THE EFFECT OF ENTREPRENEURIAL ACTIVITY ON ECONOMIC GROWTH: NASCENT EVIDENCE

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Serdar KURT
Assoc. Prof., Canakkale Onsekiz Mart University
FEAS, Department of Econometrics
skurt@comu.edu.tr

Mesut SAVRUL
Assist. Prof., Canakkale Onsekiz Mart University
FEAS, Department of Econometrics
msavrul@comu.edu.tr

ABSTRACT

It has been perceived for a long time that the entrepreneurial function is an essential element in economic growth process through employment, innovation and welfare effects. Due to lack of capital accumulation, qualified human resources and social and political substructure the emphasis given on entrepreneurship has been coming forward more and more since 1980's in developing countries.

Regarding the increasing importance given to entrepreneurial activities all over the world, this paper examines if entrepreneurial activity affects GDP growth using a sample of 24 countries. The data is collected from GEM data of Global Entrepreneurship Research Association and national accounts data of World Bank. As a recognized indicator of entrepreneurial activity, Nascent data is used as an intermediate variable in the analyses of the study and the results of the study has shown that although Nascent entrepreneurial activity isn't effective on economic growth in short term, it is supporting growth in the longer periods.

Keywords: Entrepreneurship, Economic Growth, Nascent Index

GİRİŞİMCİLİK FAALİYETLERİNİN EKONOMIK BÜYÜME ÜZERİNDEKİ ETKİSİ: NASCENT ÖRNEĞİ

ÖZET

Girişimciliğin istihdam, yenilikçilik ve refah etkileri yoluyla ekonomik büyüme sürecinin vazgeçilmez bir unsuru olduğu uzun zamandan beri dikkat çekmektedir. Sermaye birikimi, nitelikli insan kaynağı ve sosyal ve politik altyapıdaki eksikliklerden dolayı, girişimciliğe verilen önem 1980'lerden bu yana gelişmekte olan ülkelerde giderek daha fazla öne çıkmaktadır.

Tüm dünyada girişimcilik faaliyetlerine verilen önemin artmasına bağlı olarak bu çalışmada, 24 ülkenin verileri örnek alınarak girişimcilik faaliyetinin GSYH büyümesini etkileyip etkilemediği incelenmektedir. Veriler, Global

Entrepreneurship Research Association GEM verileri ve Dünya Bankası'nın ulusal hesap verilerinden elde edilmiştir. Girişimcilik faaliyetinin tanınmış bir göstergesi olan Nascent İndeksi, çalışmanın analizlerinde ara değişken olarak kullanılmış ve çalışma sonuçları, Nascent girişimciliğinin kısa vadede ekonomik büyüme üzerinde etkili olmamasına rağmen daha uzun vadede büyümeyi desteklediğini göstermiştir.
Anahtar Kelimeler: Girişimcilik, Ekonomik Büyüme, Nascent İndeksi

INTRODUCTION

Economic growth is one of the leading topics in both economic research and economic policy making. In Europe, the concern towards economic growth is expanding in the perspective of high unemployment rates. Historically high rates of economic growth was seen in most countries of the OECD in the first decades after Second World War. A stage of stagflation, characterized by a combination of inflation and slow growth emerged following the first oil crisis in 1973. In many Western countries, political and academic concern turned to matters of income equality and demand management, since the interest in the reasons of economic growth lessen in the 1960s and 1970s.

Economic growth is explained through exogenous technological change and accumulation of production factors by the Neo-classical theory. Prevailing economics didn't show any sizable attraction towards the reasons underlying technological development and long-term factor accumulation. However high unemployment and stagflation of 1980s revived the interest supply side economics and the factors underlying which caused entrepreneurship and small business phenomenon to be spotlighted in the following phase (Wennekers and Thurik, 1999: 27).

Schumpeter (1934) asserted entrepreneur's role as the major cause of economic growth. He argues that the innovation efforts of entrepreneur forces the enterprises to introduce new inventions which make present products and technologies obsolete (Stel et.al, 2005: 313). Later periods witnessed the attempts to examine the significance of the effect of entrepreneurship on economic performance, particularly at enterprise and industry level, empirically. Nevertheless, country level contributions are quite restricted (Stel et.al, 2005: 312).

Accordingly, this study focuses on the direct effects of entrepreneurial activities on economic growth. The study is consist of four sections. The first part defines Nascent Entrepreneurship. In the second part the role of entrepreneurial activities on economic growth is dealt within the framework of evolution of economic theory. In the third part the former studies dealing with the effect of entrepreneurship on economic growth is reviewed to determine an appropriate model for the study. And in the following section the mentioned relation is analyzed empirically using product per capita, gross capital formation, labour force and Nascent entrepreneurial activity data of 24 countries covering 2006-2015 period.

1. NASCENT ENTREPRENEURSHIP

Entrepreneurship is usually outlined in sense of creation of a new enterprise. Creation of new enterprise is a subject which encourage research and debate among practitioners and academics. As a well accepted indicator of this process, Nascent entrepreneurship inquiry seeks to discover the environmental and individual characteristics of the people who plans to be an entrepreneur or the ones succeeded or failed in this role before. It also focuses on the fact that pattern is a process which cover a list of decisions instead of a single judgement taken at a specific point in time (Johnson et.al, 2006: 1;3).

The creation of a new enterprise is a mechanism which we can divide into conception, gestation, infancy and adolescence tags. When one or more individual start to commit resources and time to establishing a new firm, the first change starts. In this context numerous synonyms for the Nascent Entrepreneurship term can be counted such as constructing, founding, start-up, gestation, pre-launch, pre-organization and organizational emergence. These concepts usually have process-related or organizational implications and the process of start-up always need the action of at least one individual. Respectively, a nascent entrepreneur can be defined as an individual who introduce serious actions which are destined to culminate in a feasible enterprise start-up (Howard, 1999).

The dominant debate of the GEM model is closely related with the national economic growth with a role of two parallel sets of pursuits which are combined with the firms already established and

the ones directly related to the entrepreneurial process. Only a small proportion of the story behind variations in economic growth can be explained with the activities among the established firms but this entrepreneurial process may also give reason for the variances in economic prosperity among countries (Bygrave, 2003: 103).

If we dealt the topic in a broader meaning, it can be seen that three stylized facts has shaped the world of entrepreneurship policy (Hessels et.al, 2008: 323);

- First, economic growth is enhanced by entrepreneurship. However, entrepreneurship doesn't encourage economic growth all the time. The entrepreneurial activity by nascent entrepreneurs is positively related with the economic growth only for the countries which have a high level of per capita income.

- Second, while most individuals involved in new enterprise creation don't have a growth goal, the firms with high-growth usually provide more to economic growth than the new or small enterprises.

- Third, excess policy measures encourage the entrepreneurship activities and establishment of small businesses.

Within the framework of this study the first item covering the impact of entrepreneurship on economic growth will be the interest of next section.

2. THE ROLE OF ENTREPRENEURIAL ACTIVITY IN ECONOMIC GROWTH

Until the late 1980s, labour and capital are the vital input factors of large scale production which governed modern developed economies of the business world. The increases in transaction costs level occurred due to large scale production imposed an increasing firm size in time. This went together with the anticipated development of acquisition of resources, consumer preferences and technology. Actually, in this period, the raising role of large firms

in the economy is pointed out by statistical proof. The process towards large scale activities are evident in most modern developed countries and the significance of small business and self-employment appeared to be losing its importance in this period. Despite its being accepted that the protection of small business sector is vital for both political and social reasons (Thurik, 2009).

Most of the firms usually select growth as a goal. Beside its being a famous topic in media, it is also regarded as a scope of entrepreneurial success. Nevertheless some of the enterprises don't choose growth as a goal. The U.S. example shows that many of the enterprises in the country grow slowly so they form the economic core. However in most cases it is recognized that growth may be necessary for sustaining survival. The recent literature shows that the role of entrepreneurship is widely accepted in enterprise level however until now only a few researches exist on explaining the differences shaping entrepreneurial motivations by ethnicity or race (Edelman et.al, 2010: 174-175). Same interpretation is also valid for in sense of economies too. The rate of entrepreneurship, many aspects of which is measured in GEM model, varies greatly across countries. Furthermore, the percentage of young or nascent or entrepreneurs differs heavily across countries (Freytag and Thurik, 2007: 120) Which bring the country level effects of entrepreneurial activities to the agenda.

The more recent studies in the subject try to explain the roles of entrepreneurial activities on firm success by embracing country specific variables. It is argued that beside profit expectations, favourable economic conditions such as high innovative potential and economic growth may trigger new enterprise formation. On the other hand exogenous and endogenous barriers to entry form a hindrance (Santarelli and Vivarelli, 2007: 459). In this way entrepreneurship is linked with a country level economy and the entrepreneurial function is accepted as an important element of economic growth process. This view is empirically supported by the latest experiences and studies some of which on production nature suggest that on its own, increase in the labour force can explain only a small part of the historical growth of an economy's output (Baumol, 1968:65).

In this scope, economists accepted the gap-filling and input-completing competency of entrepreneurial activities in growth and innovation and the critical addition of growth and innovation to prosperity economic welfare and in recent years. Accordingly, while

most of the developing economies such as China, India, Russia and Brazil are in the efficiency-driven stage, most of the developed countries are in the innovation-driven stage. Beside the variances in the nature of competition across periods, the variances in the grade of integration of countries into the world economy also exist. Especially because competitive advantage is provided by innovation in foreign markets, it is clear that developed economies integrated globally better and they likely to have higher levels of export-oriented entrepreneurship than the developing ones. To be able to move into the innovation-driven stage, the economies need to establish an environment helpful to entrepreneurial activities. The economies such as Taiwan, Israel, Ireland and Korea are the examples which succeed this practice before (Acs, 2008: 221).

Although the examples given so far are all favourable, the relationship between economic growth and entrepreneurship also carries an ambiguity. It is assumed that the level of economic development and the changes in the level of entrepreneurship are interrelated with a two-way causation. A Schumpeterian model offers growth effect of entrepreneurship is in use in developing countries in many cases. However, in countries where social security schemes aren't generous so much, shopkeeper or refugee effect of low growth rates inspiring self-employment which constitute the reverse relationship such as the one between unemployment and entrepreneurship (Thurik and Wennekers, 2004: 146). Based on this ambiguity, it is meaningful to analyse the effect of entrepreneurial activities on economic growth. While Nascent is used as a recognized indicator of entrepreneurial activity, it will be beneficial to take a glance at the current literature on the topic to determine the appropriate model for the study.

3. LITERATURE REVIEW

Using the data of 29 economies took part in the Global Entrepreneurship Monitor (GEM) study of 2001 Bygrave et.al. (2003) investigated the impact of informal investment. They classified investment by amount invested, age of investor and gender. They combined the data of 29 economies in their analyses. The results of their study show that in a subset of 18 GEM participant economy, predominance of entrepreneurship was correlated with perception of start-up opportunities, entrepreneurial capacity and informal investment. On the contrary necessity-push

entrepreneurship and the same mentioned variables had no significant correlation.

In their study Wennekers et.al. (2005) investigated the relationship between the rate of nascent entrepreneurship and the level of economic development. They used data for 36 economies in their analyses and tested the relationship in the context of three approaches of the description of nascent entrepreneurship across countries. The results of their study has shown that the laws related to the level of economic development influence the natural rate of entrepreneurship.

Stel et.al. (2005) investigated whether entrepreneurial activity have an influence on growth of GDP. In the study if this influence depends on the level of economic development measured as GDP per capita is analysed using a sample data belong to 36 countries. The results of the study indicate that entrepreneurial activity by nascent entrepreneurs is effective on economic growth however this effect is bound to the level of per capita income of the host country. This result implies that the role entrepreneurship played varies depending upon the economic development of the country.

Freytag and Thurik (2007) analysed the relationship between institutional variables and cross-country variances in the preferences for self-employment. In the analysis of the study they worked with the data of U.S. and 25 countries of EU. The results of the study presented that although entrepreneurship can be made clear with country specific variables, they can't explain actual entrepreneurship

Using an individual level survey data collected for GEM Project in 2002, Minniti and Nardone (2007) conducted an analysis to determine the implications and causes and of entrepreneurial behaviour across countries. In their analyses they used a data sample for 37 economies and a distinctive bootstrapping form which helps to equalize the conditions of the individuals. The results of the study concluded that gender is not effective on entrepreneurial behaviour and the selections of women and men yield to same socio-economic circumstances and economic environments.

Verheul and Stel (2007) tested the effect of entrepreneurial diversity on national economic growth. They handled the mentioned diversity by exploring if the impact on growth depend on socio-demographic variety in entrepreneurship. For their analysis they collected the data of 36 countries from GEM database. The finding of the study showed that because in less developed countries the significant portion of the entrepreneurs who encourage economic growth is formed by older and higher educated individuals. On the

other hand in developed countries younger entrepreneurs are more crucial.

In their study, Kessler and Frank (2009) are interested in the factors which are determinative in the decision to start an enterprise. They used Nascent data of 290 nascent entrepreneurs in Austria covering 1998-2001 period for their analysis which they based on a longitudinal study. They performed a binary logistic regression for testing the data and the results of their analysis presented that the aim of a full-time start-up, cohabitation, organizational efforts and entrepreneurial experience are the most significant predictors of starting up a new business.

4. MODEL

The study intends to analyse both the time dimension and cross-sectional dimensions of various countries. Due to the presence of time and cross-sectional dimensions of the data set covered in the study, use of panel regression analysis is found eligible.

4.1. DATA SET

The study covers gross domestic product per capita (constant 2005 US$), gross capital formation (constant 2005 US$), labour force (total) and Nascent entrepreneurial activity data covering 2006-2015 period. Nascent variable is collected from Global Entrepreneurship Research Association database. The country selection is based upon the countries included in Global Entrepreneurship Research Association database. The countries with missing data is excluded from the analysis and tests are performed on the data of 24 countries. The variables of the study are symbolised as GDP (2005=100) being GDP; labour being LAB, gross fixed capital (2005=100) being GFC and nascent entrepreneurial activity being as NASCENT. The reel variables are used in the analysis, the L value of the variables show their logarithm is taken and the D shows their difference is taken.

4.2. METHOD

Because they have time dimension, firstly the stationarity of the data should be examined in time series and panel data analyses. Stationarity tests are divided into two groups as the first generation and second generation stationarity tests. First generation tests don't take cross-section dependence between cross sections into account but second generation tests do. The variables has been

tested with Cross-Section Dependence Tests and the results of the tests have shown cross section dependency between cross section of variables as seen in Table 1 below. Therefore, in this study the stationarity of variables is tested with Peseran (2007) which takes cross section dependency into account.

Table 1: Cross-Section Dependence Test

	LGDP	LGFC	LLAB	LNASCENT
Breusch-Pagan LM	1008.482[a]	1032.703[a]	1627.687[a]	519.8874[a]
Pesaran Scaled LM	30.15501[a]	31.18590[a]	56.51013[a]	9.359030[a]
Bias-Corrected Scaled LM	28.82168[a]	29.85257[a]	55.17680[a]	8.025697[a]
Pesaran CD	11.38343[a]	8.171805[a]	12.25820[a]	9.103163[a]
a indicates significancy at 1% level of significance (Null hypothesis: No cross-section dependence (correlation))				

The test results of Peseran (2007) are listed below. The lag length is determined by the Modified Akaike Information Criteria. Accordingly, LLAB is stationary in I(0) at 1% level of significance. When the difference of the variables are taken, all variables were found to be stationary in I(1) at least 5% level of significance.

Table 2: Pesaran (2007) Unit Root Test

Variables	Without Trend	With Trend
LGDP	2.372 (1)	3.917 (0)
LGFC	1.088 (0)	-0.848 (1)
LLAB	-3.350 (1)[a]	-0.710 (1)
LNASCENT	-1.397 (1)	-0.321 (0)
DLGDP	-1.987 (1)[b]	-0.917 (0)
DLGFC	-1.868 (1)[b]	-0.498 (0)
DLLAB	-2.085 (1)[b]	-3.041 (0)[a]
DLNASCENT	-0.142 (1)	-2.890 (0)[a]

> a and b respectively indicate significancy at 1% and %5 level of significance.

The impact of Nascent on economic growth can be examined via a Cobb-Douglas model of growth. In Cobb-Douglas growth model, output is a function of production factors of on capital and labour, a Cobb-Douglas production growth model in which NASCENT is regarded as a production factor can be expressed as follows;

$$Y = f(K, L, NASCENT) \tag{1}$$

or in an open format;

$$Y = K^{\beta_1} L^{\beta_2} NASCENT^{\beta_3} \tag{2}$$

when we take the logarithm of the difference of both sides, our equation is transformed into a growth equation.

$$DLY = \beta_1 DLK + \beta_2 DLL + \beta_3 DLNASCENT + e_1 \tag{3}$$

When the variables used in the study is replaced in equation, model is transformed into;

$$DLGDP = \beta_1 DLGFC + \beta_2 DLLAB + \beta_3 DLNASCENT + e_1 \tag{4}$$

The equation (4) is estimated with Pooled OLS, Fixed effect and Random Effect models and the results of the tests are listed below in Table 3.

Table 3: Panel OLS

Dependent Variable: DLGDP			
Variable	Pooled OLS	Fixed Effect	Random Effect
DLGFC	0.251310[a]	0.226752[a]	0.232221[a]
DLLAB	0.074809	0.105922	0.105440
DLNASCENT	-0.001149	-0.003139	-0.002690[c]
C	0.010106[a]	0.010064[a]	0.010032[a]
R^2	0.71	0.85	0.75
DW	1.28	2.30	1.93
N	216	216	216

a, b and c respectively indicate significancy at 1%, %5 and %10 level of significance, Ho rejected
White cross-section standard errors & covariance (d.f. corrected)

White cross-section correction is carried out in order to avoid autocorrelation, heteroskedasticity and cross section dependence

problems in estimated in equation. According to the estimation results, Nascent variable is not significant except random effect model. In random effect model, it is significant at the 10% level of significance, but it has a negative value. This implies that Nascent is not affective on output in the current period.

Table 4 : Pedroni Residual Cointegration Test

Null Hypothesis: No cointegration				
Trend assumption: No deterministic intercept or trend				
Use d.f. corrected Dickey-Fuller residual variances				
Automatic lag length selection based on MAICwith a max lag of 1				
Newey-West automatic bandwidth selection and Bartlett kernel				
Alternative hypothesis: common AR coefs. (within-dimension)				
	Statistic	Prob.	Weighted Statistic	Prob.
Panel v-Statistic	-3.708636	0.9999	-3.715357	0.9999
Panel rho-Statistic	-3.267923	0.0005	-3.371113	0.0004
Panel PP-Statistic	-4.886792	0.0000	-4.489223	0.0000
Panel ADF-Statistic	-4.237190	0.0000	-4.039258	0.0000
Alternative hypothesis: individual AR coefs. (between-dimension)				
	Statistic	Prob.		
Group rho-Statistic	0.340433	0.6332		
Group PP-Statistic	-5.951790	0.0000		
Group ADF-Statistic	-4.332710	0.0000		

Because LNASCENT and LGDP variables are not stationary in I (0) and they are stationary in their first difference, long term relations between variables are examined with co-integration tests and short term relations with error correction tests. Firstly, the long term relationship between LNASCENT and LGDP is examined with Pedroni Cointegration Test.
Results show a long-term relationship between these two variables. Then long-term co-integration relationship is estimated using Fisher (combined Johansen) test.

Table 5: Fisher (combined Johansen) Test

Cointegrating Eq:	CointEq1
GDP(-1)	1.000000
NASCENT(-1)	1456.657
C	-33982.75

The short-term causal relationship is investigated using the vector error correction analysis. The relationship between the two variables in the sense of Granger causality investigated by the following equation. m lag length value is determined as 2 according to FPE (Final Prediction Error) and Akaike criterion.

$$\Delta Y_{it} = \alpha_0 + \sum_{j=1}^{m} \alpha_j \, \Delta Y_{it-j} + \sum_{j=1}^{m} \beta_j \, \Delta X_{it-j} + e_{it-1} + u_{it}$$

$$\Delta X_{it} = \gamma_0 + \sum_{j=1}^{m} \gamma_j \, \Delta X_{it-j} + \sum_{j=1}^{m} \delta_j \, \Delta Y_{it-j} + e_{it-1} + v_{it}$$

Here e_{it-1} cointegration equation is the first lag of error term. The obtained results is shown in the figure below.
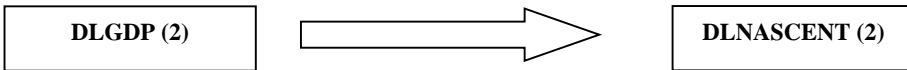
DLGDP (2)	⟹	DLNASCENT (2)

Accordingly, a short term causal relationship is found from DLGDP to DLNASCENT.

CONCLUSION

The emphasise given to entrepreneurship is increasing with each passing day. Although there are various efforts to empirically test the importance of the impact of entrepreneurship on economic performance especially at the firm, region or industry level, country level contributions in the literature is quite narrow. Accordingly, this study focuses on the direct impact of entrepreneurship on economic growth. These relation is analyzed empirically using gross domestic product per capita, gross capital formation, labour force and Nascent entrepreneurial activity data of 24 countries covering 2006-2015 period within the context of the study.

The results of the analyses carried out in the study have shown that the Nascent investments aren't effective on output (GDP) in the current period however their outcomes come out in Long term. In

the short term direction of causality it was determined to be from DLGDP to DLNASCENT. This relationship can be interpreted as the increase in GDP in short term resulting in increases in Nascent investments. On the other hand, in long term a cointegration equation and relationship from DLNASCENT to DLGDP is determined. Last of all it can be said that the effect of Nascent don't emerge immediately but it manifests itself over time.

COUNTRIES

Argentina	France	Netherlands
Belgium	Germany	Norway
Brazil	Greece	Peru
Chile	Hungary	Slovenia
China	Ireland	Spain
Colombia	Italy	United Kingdom
Croatia	Japan	United States
Finland	Latvia	Uruguay

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