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INVESTIGATION OF THE FACTORS INFLUENCING ON ENTREPRENEURSHIP IN IRAN INSISTING ON HUMAN CAPITAL AND ECONOMIC GROWTH

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ABSTRACT

According to many economic experts, entrepreneurship plays a lot of roles in society as the economic stimulus engine and is regarded as the foundation of all human developments. Given the importance of entrepreneurship for the development process of today's world, the necessity of studying the issues related to entrepreneurship is sensed specially from economic perspective. Thus, there is an attempt in this study to investigate the effectiveness of macro variables of economics on the development of entrepreneurship using time series data related to the years 1353 to 1390. In order to estimate the model, the ARDL method has been used. The finding of the study indicate that in the long term, variables of labor, physical capital, gross domestic product, intellectual capital and foreign trade have positive sign and are statistically meaningful as well. Unemployment rate factor has a negative effect on entrepreneurship, but is not meaningful statistically. Given the error correction terms coefficient, 58% of the unbalance created in its long term balance values of dependent variable in each period is adjusted and omitted in the next period. In addition, there is a bilateral causal relationship between entrepreneurship and economic growth in the long run.

Keywords: Entrepreneurship, Human Capital, Economic Growth, ARDL method, Error Correction Method

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1- INTRODUCTION

Entrepreneurship is one of the main and fundamental axes of growth and development, such that it is known as the economic stimulus engine of any country. Experience of the countries with high growth of national income indicates that managers of the countries have realized the role and importance of entrepreneurship in advancement and development of a country. Entrepreneurship is a process that plays a critical role in continuation of national and even international economic growth and development (Schumpeter, Joseph [3]). Therefore necessity of creating an appropriate substrate to support logically, including material, spiritual, cultural, research and scientific support, entrepreneurship and entrepreneurs is felt in our country more than before. Importance of entrepreneurship issue is such that economists consider entrepreneurs as the engine of economic growth and development of society and scientist believe that their management is one of the most important factors for organizational evolution and innovation in the current era. Hence, there will be dynamic and diverse economy where people own entrepreneurial thought and art.

Nowadays, the world's economic structure is fundamentally different from the past. Today's sustainable development is based on innovation, creativity, use of science, its continuation and transition to the future generation. Besides preparing the ground for the sustainable growth and development, development of entrepreneurship in the country will solve current problems and difficulties including poverty, social and cultural disorganization, unemployment of university graduates and the difficulty of others mass unemployment. In fact, entrepreneurship, whose concept is the discovery and exploitation of opportunities to create value in various economic, social and cultural areas of a society, is regarded as the basis and foundation of comprehensive development. Studies and research show that entrepreneurship plays a competent and necessary role in economic growth and development, active presence in world markets, competition, sustainable employment, development of justice, reduction of poverty, national income and solution of problems of the society, government and public sector. Development of entrepreneurship in the country needs capable entrepreneurs. Development of entrepreneurship means creation of

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3- Schumpeter, Joseph A., "The theory of economic development", Harvard University press Cambridge, MA, 1934

entrepreneurship culture in the country, public positive tendency to entrepreneurship and consequently the increase of rate of entrepreneurial activities. Entrepreneurship is not only an emerging scientific area but also a way of life (Zali, 1389: 63). The obvious feature of today's economy is rapid variations. Therefore, countries are able to succeed in such an economy that have the capability to adapt to the changes. In an entrepreneurship based economic system, innovators and owners of thought and ides are considered as the main assets of a business and as the main factor for sustainable development.

2- THE RESEARCH OBJECTIVES

2-1- Investigation of the factors affecting entrepreneurship in Iran

3- HYPOTHESIS

2-1- Economic growth and development and manpower has a positive effect on entrepreneurship in Iran.

4- A LITERATURE REVIEW

4-1- Theoretical foundations

Nowadays, in various countries, a special attention is paid to economics oriented entrepreneurship and entrepreneurs in the science of management and economics. Strengthening entrepreneurship and creating an appropriate substrate for economic development is one of the tools for economic

development of countries, especially developing countries. Based on the world entrepreneurship statement, there is a strong correlation between national economic growth and the level of national and organizational entrepreneurial activity (Khenifer, Vakili, 1387: 36). Entrepreneurship is an important issue and many developed and developing countries have paid and are paying a serious attention to it (Imanipoor, Zivardar, 1387:12), while in modern economy, human expertise and their ideas produce more addd value (Arabioun et al., 1390: 168).

As a modern phenomenon, entrepreneurship has played an effective role in the economic development and advancement of countries. Entrepreneurship plays a key role in today's market based competitive economy. In other words, in a dynamic economy, ideas, products and services are constantly changing and meanwhile, entrepreneurs propose a pattern to confront and adapt with the new conditions. Various factors influence on the level of entrepreneurship, among which macro factors and variables of the country's economy such as gross domestic product, economic growth, unemployment, research and development, foreign trade etc. can play an important role. Basically, there is a question of how economic variables of a

country complete the entrepreneurship process at the business level and consequently at the macro level. For this reason, the relationship between economic variables and their effect on entrepreneurship is investigated next.

4-1-1- Economic growth

High economic growth in a country increase market opportunities for new entrepreneurs and also the expectable revenues obtained from entrepreneurship (Rinoldz et al., 1994: 449). Furthermore, economic growth in a country improves the prospect of entrepreneurial activities and decreases uncertainty of future demands. Therefore salaried people will have more motivation to get independence and establish new business, which in turn causes recovery-oriented entrepreneurship to enhance. In economic research, Stel et al., (2007:17) have demonstrated that economic growth rate has a positive effect on the opportunity-oriented entrepreneurship. Therefore it is expected that the ratio of recovery-oriented to peremptory entrepreneurship in the countries with high economic growth is higher.

4-1-2- International trade, globalization and entrepreneurship

The relationship between trade and entrepreneurship is explainable from several aspects, one of which being export

dimension. Whenever there is foreign demand for export commodities, the production capacities of export increase. The necessity of the capacity increase will be the use of skill or higher productivity workforce and other efficient resources. On the other hand, export increase creates competitiveness bases in production businesses which lead to innovation, higher skills and appearance of new businesses and new business activities in the production cycle. From the import perspective, capital and intermediary commodities that are largely responsible for the transfer of technology into the country or domestic businesses increase the production capacity of domestic businesses. In addition, business surplus to other businesses help to create modern strategies towards their production process. Thus, again, it leads to entrepreneurship and its promotion among domestic businesses.

4-1-3- Level of development and economic welfare

Peremptory activities in less developed countries, where the shares of agriculture and mines extraction sector is more than other sectors, shares a major part of the new entrepreneurship. In the countries, demand for a job is more than what clients are able to supply and most people should create a job for themselves to gain income. Small

businesses and their large number is the common problem at this level of development. As the economic development level and the share of industry sector of economy increases, the employment capacity develops across the countries and makes it possible for more people to be engaged in industrial factories. This condition increases attractiveness of earning wage and opportunity cost of making business and reduces peremptory entrepreneurship. Concurrently, increase of wealth and development of infrastructures and education makes it possible for recovery-oriented businesses to flourish and changes entrepreneurial activities nature. At this level of development, as the revenue in the demand side increases and the demand diversity specially increases specially for services, the share of industry section starts to reduce while the employment share of service sector increases that cause recovery-oriented entrepreneurship to promote.

4-1-4- Unemployment and entrepreneurship

Nowadays, entrepreneurship, as an important tool for job production and reduction of unemployment, are increasing being more important for experts and policy makers of the country. Many ambiguities have emerged in developing countries about the nature of

the relationship. Results obtained from the studies of a group of economists indicate a positive relationship between unemployment and entrepreneurship. In other words, they suggest that unemployment rate increase lead to increase of entrepreneurship, while some others propose the reverse relationship between the two variables and state based on documents that increase of entrepreneurship activities reduces unemployment rate.

Since their income has a meaningful and considerable relation with their work effort level, entrepreneurs dedicate more hours with high efficiency to work, through which they affect economic growth and consequently reduction of unemployment (Kerry, Sarik, 2003: 271:290). In a nutshell, entrepreneurship influences on the whole economy (Wan Stel, Kerry, Sarik, 2005:311). On the other hand, existence of a problem namely high unemployment rate and its undesirable effects on human societies has made politicians of all countries seek theoretical foundations of a suitable tool to reduce unemployment rate. In this regard, finding a suitable guide for the role and effect of entrepreneurship policies on the reduction and control of unemployment rate has turned into a subject for discussion and numerous studies for economic experts. A lot of questions arise in this regard as to whether

or not there is basically a meaningful relationship between entrepreneurship and unemployment rate? How and to what extent defining and creating entrepreneurial networks in various expertise areas as a necessity of development of entrepreneurship can be effective on reduction of unemployment? In spite of that, the way of the relation between entrepreneurship and unemployment has turned into a complex dilemma for experts, which has some ambiguities in the best condition. Beginning the issue that increase of unemployment rate and degree reduces the opportunity to become entrepreneur considerably, some economists conclude that in such circumstances, more people are encouraged and persuaded to self-employment and make of new business. This group of experts, having studied their selected population, believed that there is a positive and meaningful relationship between unemployment and entrepreneurship and increase of unemployment rate will consequently lead to the increase of entrepreneurship. The start of the issue dates back to the first study on the relationship between unemployment and entrepreneurship in 1943 (Parker, 2004, Grilo and Sank, 2005, Grilo and Erigoin, 2006).

Defining a word meaning refugee effect, the group of people states that high unemployment rate and undesirable carrier perspective makes people act for self-employment. In other words, the view of the experts is based on the creation principle that making decision to become an entrepreneur is a response and reaction to becoming unemployed. Therefore a high unemployment rate encourages more people to become entrepreneur. The results of investigations of Evans and Leighton (1990) are to confirm the hypothesis and indicate a positive relationship between unemployment and briskness of new businesses establishment.

4-1-5- Education and training

The degree of people's education is one of the most important factors determining their business condition. In some studies of economics literature, the effect of education on the level of entrepreneurship activities has been assessed. However, a small number of them considered the effect of education on entrepreneurs' motivation. Verheul et. al, (2001) have stated in their study that education can give people the necessary knowledge that is helpful for entrepreneurship opportunities, widens their sight range and therefore makes it possible to understand opportunities better. The other

function of education is to create a tendency for independence in people, which is one of motivations of increase of entrepreneurship.

2-1-6- Technical development and use of modern technologies

Technical developments is one of the factors for creating entrepreneurial demand because new technologies can lead to production of modern commodities and services and provide new businesses with opportunities to create new businesses. In addition, it has been stated that technical development can enhance competitiveness of small and new businesses.

2-4- Background of empirical studies

In a study called "Investigation of the effect of entrepreneurship on the economic growth of Iran using the approach of Bayesian averaging", Torghaban and Mobaraki (1391) investigated the factors affecting Iran's economic growth insisting on the degree of effectiveness of entrepreneurship in uncertain model conditions. The obtained results show that the factors affecting economic growth are: inflation, workforce, government investment, entrepreneurship, export, government hygienic expenditure, investment on oil and gas and direct foreign investment. The obtained results indicate that besides the other 27 variables, entrepreneurship has a meaningful effect on

economic growth. The result indicates that there should be a special attention to the creation of background for entrepreneurship in the country besides other effective factors on economic growth.

In a study called "Analysis of the effect of information technology and intellectual capital on the organizational entrepreneurship", Akbari et al., (1391) analyzed the effect of information technology and intellectual capital on the organizational entrepreneurship of the personnel of Sobhan Oncology Company. The results obtained from the test of hypotheses by the software SMAR PLS, use of the t-test statistic and path coefficients (β) showed that the variable information technology has a meaningful and strong effect on intellectual capital. Intellectual capital has a meaningful and weak effect on organizational entrepreneurship but information technology has meaningful and average effect on organizational entrepreneurship. In addition, information technology, as an adjuster variable, can increase the positive effect of intellectual capital on organizational entrepreneurship.

In a study called "Factors affecting organizational innovation and entrepreneurship in medical science universities of the country", Dehghan et al.,

(1391) identified the factors affecting organizational innovation and entrepreneurship in medical science universities of the country using the three branch pattern of entrepreneurship development. The study shows that three groups of structural, behavioral and background factors are effective on organizational innovation and entrepreneurship in medical science universities, whose general condition is average. According to the results of the study, it is suggested that the managerial attitude toward administrative system is changed, the structure is modified based on new strategies, systems and work methods are decentralized and modified to improve the condition of organizational innovation and entrepreneurship at the precedence of administrative system of medical science universities.

In a study called "Explanation of the factors affecting independent entrepreneurship process (case study: entrepreneurs of city of Bandar Anzali)", Jafarnejad et al., investigate and identify the variables and explained the factors affecting the process of independent process across city of Bandar Anzali. The findings indicate that while explaining the factors affecting the independent entrepreneurship process in the stated

society, each of the four studied variables directly (all variables) and also indirectly and bilaterally (other than individual variable) is effective on the independent entrepreneurship process and from this perspective, individual, carrier, behavioral and environmental variables have had the highest direct effect on the independent entrepreneurship process respectively with the values 0.91, 0.57, 0.39 and 0.24.

In a study called "Effect of globalization and international trade on the development of entrepreneurship case study: countries of Organization For Economic Co-operation and Development (OECD)", Tayebi and Fakhri (1389) made an attempt to investigate the effect of international trade and globalization on the development of entrepreneurship in the countries of OECD. In order to realize the objective, an econometric model was stipulated and estimated using the panel data chosen from the countries of OECD in the time period 2000 to 2005. The obtained results indicate that development of export and import and the phenomenon of globalization has positive and meaningful effects on the entrepreneurship level in the countries and as a result of creation of surpluses and transfer of technology by foreign trade, plays a major

role in the creation of entrepreneurship process.

In a study called "human capital and economic growth in Cameroon", Nya et al., (2012) investigated the effect of human capital on the economic growth of Cameroon in the time period 1970 to 2010. The methodology of the study is based on the basic growth model of Monkey-Romer and Weil and analyzes the formulated regression model of time series using Granger-Angel causality. The results of the study indicate that human capital has a positive and meaningful effect on economic growth. Therefore, based on the study, the country's policy makers are suggested to use policies that lead to high rates of economic growth developing human capital.

Colantone and Sleuwaegen, (2007) investigated the relationship between the degree of changes in the intensity of trade, survival of business and its entrance and exit. Using the data of the countries Belgium, Denmark, Finland, Italy, the Netherlands, Spain, Sweden and England, that consist of entrance and exit rates of 12 factory sectors in the period 1997 to 2003, they realize that increase of business openness has a direct relation with exit rates and a reverse relation with entrance rates of businesses and their entrepreneurship level too. They also find

supports for the positive view on globalization as a source of new carrier opportunities.

In a study called "Does globalization affect entrepreneurship? an adaptive study of across country indicators" Vinig and Kluijver, (2007) considered the data of 30 member countries of GEM (2003) to discover the relation between globalization and entrepreneurship. They used the T.E.A and Konjunkturforschungsstelle (KOF) index respectively for entrepreneurship and globalization. They concluded that globalization in the countries with low income has a negative effect on the level of the country's entrepreneurship.

In a study called "International financial integrity and entrepreneurship", Alfaro and Charlton (2006) use the data of 24 million businesses in 100 countries in the years 1999 and 2004 to discover the relation between international financial integrity and entrepreneurship. They came to the conclusion that international financial integrity has a positive and meaningful effect on the entrepreneurship activity in the country.

5- Model and methodology of the study

Numerous factors influence on entrepreneurship level, among which macro factor and variable of the country's economy,

such as gross domestic product (economic growth), unemployment, research and development and foreign trade etc. , can play a major role. Given the presented issues in previous section and according to Klerk et al., (2008), Choi and Phan (2006) and Audretch and Keilbach (2006), the model is as follows:

$$ENT_{t} = \beta_0 + \beta_1 L_t + \beta_2 K_t + \beta_3 H_t + \beta_4 Y_t + \beta_5 TR_t + \beta_6 UN_t + \varepsilon_t$$

… (1)

such that:

ENT: entrepreneurial index

L_t: workforce factor

K_t: physical capital

H_t: human capital (manpower with academic education)

Y_t: real gross domestic product

TR_t: international trade (volume of export and import) in the country

UN_t: unemployment level in the country

By the establishment of the world watchdog of entrepreneurship in 1997, there were no authentic and comprehensive data about entrepreneurial activities of countries. The main activity of the world watchdog of entrepreneurship is to collect annual data of entrepreneurial activities of the participant countries. This job is accomplished based on the samples with at least 2000 adult people in the member countries. The first report of the world watchdog of entrepreneurship was

published in 1999 collecting data of 10 countries. The number of members of the world watchdog of entrepreneurship increased gradually such that the report of the year 2010 of the entity contained information about the entrepreneurial activities of 58 member countries. The office of the world watchdog of entrepreneurship in Iran has started to work since the establishment of entrepreneurship department and the data related to our country is issued in the reports of the world watchdog of entrepreneurship since 2008. Given lack of statistics related to entrepreneurship index during the studied year in the country, its substitute index is used which is the research and development expenditure from 1353 to 1390 instead.

The required statistics and data of the study for the time period 1353-1390 were obtained annually using Central Bank website (www.cbi.ir) and statistical calendar of statistics center of Iran (www.amar.sci.org.ir). Statistics of real gross domestic product, international trade, education, research and development expenditure, unemployment and total investment, which are based on the base year of 1376, were extracted from Central Bank website and statistical calendar of statistics center of Iran. It should be added that the

necessary calculations were accomplished using the software Microfit4.1.

5-1- THE RESEARCH METHOD

The use of conventional method for empirical studies in econometrics is based on the assumption of stationary variables. The investigations conducted in this area have shown that the assumption is incorrect for many time series data and most of the variables are non-stationary. Therefore the issue might lead to emergence of fictitious regression and destroy the trust in estimated coefficients. Thus, according to the cumulative theory in modern econometrics, it is necessary to use methods to estimate functions when using time series that take into account the stationary and cumulative issues. Hence, in this study the econometric method of ARDL has been used. For the beginning it can be said that the method is statistically better and more meaningful for determination of accumulation relations in small samples, while Johanson's technique needs large samples to validate its results (Ghatak and Siddiki, 2001). Based on the study of Pesaran et al., (2001), using the method of ARDL and including suitable pauses it is possible to attain adaptive coefficients between the variables of a model. In this study, using criteria such as Schwarz-Bayesian and Hanan Queen,

optimum pauses are selected for each variable (Pahlavani et al., 1386).

This method estimates simultaneously the long term and short term relations between the dependent variable and other descriptive variable of the model. In addition, this method is able to eliminate the difficulties related to variable omission and autocorrelation and also since the models generally lack problems such as serial autocorrelation and endogeneity the obtained estimates will be unbiased and efficient (Amir Teymoori and Khalilian, 1387). There is no need to have the same degree of collectivity of variables, which is necessary in the method of Angel-Grainger, in the use of this approach (Yousefi, 1379) and the methodology of ARDL is also applicable when variables are a combination of I(1) and I(0) variables. It means that there is no need to the primary test of unique root on the variables in this method. This model has also the advantage of providing the error correction pattern to investigate how to adjust short term unbalance to long term balance besides the estimation of the coefficients related to long term pattern. In their book, Boys and Boys of the year 1997 demonstrate that if the collective vector obtained from using the least square method is obtained in an ARDL pattern, whose

pauses are stipulated well, in addition to obeying normal distribution it will have less bias and more efficiency in small samples (Mahdavi Adeli et al., 1388). The ARDL method estimates are unbiased and efficient due to avoiding problems such as autocorrelation and endogeneity (Siddiki, 2001).

5-2- Short term estimation of the model

Entering the data related to Iran from 1353 to 1390 Persian calendar into the software Microfit4.1, the model is estimated. Given the results obtained from stationary test, since the variables used are not all stationary

I(0), the applied method is the auto correlated pattern with distributed pause. Choosing Schwarz Bayesian Criterion out of criteria such as Acaeick, Hanan-Queen and the adjusted determination coefficient, the optimum pauses are determined. For samples smaller than 100, Hanan-Queen and the adjusted determination coefficient is normally used to determine the optimum pauses. For samples below 100, Schwarz Bayesian Criterion is used to maintain the degree of freedom. The summary of the results is shown in table (1).

Table (1): The results of short term coefficients ARDL (1,0,0,1,0,0,0)

Variable	Coefficient	Standard Error	T-Ratio	P-Value
LENT(-1)	0.419	0.0622	6.69	0.000
LUN	-0.16	0.098	-1.63	0.131
LL	0.441	0.131	3.36	0.005
LK	1.38	0.510	-2.71	0.011
LK(-1)	1.064	0.396	2.684	0.012
LY	0.146	0.054	2.527	0.015
LH	0.123	0.021	6.087	0.000
LTR	0.083	0.037	2.225	0.035
DUMI	-0.086	0.033	-2.619	0.014
C	11.56	5.432	2.128	0.043

R-Squared=0.989,   R-Bar-Squared =0.986,   F-Stat =284.63 [0.00]
DW-Statistic =2.093   Schwarz Bayesian Criterion =50.69

Reference: The computerized attachment (the software output)

As it is seen, based on SBC criterion dependent variable and the physical asset variable have appeared with one pause while the other variables are without pause. The coefficients show that the first pause of the dependent variable, workforce, physical asset, the first pause of physical asset, gross

domestic product, human capital and foreign trade has the positive sign and is also statistically meaningful. However, unemployment rate coefficient has a negative effect on entrepreneurship, but is not statistically meaningful.

The results of table (1) show that the determination coefficient and statistic F are respectively equal to 0.989 and 284.63, which indicates the high explanation power of the model. In addition, diagnostic tests confirm that all classical assumptions (lack of autocorrelation, correct functional form, normality of residuals and existence of consistency variance) are met for the model.

Table (2): Results of the diagnosis test of classical assumptions

Test Statistics	LM Version	F Version
Serial Correlation	0.468[0.494]	0/346[0/561]
Functional Form	1.385 [0.239]	1.050 [0.314]
Normality	2.815 [0.245]	Not applicable
Heteroscedasticity	0.054 [0.815]	0.052 [0.821]

Reference: The computerized attachment (the software output)

5-3- Results obtained from long term estimation of the model

Using the result, now we'll test the null hypothesis of existence of the unique root and lack of accumulation (long term relation) among the dynamic model. As it was mentioned, if sum of paused variables related to the dependent variable is less than one, then the dynamic model will approach the long term balance model. The necessary t-statistic quantity for performing the above test is calculated as follows according to what was said previously:

$$T = \frac{\sum_{i=1}^{p} \hat{\alpha}_i - 1}{\sum_{i=1}^{p} s\hat{\alpha}_i} = \frac{0/419 - 1}{0/062} = -9/68$$

Since the critical quantity presented by Benerji, Dolado and Master (1992) is equal to -3.43 at the 95% certainty level, hypothesis H0 is rejected. Therefore it can be concluded that there is a long term balance relationship between the variables of carrier model in industry.

The results obtained from the long term estimation are presented in table (3).

Table (3): Results of the long term estimation of the model ARDL (1,0,0,1,0,0,0)

Variable	Coefficient	Standard Error	T-Ratio	P-Value
C	19.91	5.604	3.552	[0.001]
LUN	-0.216	0.156	-1.384	[0.141]
LL	0.670	0.225	2.977	[0.006]
LK	0.854	0.242	3.529	[0.001]
LY	0.152	0.047	3.234	[0.003]
LH	0.139	0.039	3.564	[0.001]
LTR	0.143	0.0524	2.745	[0.011]
DUMI	-0.149	0.0605	-2.46	[0.021]

Reference: Findings of the research

The long term model has the following form:

ENT=19.91+0.67L+0.854K+0.139H+0.152 Y+0.143TR-0.216UN-0.149DUMI

As it is seen, except the unemployment rate variable, all the other coefficients are meaningful at the 95% certainty level. Based on the obtained results:

1- Unemployment rate variable (LUN) has a negative coefficient, indicating that one percent increase in unemployment rate in the country results in a 5% reduction in the entrepreneurship coefficient. However, it is not meaningful for Iran's economy. As it was mentioned earlier, empirical studies conducted in developed countries suggest conflicting effects of unemployment rate on entrepreneurship. In 1990, Evans and Leighton show that unemployment affects entrepreneurship positively. However, some others have come to the conclusion that unemployment has a negative effect on entrepreneurship (Orch and Fertch, 1994). There is a third group whose studies results show no meaningful relation between unemployment and entrepreneurship (Kerry, 2009:271). In fact, the result of the study also confirms the third group results stating that unemployment rate doesn't have any effect on entrepreneurship quantity. In high unemployment conditions, the opportunity cost of entrepreneurship decreases for many people and leading many of the unemployed

to self-employment and entrepreneurship doesn't seem out of mind. However, lack of observation of such effect in the country, which has been known as refugee effect, can be as a result of the following reasons:

a- Low level literacy and the trainings related to entrepreneurship in the country in comparison to developed countries

b- Inadequate entrepreneurship culture in across the country

c- Inefficient culture of cooperation for entrepreneurship

d- Unhealthy competition environment due to presence of governmental rival businesses (due to payment of subsidies to governmental businesses and their non-competitive productions)

e- High risk of entrepreneurship and investment in industry due to reasons such as: a) Instability of rules and regulations, b) Too much administrative bureaucracy (too much time needed to get business license etc.), c) inefficient rules of work (problems of employment), d) inadequate governmental support of new businesses and e) lack of an efficient system to furnish financial resources of entrepreneurs.

2- Foreign trade variable (LTR) is meaningful and has a positive coefficient. Since the above coefficients in logarithmic condition show the minor elasticity of

entrepreneurship with respect to the effective factors, the results of the model state that one percent increase in the country's foreign trade leads to a 14% increase in entrepreneurship coefficient. Therefore the hypothesis that foreign trade directly affects the entrepreneurship level of economy of a country is accepted. In other words, the share of business in gross domestic product of countries, which can be regarded as the degree of openness of economy, develops the entrepreneurship level of economy because in the countries with extensive business inter relations and relations with other developing countries the open economic environment create the possibility of competition and productivity among economic sectors and businesses to develop entrepreneurship and create opportunities of new economic activities.

3- The workforce variable (LL) is meaningful and has a positive coefficient, indicating that one percent increase in the amount of workforce leads to a 67% increase in the entrepreneurship coefficient, which necessitate more attention to the issue of workforce employment. It is worth mentioning that in addition to directly increasing entrepreneurship and production, employment of workforce will provide the

ever increasing production through proliferation effects.

4- The economic growth variable is also meaningful and has the expected positive coefficient. It means that one percent increase in gross domestic product variations and economic growth leads to a 15% increase in the entrepreneurship coefficient. In other words, elasticity of entrepreneurship with respect to economic growth is 15%. The country's economic growth also helps the entrepreneurship develop by the increase of economic capacities because the economic growth coefficient is positive and meaningful in the entrepreneurship model. Thus, existence of a stable economic growth boosts entrepreneurial motivations.

5- The physical asset variable (LK) is meaningful and has a positive coefficient, indicating that one percent increase in assets leads to an 85% increase in the entrepreneurship coefficient. Given the high effect of assets on creation of entrepreneurship and in order to reduce consequences of global crisis and also improve and promote economic situation of the country, supporting the private sector, the government should make investments that develop entrepreneurship in Iran as soon as possible. Investment of the government and the private sector in this area is considered as

a type of infrastructure investment that results in developments in the future of Iran's economy.

6- The results obtained from the investigation of the effect of human capital on the growth of entrepreneurship in Iran also confirms the positive and meaningful effect of human capital on the short term and long term gross domestic product of the country. Long term effects of human capital on economic growth (0.139) are more than its short terms effects (0.123). The issue necessitates more attention of the countries' authorities to importance and role of human capital and its development. In new theories of growth, the role of human capital in economic growth is insisted more on and the trained manpower

and their idea and thought for development of new technologies of production is introduced as the fundamental basis and axis of development and economic growth.

7- The dummy variable for war (DUMI) is meaningful and has the expected negative coefficient. One percent increase in dummy variable related to war reduces the entrepreneurship coefficient by 14%.

5-4- Estimation of the error correction model

Next, estimation of the error correction pattern which indicates the short term relation between the dependent variable and independent variables of the model is accomplished, whose coefficients are shown are presented in table (4).

Table (4): Results of the error correction model

Variable	Coefficient	Standard Error	T-Ratio	P-Value
ECM(-1)	-0.58	0.162	-3.579	0.001

Reference: The computerized attachment (the software output)

What is most important in the error correction model is the coefficient of the error correction term which shows the rate of adjustment of the unbalanced process towards the balance process in the long term. As it is seen in table (4), the coefficient is meaningful and has a negative sign, and given that the error correction term coefficient is estimated as (-0.58), it is concluded that around 58% of the unbalance created in the dependent variable of long

term balance values in each period is adjusted and eliminated in the next period. In other words, if any types of shock or unbalance are created, the balance will be regained in less than two years. Thus, movement toward balance is relatively good.

6- CONCLUSION AND SUGGESTIONS

The purpose of this study is to investigate the macro factor influencing on entrepreneurship in Iran, using annual data of the time period 1353 to 1390. The results of the estimation of

the model using the ARDL method indicated that there was a cumulative long term relation between the model variables and the following results have been obtained:

The variable of unemployment rate (LUN) has a negative coefficient indicating that one percent increase in unemployment in the country is accompanied by a 5% decrease in the entrepreneurship coefficient. However, it is not meaningful for Iran's economy.

The variable of foreign trade (LTR) is meaningful and has a positive coefficient. Since the above coefficient indicate minor elasticity of entrepreneurship with respect to the mentioned factors in the logarithmic scale, the results of the model state that one percent increase in the country's foreign trade results in a 14% increase in entrepreneurship coefficient.

The variable of workforce (LL) is meaningful and has a positive coefficient indicating that one percent increase in workforce leads to a 67% increase in the entrepreneurship coefficient.

The variable of economic growth (LY) is also meaningful and has the expected positive coefficient, indicating that one percent increase in the changes of gross domestic product and economic growth leads to a 15% increase in the entrepreneurship

coefficient. In other words, entrepreneurship with respect to economic growth is 26%.

The variable of physical assets is meaningful and has positive coefficient, indicating that one percent increase in assets leads to a 85% increase in the entrepreneurship coefficient.

The results obtained from the study of the effect of human capital (LH) on the growth of entrepreneurship in Iran confirms the positive and meaningful effect of human capital on the short term and long term gross domestic product. Long term effect of human capital (0.139) on economic growth is more than its short term effects (0.123), which necessitate more attention of the countries' authorities to the importance and role of human capital and its development.

The dummy variable for war (DUMI) is meaningful and has the expected negative coefficient, indicating that one percent increase in the dummy variable related to war is accompanied by a 14% decrease in the entrepreneurship coefficient.

According to the obtained results it is suggested that:

Due to the fact that foreign trade has been suggested as an important and effective factor for promotion of entrepreneurship level in the country, targeted development of business relations between Iran and other countries can lead to development of

entrepreneurship in the country. The issues will be realized by the help of export incentives and facilities from export viewpoint and transfer of entrepreneurship knowledge from other countries to our country from import perspective.

The results showed that human capital (worker with a college education) while promoting the education level increases the entrepreneurship level in the country. Therefore it is suggested that improvement of education condition of society members, specially vocational training, is taken into account more because this type of training as well as theoretical training make it possible for learners to align more with job market needs and in this way get better opportunities for their innovations based on market needs.

The results indicated that unemployment cause entrepreneurship level to decrease so that policy makers of developing countries pay more attention to the society employment issues to not only resolve the issue of unemployment but also encourage entrepreneurship in the country. Furthermore, it is suggested that governmental and non-governmental institutions support self-employment activities so that they facilitate starting of a self-employment activity.

Given the political suggestions proposed in the present study, in order to increase the number of entrepreneurs and entrepreneurship activities in the long run, it seems necessary to adopt actions and policies that increase entrepreneurship investment and motivation and spirit of entrepreneurship in the country. Adopting economic and social policies and programs, the government should introduce the issue of entrepreneurship at a national scale in such a way that they will be able to attract the society's mindset to self-employment, work and earning income in the private sector. In other words, they should change the culture of sitting at a table of the society. In addition, existence of rules and regulation for ownership right in production and distribution of commodities and services and reduction of legal restrictions can be effective in this regard. Economic freedom and stability of markets also leads to facilitation of entrepreneurs' activity. Tax concessions for entrepreneurs in various regions, specifically in small towns and deprived areas leads to attraction, encouragement and development of entrepreneurship activities. Enhancement of appropriate infrastructures in the country is also necessary for the government policies for the increase of entrepreneurs' activity to be realized.

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