 1996; Akinboade, 1998, Kar, Nazlıoğlu and Ağır, 2011).

The literature has shifted from the role of financial sector on economic development to the determinants of financial development in the early 2000s (Ağır, 2010). It is argued that trade liberalization (Rajan and Zingales, 2003), capital account liberalization (Chinn and Ito, 2002, 2006; Huang, 2006; Law and Demetriades, 2006; Klein and Olivei, 2008), institutional factors and social capital (Acemoglu, Johnson and Robinson, 2004; Arestis and Demetriades, 1999; Guiso, Sapienza and Zingales, 2000; Garretsen, Lensink ve Sterken, 2004; Rioja and Valev, 2004; Demetriades and Law, 2006; Ito, 2006; Chinn and Ito, 2006; Baltagi, Demetriades and Law, 2007), ownership structure of the banking sector (La Porta, Lopez-de-Silanes and Shleifer, 2002; Demetriades, Girma and Xu, 2007; Andrianova, Demetriades and Shortland, 2008; Demetriades, 2008), effective regulatory and supervisory structure (Diamond and Dybvig, 1983; Gorton, 1988; Ncube and Senbet, 1997; Brownbridge Kirkpatrick and Maimbo, 2005; Barth, Caprio and Leive, 2001; Quintyn and Taylor, 2002; Cuadro, Gallego and Herrero, 2003), deposit insurance (Diamond ve Dybvig, 1983; Garcia, 2000; Demirgüç-Kunt and Sobacı, 2001; Demirgüç-Kunt and Detragiache, 2002; Cull, Senbet and Sorge, 2005), compulsory reserve requirement (Di Giorgio, 1999; Bental ve Eden, 2002; Ang, 2007), origins and nature of the legal structure (Beck, Demirgüç-Kunt and Levine, 2001a, 2001b; Mayer and Sussman, 2001; De Haas, 2004), macroeconomic conditions, particularly inflation (Haslag and Koo, 1999; Boyd, Levine and Smith, 2001;

Cuadro, Gallego and Herrero, 2003; Zoli, 2007; Dehasa, Druck and Plekhanoc, 2007; Bittencourt, 2008), fiscal policy (Beaugrand, Boileau and Montfort, 2002; Montiel, 2003; Hauner, 2006), privatization (Perotti and Van Oijen, 2001; Bortolotti et.al, 2007; Boubakri and Hamza, 2007, Ben Naceur, Boubakri and Ghazouani, 2008) have been suggested as main possible determinants of financial development.

This very brief review of the literature shows that existing researches neglect to empirically investigate the role of financial development on entrepreneurship. Recently a limited number of the researches started to pay attention to this gap and tried to examine this issue (Acs and Armington, 2004; Bianchi, 2010; Carree et.al, 2002; Carree and Thurik, 2003; GEM, 2000; OECD, 2011; Reynolds et.al, 2000).

The aim of this paper, therefore, is to econometrically investigate the impact of financial factors, in addition to institutional and macroeconomic conditions, on entrepreneurship for seventeen emerging economies by employing the tools of panel econometrics. This paper differentiates from the previous existing studies in terms of the sample and methodology.

2. Determinants of Entrepreneurship

Ample studies underline that entrepreneurship is not only a static concept as a factor of production but also a dynamic concept and it, therefore, should be taken as a process. Entrepreneur is the one who develops and evaluates new opportunities by overcoming the difficulties standing against creating new products (Fogel et. al., 2006). The process of entrepreneurship can be subdivided into four distinct phases. These are identification and evaluation of the opportunity, establishment of the business plan, determination of the required resources, and management of the resulting enterprise (Hisrich et. al., 2005).

Carree and Thurik (2002) aims to define the functions of entrepreneurship in the light of the explanations offered by Schumpeter (1934), Kirzner (1997) and Knight (1971). Schumpeter, as an economist, emphasizes exclusively on the notion of creativity and argues that "everyone is an entrepreneur when he actually carries out new combinations". The expression of "new combinations" suggests discovering the new methods to meet the current demands or creating new products in the current technology and production patterns (Thurik and Wennekers, 2001: 2; UNCTAD, 2004: 4). Schumpeter considers innovation, which is the fundamental part of entrepreneurship, as the main source of economic development (Thurik and Wennekers, 2001: 2). As Kirzner (1997) put emphasis on perceiving of profit-making opportunities as a crucial feature in his definition of entrepreneur, Knight (1971) defines the entrepreneur who is capable of making profits by taking risks in uncertain business environments (Carree and Thurik, 2002: 8; UNCTAD, 2004: 4). In short, entrepreneurs not only seek for and identify profitable opportunities but also keen to take risks in economically beneficial activities (OECD, 1998: 11). Hence it would not be

wrong to argue that identifying and choosing the right business opportunities among several other options is the main feature of successful entrepreneurs.

According to GEM (2002) report, while two thirds of the active entrepreneurs carry out business opportunities voluntarily, the resting one third involves in entrepreneurial activities because of the lack of vocational opportunities. As the first group called as opportunity-motivated entrepreneurs are general found in developed countries, the second group known as necessity-motivated entrepreneurs makes up the half of entrepreneurs in the developing countries (GEM, 2002: 6).

To sum up, many policymakers and academicians argue that entrepreneurship is crucial for economic development and social welfare. Entrepreneurs do not only create new employment possibilities but also accelerate the structural change of the economy. Given the fact that entrepreneurship is a factor that increases competition in the market, it can also be argued that entrepreneurship plays the role of catalyst for economic growth and country competitiveness (GEM, 2010: 12). Major factors that determine entrepreneurship can be put forward as follows: Financial factors, institutional factors, and economic and framework condition.

2.1. Financial Factors

By all means, financial factors are pivotal particularly in the initial phases of entrepreneurship. Lack of financial sources has been cited as one of the main obstacles for an entrepreneur (Reynolds et. al., 2000: 24). According to report of GEM (2000), 20% of entrepreneurs mark the lack of financial sources as the main impediment in the way of entrepreneurship. Financial systems are tools to invest the most productive projects among different enterprises (King and Levine, 1993: 515). In this line whereas OECD (2011) and OECD/EUROSTAT (2008) made a similar case on the importance of access to finance and development in financial system, Bianchi (2010) emphasizes the significance of accessibility to credit opportunities for entrepreneurship. Klapper et. al. (2004) and Baliamoune et. al. (2011), similarly, point out that private and commercial credits are pivotal for the entrance to market and that the lack of those credit opportunities is the major setback standing against the establishment of new businesses.

According to OECD (2011), the mixture of investment opportunities, entrepreneurial capacity and financial sources do not necessarily lead to entrepreneurship if opportunity cost and start-up cost are higher than potential benefit of the investment. GEM (2000) contributes this finding by arguing that entrepreneurial opportunity, entrepreneurial capacity and access to financial sources are the major factors for the entrepreneurship. Thus regulatory framework including taxes and other public and institutional rules do have a massive impact on entrepreneurship under scant financial sources.

To sum up, Desai, Gompers and Maksimovic (2003) and Klapper, Laeven and Rajan (2004) contend that access to financial sources including market regulation and financial opportunities shapes business environment in the economy. This complements Bastie, Cieply and Cussy (2013), Bianchi (2010), GEM (1999), King and Levine (1993b), Reynolds et. al. (2000), UNCTAD (2004)'s findings which regards access to financial sources and financial development as the main factors of the entrepreneurship.

2.2. Institutional Factors

Baumol (1990), based on North (1990)'s nexus between institutional factors and economic performance, argues that entrepreneurs help to create new profit-making opportunities and to allocate sources by means of institutional structure. Sobel (2008) contends that an institutional structure which allows for property rights, fair judicial system, contract enforcement and constraints on taxes and regulations of governments aiming to transferring wealth encourages entrepreneurship and economic development.

According to OECD (1998) societal structure, trust between individuals and people's willingness for cooperation has a serious impact on the success of entrepreneurship (OECD, 1998: 13). In their study that focuses on the influence of entry regulations on entrepreneurship, Klapper, Laeven and Rajan (2004) identify that entry regulations have no solid impact on entrepreneurship on countries with high level of corruption. However entry regulations have a strong effect on entrepreneurship in corruption free countries. Blackburn and Sarmah (2006), argue that whereas both red tape and corruption have a negative impact on entrepreneurship, corruption's impact only targets financial markets.

2.3. Economic Conditions

Global Entrepreneurship Monitor's report launched in 1999 underlines that entrepreneurship level of each country differs to a great extent. This variety does not stem only entrepreneurial opportunity and entrepreneurial capacity but also factors such as infrastructure, demography, education and culture (GEM, 1999: 19).Reynolds et. al. (2000) argue that demographic factors which encourage individuals to be an entrepreneur are increase in population , employment to population ratio, employment by gender, the ratio of 25-44 year age as the most active group of entrepreneur and inner immigration. Increase in the population leading to demands in services and commodities also give a way to new businesses opportunities for entrepreneurs. GEM (2000) report interferes that men double the women in terms of entrepreneurship and most of those are between the age of 25 and 44. GEM (1999) report, on the other hand, emphasizes that there is strong linkage between the education level and entrepreneurship (Reynolds et. al., 2000: 17-21).

In addition, entrepreneurs would turn into rent-seeking individuals in economies lack of structural programs and instability (OECD, 1998: 12-15). According to GEM (2000) report, framework condition that affect entrepreneurship accounts for the economic conditions in which entrepreneurial activities take place. In an environment where there is a stable economy with a steady rate of inflation, entrepreneurs would obtain the full information about the demands and prices and thereby they can make well directed decisions about their investments. McMillan and Woodruff (2002) also emphasizes that uncertainties stemming from macroeconomic instability might curb entrepreneurship because of its negative effect on long term contracts. From a different point of view, Reynolds et. al.(2000) argue that reducing the share of government in economy and the tax burden of companies and individuals will have positive impact on entrepreneurship.

3. Data and Sources

In this study, a panel data estimation method is used to test the relationship between financial development, institutional factors and economic conditions on entrepreneurship. Our sample includes 17 emerging market economies for the period of 2004-2009. Countries included in the sample are Brazil, Chile, Czech Republic, Egypt, Hungary, India, Indonesia, Malaysia, Mexico, Morocco, Peru, Philippines, Poland, Russia, South Africa, Thailand and Turkey.

All data are annual and data used for entrepreneurship, credit to private sector, economic factors (inflation, per capita GDP) and control of corruption retrieved from World Bank World Development Indicators, World Governance Indicators Online Database. The data for political stability and Corruption Perception Index, as other institutional factors, are retrieved from International Country Risk Guide and Transparency International Website, respectively. Another variable capitalization ratio is obtained from Beck and Demirguc-Kunt (2009).

The model specification will be estimated are as follow:

$$ENT_{it} = \alpha_0 + \alpha_1 FINDEV_{it} + \alpha_2 INSQUA_{it} + \alpha_3 GDPPC_{it} + \alpha_4 INF_{it} + u_{it}$$

$$u_{it} = \mu_i + \lambda_t + v_{it}$$

Where i denotes the each emerging market economies (i=1, 2, 3,…, 17) and t denotes the time period (t=2004-2009). In the equation, μ_i is the unobservable individual effect, λ_t is unobservable time effect and v_{it} denotes the error term.

The variables used in the equation are as follows:

ENT_{it} is the entrepreneurship indicator which is proxied by "new business density". This variable is explained by new business registrations per thousand people between the ages of 15 and 64. This data retrieved from World Bank World Development Indicator Database.

$FINDEV_{it}$ represents the financial factors related to financial development of banks and stock markets. King and Levine (1993), Levine (1992), and Levine and Zervos (1998), argue that the ratio of private sector credits to GDP is a plausible indicator that accounts for developments in the banking sector. For this purpose, the private sector credit is defined as bank credit to private sector as a share of GDP is selected as first financial development indicator. Demirguc-Kunt and Levine (1996), Demirguc-Kunt and Maksimovic (1996) and Levine and Zervos (1996) suggested that the size of stock market is positively associated with the capital mobilization and risk diversification and encourages the high return projects as well as entrepreneurship, and it is a good indicator for financial development. Therefore the ratio of market capitalization which measures the size of stock market is utilized as the second financial development indicator. It is expected both of the coefficients of financial development indicators to be positive.

$INSQUA_{it}$ captures institutional quality. Roe and Siegel (2011) and Dutta, Sobey and Roy (2012) emphasize that the existence of corruption and political instability are substantial threat for the resident and foreign entrepreneurs. Corruption and political stability account for institutional quality in this study. Corruption Perception index released by Transparency International ranges from 0 to 10 and low scores indicate serious corruption problem. Control of corruption as a second indicator for corruption, retrieved from World Bank World Governance Indicators is scaled from zero to one and higher values indicate better conditions. Political stability (or alternatively low political risk) series obtained from International Country Risk Guide ranges from 0 to 100 and higher values denote more stability. In this study, it is expected that the effects of institutional quality variables on the entrepreneurship to be positive.

$GDPPC_{it}$ measures per capita GDP. Carree et al. (2007), Dutta, Sobey and Roy (2012) and Wennekers and Thurik (1999) investigated the impact of economic performance on entrepreneurship and suggested that increase in the per capita income is expected to drive entrepreneurship. It is expected that the coefficient of per capita income has positive sign since a high level of per capita income supports the entrepreneurial activity.

INF_{it} denotes inflation rate as a key indicator for macroeconomic condition. Beck and Levine (2004), Bekaert, Harvey and Lundblad (2001), Edison et. al.(2002), Levine and Zervos (1998) argue that there is a higher risk of crisis for the countries that render inapt macroeconomic policies and underline that inflation might be taken as a proxy for price stability in econometric models. This study expects that the coefficient on the inflation to be negative.

4. Methodology

A panel data regression differs from regular time-series or cross-section regressions in that it has two dimensions. Combining cross-section and time series, panel data

methodology enriches the econometric analysis by enlarging the sample size and allowing for heterogeneity by considering individual-specific variables.

$$Y_{it} = \alpha + \beta X'_{it} + u_{it} \tag{1}$$

i = 1, 2, 3,…., N

t = 1, 2, . . . ,T

where i denote the ith cross-sectional unit and t for the tth time period. Correspondingly, i is called as the cross-section identifier and t the time identifier. As cross-sectional units and time series observations are equal, panel data is called a balanced panel. Otherwise, it is denominated as an unbalanced panel (Gujarati, 2004: 640).

In the panel data applications, error component model is mostly used for the disturbances.

$$u_{it} = \mu_i + \lambda_t + v_{it} \tag{2}$$

In the equation, μ_i is time invariant parameter and represents the unobservable individual-specific effects, λ_t unobservable time effects. These two parameters take individual-specific effects and time effects into account, which is not included in the regression. v_{it} is a parameter which varies between individuals and over time and it can be called as the usual disturbance in the regression (Baltagi, 2005: 11).

The estimations of panel data models are employed using fixed effect or random effect methods. The fundamental difference between fixed and random effect models arises from the role of dummy variables. While, dummy variables are part of the intercept in the fixed effect model, dummy variables are in the disturbance term in the random effect models (Park, 2009).

In the fixed effect models by assuming constant error and slopes in the units and time, differences in the intercept coefficients in unit and time are investigated. Since individual specific components are taken into account in the intercept in the fixed effect model, they are not uncorrelated with the explanatory variables. Fixed effect models use least squares dummy variable (LSDV) to consider the effects of omitted variables that are specific to individual units or time and that remain constant over time. In addition, fixed effect models also use within effect estimation methods (Baltagi, 2005; Gujarati, 2004; Hsiao, 2003: 30).

Random effect model assumes that the intercept of each individual unit is random and constant intercept and slopes in the units and time and individual differences arises from error term (Hsiao, 2003: 34). If μ_i and v_{it} are random variables with zero means and constant variances σ_μ^2 and σ_v^2 , this model is known as the random effects model. The random effects model can be estimated by GLS which can be obtained using a least

squares regression. The random effects model is more suitable when the random intercept of each cross-sectional unit is uncorrelated with the explanatory variables. Thus individual effects are termed as additional random disturbances (Baum, 2006: 220; Gujarati, 2004: 652).

While fixed effects are tested by the F test, Breusch and Pagan (1980) developed a test for random effect model based on least squares residuals which called Lagrange multiplier test. In this test, the null hypothesis $H_0: \sigma_\mu^2 = 0$ assumes no individual random effect. Alternative hypothesis $H_1: \sigma_\mu^2 \neq 0$ allows two-sided distribution although the variance components are non-negative. Under the null hypothesis of no random individual effects, LM test has χ2 distribution (McKenzie, 1999).

$$LM_{group} = \frac{NT}{2(T-1)} \left[1 - \frac{u'(I_N \otimes J_T)u^2}{u'u} \right] \sim \chi2 \tag{3}$$

$$LM_{time} = \frac{NT}{2(T-1)} \left[1 - \frac{u'(J_N \otimes I_T)u^2}{u'u} \right] \sim \chi2 \tag{4}$$

$$LM = LM_{group} + LM_{time} \sim \chi2 \tag{5}$$

A one-sided version of this test is developed by Honda (1985). Although Honda (1985) does not develop the one-sided test for null hypothesis, proposes a simple test for $H_1: \sigma_\mu^2 > 0$ which is more appropriate alternative hypothesis. This test also suggests a one-sided test which is distributed as N(0,1)(Baltagi, 1998).

$$Honda_{group} = \sqrt{LM_{group}} \sim N(0,1) \tag{6}$$

$$Honda_{time} = \sqrt{LM_{time}} \sim N(0,1) \tag{7}$$

$$Honda = \frac{1}{2} \left[\sqrt{LM_{time}} + \sqrt{LM_{group}} \right] \sim N(0,1) \tag{8}$$

The most commonly used formal test that will help to choose between fixed effect and random effect is Hausman specification test. The estimation coefficient vectors of fixed and random effect models are compared in Hausman specification test. In the Equation 9, $\hat{\hat{\delta}}_{RE}$ denotes the vector of random effects estimates without the coefficients on time-constant variables or aggregate time variables and $\hat{\hat{\delta}}_{FE}$ denotes the corresponding fixed effect estimates (Wooldridge, 2001: 289). This test statistics has asymtotic χ2 distribution. Hausman statistics can be computed as follows:

$$H = \left(\hat{\hat{\delta}}_{FE} - \hat{\hat{\delta}}_{RE} \right)' \left[var(\hat{\hat{\delta}}_{FE}) - var(\hat{\hat{\delta}}_{RE}) \right]^{-1} \left(\hat{\hat{\delta}}_{FE} - \hat{\hat{\delta}}_{RE} \right) \tag{9}$$

While the fixed effect estimator is consistent under the null and alternative hypothesis, the random effect estimator is efficient and consistent under null hypothesis and inconsistent under alternative hypothesis. If null hypothesis is accepted, it is decided that individual specific effects are uncorrelated to explanatory variables and random

effect model is more appropriate model than fixed effect model (Greene, 2007; Hsiao, 2003).

5. Estimation Results

In order to determine a model in the panel analysis, Hausman (1978) test is employed to compare the coefficient estimates of fixed and random effect models. After the estimation of models by using pooled model, Hausman test statistics were used to decide which model to be chosen. While high Hausman Chi-square statistics and low probability value suggest that fixed effects model, the low Hausman Chi-square statistics and high probability value favors random effects models. LM and Honda test statistics and Hausman test results are reported in Table 1

Tablo 1. LM, Honda and Test Statistics.

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Hausman Test Statistics	3.451	1.409	0.707	2.341	1.573	0.665
	(0.63)	(0.92)	(0.98)	(0.80)	(0.90)	(0.98)
Group effect random LM test	212.4	219.06	223.5	214.8	219.3	224.1
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Time effect random LM test	2.896	2.896	3.020	2.967	2.967	3.021
	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)
Two-way random LM test	215.3	221.9	226.5	217.7	222.3	227.2
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Group effect random Honda test	14.57	14.80	14.95	14.65	14.81	14.97
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Time effect random Honda test	1.701	1.701	1.737	1.722	1.722	1.738
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Two-way random Honda test	8.139	8.251	8.345	8.189	8.266	8.355
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Autocorrelation Test	247.8	253.02	257.1	260.24	264.5	267.9
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Heteroskedasticity LM Test	57.43	66.47	73.32	61.77	63.07	67.06
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)

Note: p values are given in the parentheses.

The Hausman test statistics in the Table 1 confirm that individual random effects and explanatory variables are uncorrelated and random effect model is consistent and

efficient. According to LM and Honda test statistics, random individual group and time effects are significant at 1 % significance level. While LM_{group} and $Honda_{group}$ statistics confirm that individual group effects are significant in all models, LM_{time} and $Honda_{time}$ statistics state that time effects are not significant at 1%. These results verify that one-way random effect model which considers individual group effect is the appropriate panel data estimator for each of the models.

After testing the assumption of homoscedasticity based on the results in Table 1, it is asserted that there is a heteroskedasticity problem. According to autocorrelation test results, the null hypothesis postulated no serial correlation is rejected. Therefore, all models estimated under the heteroskedasticity and autocorrelation problem were fixed by using PCSE (Panel Corrected Standart Errors) correction developed by Beck and Katz (1995). Corrected models were reported below in Table 2.

Table 2: One-way Random Effect Model Estimations

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Credit/GDP	0.262***	0.215**	0.264***			
	(0.079)	(0.101)	(0.075)			
Capitalization Ratio				0.283**	0.270**	0.278**
				(0.124)	(0.127)	(0.126)
Control of Corruption	0.447			0.475		
	(0.330)			(0.397)		
Corruption Perception Index		0.246			0.285	
		(0.291)			(0.397)	
Political Stability			0.448			0.235
			(0.376)			(0.836)
Per capita GDP	1.280***	1.307***	1.326***	1.081***	1.088***	1.152***
	(0.269)	(0.292)	(0.275)	(0.287)	(0.301)	(0.277)
Inflation	-0.402*	-0.470**	-0.447**	-0.889**	-0.955**	-0.955**
	(0.225)	(0.221)	(0.226)	(0.466)	(0.474)	(0.486)
C	-9.79***	-9.559***	-11.58***	-4.809*	-4.645*	-5.779
	(1.833)	(1.921)	(2.214)	(2.831)	(2.873)	(4.479)
Observation	102	102	102	102	102	102

Note: Numbers in parentheses are the standard errors.

*, **, *** indicate that test statistic is statistically significant at 10%, 5%, 1%, respectively.

These results in the Table 2 support a positive and statistically significant relationship between financial development and entrepreneurship for two different financial development indicators. These findings indicate that development in banking system and stock markets are positively associated with the entrepreneurship. As far as economic factors concerned, GDP per capita has a positive effect on entrepreneurship at 1 percent level of significance. Moreover inflation employed as a proxy for price movements in the economy has a negative sign as it was expected and significant in all models. This shows that good macroeconomic condition, in which price movements are stable, is a crucial factor for entrepreneurs. However, variables for institutional quality have no statistical significance as expected. Although having a positive sign, indicators of control of corruption is statistically insignificant. Similarly, political stability is not a significant variable whereas it has a positive sign.

6. Conclusion

This paper investigates the effects of financial factors and other control variables including institutional factors(control of corruption and political stability) and economic conditions (per capita GDP and inflation) on entrepreneurship in 17 emerging market economies over the period 2004-2009 using panel data estimation method. Entrepreneurship is proxied by new registrations per thousand people between the ages of 15 and 64. The results of random effect model suggest that improvements in financial system will promote the entrepreneurial activity. Banking system development and stock market development are positively associated with the entrepreneurship. The level of per capita income also affects entrepreneurship positively since high level of income increase the creation of new investment opportunities for potential entrepreneurs. According to results, it can be argued that higher inflation can reduce entrepreneurial activity through its adverse effects on macroeconomic uncertainty and the expectations of entrepreneurs about future. Although institutional factors (control of corruption and political stability) have positive effect on entrepreneurship as expected, they do not have statistical significance at all.

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