OPTIMIZATION OF CONVERGENCE RATE BY STATIC AND DYNAMIC MODELS

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ABSTRACT

Increase in per capita income and developing productivity are the major concerns of the countries. In this project we try to investigate the hypothesis of adding the risk of removing income tax at a specific time with the open economy hypotheses (exchange rate integrity) to Solow growth model which could increase the per capita income significantly. this theoryhas not been taken into account in Solow growth model and through optimizing the convergence rate that leads to stable convergance rate with the the effective parameters of risk that considers the closed economy as well causes increase in constant population (the constant efficient work force) and technological development of the countries. The main aim of the study was to investigate the risk for increasing convergence rate, increase in welfare consumption of the individuals especially the workers and increase in per capita income of the country using static and dynamic models.

Keywords: Income tax, Convergence rate, Per capita income, Risk, Particular time.

INTRODUCTION

On the basis of the provided hypothesis, there are numerous ways other than the efficient workforce that affect per capita income of the countries determined by risk. Risk is the probability of the occurrence of a success or failure increased by (successful) probability, and addeding or removing dynamic risk (regarding the pattern of the independent companies in association with KPMG the international cooperative company, KMPG international, Swiss branch). The risks are of two types in terms of value: risk aversion and risk-taking, both of which are going to be evaluated before taking the risk. ("The principles of management of risk", 2010, ISBN: 978 0 7494 5942 0 3), this evaluation is in contrary to valuation of the previous policies and in relation to the leap increasing or decreasing alteration vis a vie the shock of wages, the prices or the technology rate is added with some percentage of error. The risks could be anticipated by the time range efficient parameter and with the following formula:

$$r(r\,t\text{-}1)\ pv\ (pv\text{-}1)pv+1$$

We take the risk after evaluation, considering the increased risk value. When there was an unsuccessful risk which deviated the economy from its balanced position, a stability parameter could return the economy to its balanced status (considering Schroders' paradigm, 2012). The convergence test is a risk. By risk we mean to accept danger or assume a great danger that may either increase the risk of bankruptcy or increase in profits. For instance, we evaluate the risk of increase in de-concentration for developing productivity though open economy, the value of which is evaluated by risk aversion and risk taking interpretations. We also estimate the

probability of success or failure considering the policies used in previous times as well as the percentage of errors[1].

Convergence: Sharing the effective ways of transmitting knowledge and the capitals of other countries to increase effective productivity (Solow) or interchange of effective work force or investment of a country in other influential countrie which is called multilateral efficiency and cooperative law. The increase in convergence leads to increase in reciprocal overseas growth of the countries as well as an increase in the value of risk taking.

Taxe: The willingness of paying subside to people by the government or receiving taxes that the government has contrived for making a balance in the distribution of the income among the various classes of the society and leads to an increase in the welfare of the people.

Statement of the problem

The hypothesis of adding two effective parameters to Solow growth model which are two factors for increase in per capita income, not considered in Solow growth model, aims at changing the attitudes of the families which constitute a small business in the process of the economic growth of the country considering the risk hypotheses that culminates in increase of per capita income by increase in dynamic risk probability. By removing income tax, (Endogenous growth) and increase in integrity of the currency, (the open) and closed economy results in an increase in the growth of production, export, demand, and economic development. The risk decreases the integrity of currency rate of the negative shocks caused by it. These changes are static in a long run but it may change in short term. By the risk of the integrity of currency rate, the people's, especially the workers', affordability increases (considering the consumption pattern increase of Salai Martin, et al.). The risk related to taxes produces long-term goals and the long-term goals investigate open economy as well as even the closed one which leads to long-term employment, high interest rate, and an increase in stock capitals as the direct consequence of increase in interest rate. Increase in the risk of integrity of the currency rate causes saving in the consumptions to increase and the rate of disposables to decrease. Moreover, by removing the income tax and saving in disposables (mending and maintaining the apparatus) the consumptions increase (considering the pattern of decrease of the disposables, Shavell 4, 1979). In order to save, decrease in expenses by making use of the risk of depreciation between the high-level and low-level margins is being recommended in which saving the consumption leads to an increase in savings. Successful management and dynamic risk taking change the income and decrease the severity of the risk of management. The main question is proposed here that what effect do the equalization of the currency rate and removing the taxes have on the operative population, convergence rate, technological progress, and saving in the country. Besides, what effect does it have on enjoyment and technology if the income tax is removed in an open economy?

Literature Review

Regarding the previous studies on integrity of the currency rate and income tax,(According to foreign study table number1) the first article presented in this respect was written by Geraldm Gerardi, Michael J. Graetz, and Harvey S. Rosen, in 1990 on the basis of which the first theory of taxes was developed in 1909 and the first taxes were received in companies in 1916 with the aim of distributing the profit, creation of new incomes, integration of the income, and increase of the welfare. In this project, the risks of removing income tax and the integrity of

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[1] "KPMG International". www.koganpage.com

currency rate are being considered which were two greatly influential factors in economic development of the country during 1991-2019 with the general aim of increase of the welfare of consumption in Iran and are considered by TFP and the instant positive shock (TE).

Table 1: Foreign studies in line with currency convergence and income tax

Row	Subject	Author	Year	Country	Period	Model	Results	Publication code
1	Big companies of legal entity	Geraldine Gerard, Michael J. Graetz and Harvey S. Rosen	1990	The United States of America	1990-1996	L-metric	On the basis of this article, taxing leads to saving in consumptions and increase in shares of profit among the individuals	National Magazine, vol. 43, issue 3, September, 1990
2	Direct taxing, an ameliorating taxing suggestion in North New Zealand	PETER BIRCH SØRENSEN	2003	Denmark	1992-2000	Hadonic-Hodonic CAPM and APT	The results of the article reveal that, income tax of the companies leads to increase in savings of the country as well as an increase in per capita income other than taxes over value added goods	CESifo Working Paper No. 1036
3	The effect of taxing on value added goods and occupational activities	William G. Gale, Hilary Gelfond, Aaron Krupkin, Mark J. Mazur, and Eric Toder	2018	Europe	1965-2009	Microclimate ,TPC and Quarton Pneumatics	Decrease in income tax affects welfare and economic development	
4	The effect of uncertainty of currency rate on exports in Vietnam	Vinh Nguyen Thi Thuy * and Duong Trinh Thi Thuy	2019	Vietnam	2000-2014	Ols,var,ardl and GARCH-in-average.	The results in this article indicate that fluctuations in currency rate decrease export and increase depreciation in a long run and negatively affects the per capita income	Doi : 10.3390 /jrfm 12010006
5	Economic and monetary coalescence of Europe and optimal currency area theory	Francesco Paolo Mongelli	2008	Belgium	1998-2008	Micco Absorption model	The integrity of currency rate increases enjoyment and decreases the shocks, fluctuations, and even the risks	doi: 10.2765/3306

| 6 | Evaluation of tax risks | Bing Xu,Lili Li, Yan Liang and Mohib Ur Rahman | 2019 | China | 2016-2018 | SME | The obtained results are for supporting the decision of decreasing the tax burden and encouraging for the development of small businesses | doi:10.3390 /su11030741 |
| 7 | Transfer of fund across nations with the presence of uncertainty about income: The case of taxes on goods and services | Sacchidananda Mukherjee | 2019 | India | 2017-2022 | GST | Taxes over value added goods leads to increase in savings and governmental incomes | https://www. nipfp .org.in /publications/ working/pape rs/1850/ Page 2 |

Table 2: Table of domestic studies:

Row	subject	Author	Country	Year	Model	Period	Results	Article code
1	The challenges of restitution of tax in VAT system	Gharaghieh, Jamkarani, Guilani	Iran	2018	SPSS and descriptive and inductive	1989-1999	The results of the research show that on the basis of the viewpoints of the tax scholars three elements of lack of an adequate background for information technolog, lack of willingness of tax commissioners for restitution, and lack of a strong legal executive guarantee, consecutively, are three important challenges in restitution of taxes over value added incomes	108, issue 87, no.39, Fall 2018
2	Investigation of the relations of currency rate and macroeconomic variants of Iran (using case study by SSVS) Prior BVARFunction approach	Mehdi Sadeghi, Shahdani, Sahebhonar,Tahe rifard,Nakhli	Iran	2012	Bayesian	1973-1989	The anticipated results in the article compares the Bayesian self-regression with previous functions	Year 13, no. 49, Summer 2013
3	Non-linear uncertainty of real currency rate on economic development	Mostafa Mobini Dehkordi and Dr. Teymour Mohammadi	Iran	2014	GARCH In Mean	1990-2011	Uncertainty of the real currency rate to the specific level calculated in this article have a negative effect in economic development and improves later on	Year 14, no. 55, winter, 2014

4	Types of the exchange rate fluctuations Risks and theirs management practices: Theoretical Principles and review in the experiences of countries.	Zolfaghari, sahab, Mehregan, Sarang	Iran	2014			The risk of fluctuations in currency rate is regarded as one of the most important risks and, therefore, should investigate the shocks and deviations with a concise management in order to decrease fluctuation risks	Year 19, no. 4, winter, 2014
5	Investigating the effect of taxes (income and wage per supply of work force)	Mohsen Zayandeh Roody	Iran	2001	BLUmquist	1970-1988	Income tax affects the work hours of the individuals in a way that with increase in taxes the wages decrease and so does the quality of the goods.	Periodical 8 Summer, 2001

Literature review

Based on previous studies, instability in currency rates leads to decrease in exports and the savings of the country (According to foreign study table number4). Currency rate also affects the competitiveness which is low in reflate in a short time and results in low convergence rate and high income tax (According to foreign study table number3). Income tax culminates in low investment for the individual and increase in their unemployment as a result of increase in the expenses of the employers and decrease in wages; and entails decrease in investment and decrease in production as well as per capita income.

$\mu + \delta + n$

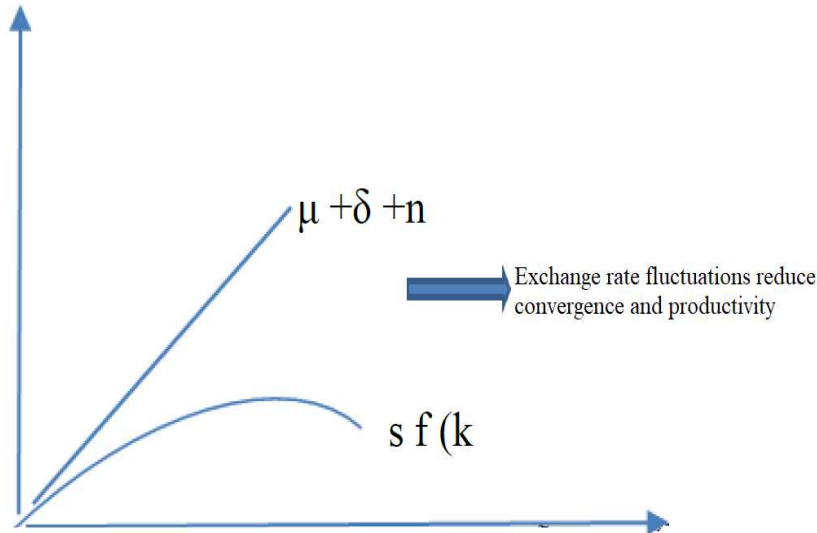Exchange rate fluctuations reduce convergence and productivity

$s\,f\,(k$

Figure 1: This figure shows that exchange rate fluctuations slow down the convergence rate

(According to foreign study table number5And internal studies4)Shock is sometimes a positive factor. Decrease in income tax and de-concentration promotes motivation for innovation, increase in work hours efficient, quality, enjoyment, and increase in savings in the society. By increase in multi-national cooperation, the rate of the currency could be optimized. (According to the table of internal studies5)The integrity of the currency rate decreases inflation and unemployment rate to a significant amount. With the models EMS and TPC (According to the table of internal studies1) this integrity leads to an increase in convergence

rate. The integrity of currency rate increases supply and demand and decreases the tax burden According to the Figure 2 Decrease in currency fluctuations increase its integrity and decrease in tax enjoyment increase the work hours efficient of the workers and the savings of the country. The most important point is that the fluctuations of currency rate are active in a short period of time but they also could have a long term effect from time to time which contribute to their effect in flexibility of taking risks.
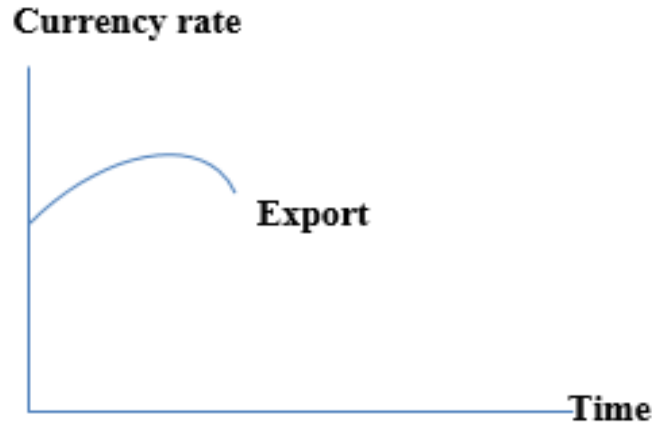

Figure 2: This figure shows that exchange rate fluctuations lead to a decrease in exports and production per unit time
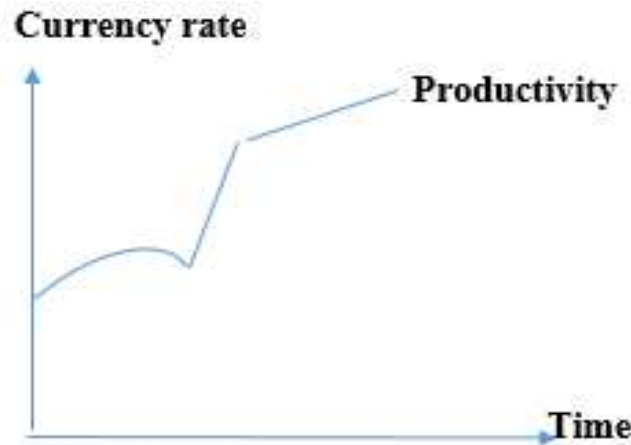

Figure 3: This figure shows that exchange rate integration leads to increased productivity

METHOD, DISCUSSION, AND CONCLUSION:

Now we turn to discuss about the mental values of risk which were not discussed in previous studies and increase the momenta changes in efficient productivity rate as well as increase in deposits per unit of time. Removal of income tax increases savings of the country as well as efficient work force, productivity, and affordability to a great extent even in closed economy and with a time restricted factor, the momenta changes in an effective t culminates in increase in the per capita income of the countries. Assuming the risk of removal of taxes per a particular time unit and considering the shocks received by the government efficient, this job results in a balance in the time when the risk of removal of income tax deviates the element of

per capita growth from its balanced position and by increase in the probability of the positive shock, the country's economy returns to its former status. In this section, we investigate the relations and interpret the risk of removal of income tax by assuming the currency rate in a time unit of dynamic, static, and effective. The main relations should be in this way:

Increase in consumption = changes in production* the risk of removal of income tax[2]* the efficient time period by considering the currency rate as integral (open economy), closed economy and the relations such as the changes in convergence rate, technological progress of knowledge, saving, enjoyment, the risk of removal of income tax per population.

Now we turn to examine the equations with risk. Ɵ is the risk coefficient. Whenever the value of the overriding risk variant in previous periods is high, the probability of the risk decreases by adding the error coefficient.

$$=r(r\,t\text{-}1)\,pv\,(pv\text{-}1)pv+1+\acute{\varepsilon}\,pv$$ where pv is the value of the risk, r, the variant, t-1 is the previous period, and pv+1 is the periodical value.

The relation could be written in this format:
The value of the variant risk = the percentage of success of the parameter of removing or adding income tax in previous times* risk* the current periodical value

The more the probability percentage, the more the value of (dynamic) risk and the more the convergence, the less the risk and the probability of the dynamic and successful risk increases by increase in the convergence, risky rate decreases.

but The value of the risk coefficient the main equivalent, maximum of consumption, balance of the market and the relevant result is differentiated in order to get the value of removal of income tax vis a vie the increase in consumptions. Then the result obtained is inserted in Ɵ/1 and is evaluated. The more the value of the coefficient, the less the probability of risk taking or, in other words, the probability of removal of income tax increases by increase in consumption. After we obtained the value of the risk, the risk of removal of income tax in te (the time efficient) is calculated by consumption formula; assuming open economy, the differential coefficient is derived in order to get the changes of consumption vis a vie the risk of removal of income tax.

$$Pv=\delta c(t\text{-}1)pv(t+1)pv(t\text{-}1)$$

$$Pv=\delta c(1/\Theta)pv(t\text{-}1)pv(t+1)/pv$$

Now it is the time to interpret the efficient time which makes the balance. When the taxes over income are removed, the individuals increase their savings (the motivations for progress of knowledge and enjoyment increase) and after a while the economy faces a downturn and remains there or experience a downward trend if the shock is not increased. A positive and effective shock of the government during one or two years was applied and returned the economy to its former status (balance).

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[2] In this study, the break-even point is given by the solo growth model μ, knowledge δ, the substitution depreciation principle and population n. sf (k) means capital savings.
* means multiplication
As convergence increases, risks decrease and the likelihood of successful and dynamic risks increases
The purpose of the open economy in this research is the integration of exchange rates in exports and imports

$$g = g\,te + (t)yt - 1 + i \qquad \text{equations}$$

$$g = g\,te + (\theta)yt + 1$$

The above equation demonstrate the role of the government in a particular time span in which the income tax are added and immediately removed after a particular efficient time has passed. By adding the taxes, savings decrease and by removal of it, they increase. In this equation te is a particular time span.

Main formula: income= differential coefficient of consumption*risk in a particular time minus its mental values* time efficient* differential coefficient of convergence rate/capital (according to the picture12)

$$Y = 1 - c(1 - \theta)$$

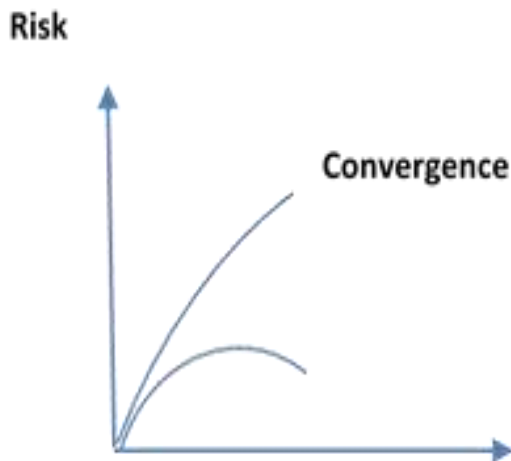$$Y = \delta\, c(-\theta(t) - pv(t)*te\, (/\delta k)/k$$

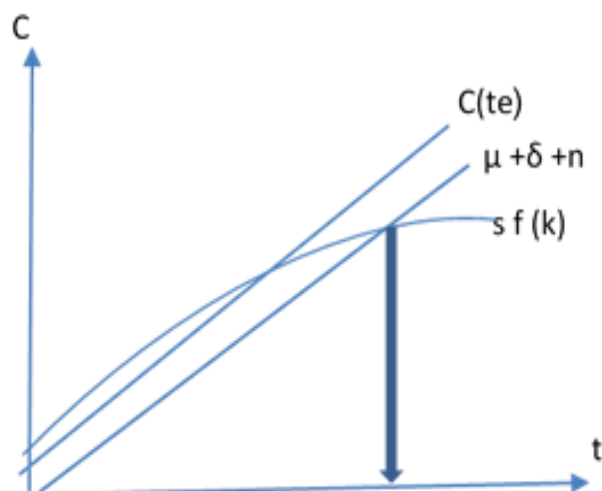Figure 4: This figure shows the effect of risk on convergence rate

Figure 5: This indicates that a stable balance increases consumption but slightly reduces savings

According to Figure 5, we find that the rate of increase in consumption according to the constant equilibrium formula Ct e sf (k) passes through that equilibrium point, and even breaks the point series. This point indicates a consistent convergence

Now it is time to investigate these equations by closed economy (static model). With the assumption that the country is suffering from sanctions and exports and imports are impossible, factoring a particular time (te) and the differential coefficients of the following equation, the stable consumption changes will be obtained. The more the coefficient increases, the more closed stable economy will increase.

Here the time is (t).

$$Y=\delta\ c(\text{-}\Theta(t)\text{-}pv(t)*te\ (1\text{-}t\ pv\ t\text{-}1\ \Theta)/k$$

Now it is time to consider convergence rate with the obtained function. The results indicate that the more the coefficient of the integrity of the multi-national countries increases, the more the convergence rate surges. The goal is the increase of the convergence rate. The more the savings, the more (sfk) converge to the break-even point series, a procedure in open economy in which this rate increases by risk of removal of income tax and the multi-regional countries move towards a path with a stable growth. Now we attempt to get the coefficient of increase of convergence rate: the consumption formula with removal of income tax (te), assuming open economy (dynamic model) and closed (static model), should be multiplied in convergence rate in order to get the coefficient of convergence rate in stable economy. Now we compare the convergence rate coefficient in open economy. The obtained coefficient should be multiplied by inserting in the main formula and the differential coefficient should be derived. The resulted changes reveals the convergence rate in open economy assuming the integrity of cuurency rate. Now we want to compare these changes in closed economy. With this formula the stable convergence coefficient is obtained in closed economy. The more this coefficient increases the more the risk decreases.

$$Y=c(1\text{-}\Theta)*te(\delta k/\delta k*k/k$$

$$K*\delta c\Theta*\delta k/k \qquad 1/\Theta*1/k$$
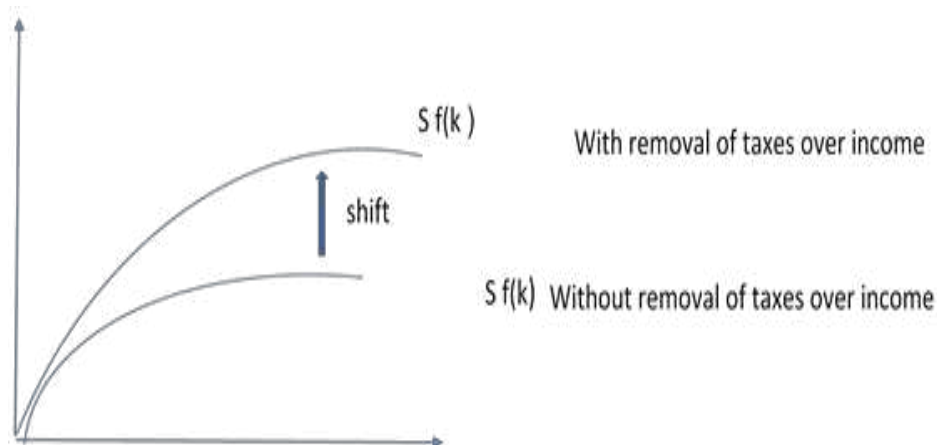

Figure 6: This figure shows the shift function s f(k) without deducting income tax and after deducting income tax
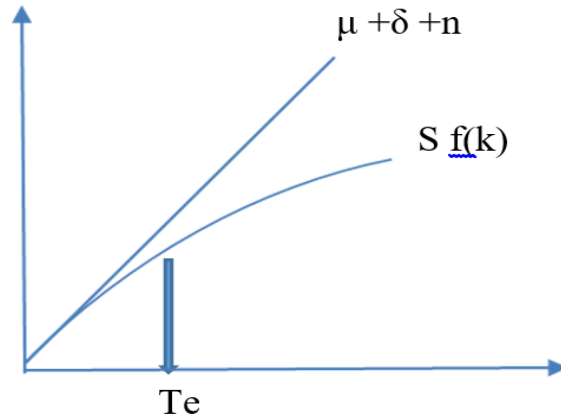
Figure 7: This figure shows the convergence rate in stable equilibrium and in effective time units

The more the risk turns to success, the more the convergence rate increases and the economy turns to convergence soon.

A particular time: the time when a positive shock can lead to substantial reformations in the economy. The shock should have been an instant one happened within a short time.

The changes in convergence rate: The differential coefficient should be derived from the stable coefficient of convergence rate in terms of k (the changes in capital efficient) in a particular time unit thereof the instant changes and stable convergence rate is obtained in a particular time.

The technological knowledge progress: The differential coefficient should be derived from knowledge in terms of stable convergence rate and out of the coefficient obtained, the technological progress of knowledge in stable status is obtained:

$$\delta\mu/ \ \delta k\theta$$

Furthermore, the differential coefficient should be derived from each of the parameters of population, efficient workforce, knowledge, depreciation by putting them in the main stability formula. The obtained parameter shows the stability out of which the differential coefficient could be derived with respect to the parameter with stability from the current stability obtained in order to determine the percentage of the growth of the situations before and after stability.

Population: Malthus theory has shown that population grows by geometric progression. As is evident, the resources are stable and a factor of restriction of resources could be defined regarding the growth of the population (per time unit). Therefore, if the formula was changed to: population + landa+ resources restricted, obtained the langrage out of which changes in stable population utility changes parameter is resulted, and differential coefficient was derived regarding a particular time with stable convergence rate, the resulted parameter would be stable population efficient.

$$1^*n+\pi(\tau)=\delta te^*\delta k\theta$$

The efficient population, and work force with removal of income tax and a positive shock considering the integrity of currency rate and increase in convergence rate of the country.

As mentioned earlier, the population is an infinite factor and halts the growth. In order to bring about balance, it should be converted to a finite factor in the unit of time efficient. Whenever the population rate has an increasing growth, the workforce efficiency decreases because the environment resources are about to decrease and consequently the wages will decrease which has demotivating effects for increasing knowledge and leads to a stable growth especially in closed economy.

The efficient time within population: The government decreases the population by a positive shock in a particular time when the population is more than eficiency and returns it to its former status with an instant shock.

Stable effective workforce: the differential coefficient is derived from the stable population in terms of convergence rate of stability changes. The obtained results show the work force efficient per stability and the risk of removal of income tax.

$$1 \times n + \pi(\tau) = \delta te \times \delta k\theta / \delta AL$$

Assuming that there is no government and the economy is closed, the population is increasing, and economic growth is halted, the increase of sustainability consumption per risk could be reached by optimization and linearization of the convergence rate. Increase in sustainability consumption – sustainable convergence rate+ risk per particular unit of time+ ג (the coefficient of stable convergence rate per a particular unit of time+ stable technological progress+ stable population+ the principle of successive depreciation).

$$k(te) + \mu(\theta te) + n(\theta te) + \delta\theta(te)) \; \text{ג} + (C(te) = k(te) + \theta(te)$$

Depreciation stability: Any equipment has a depreciation time which after that time, according to the principle of succession and acceleration, a capital is replaced with the depreciated equipment and increases the relevant expense thereof. Consequently, the ratio of saving to capital decreases. Considering the stability equation, the depreciation should be multiplied in the main equation and differential coefficient should be driven in terms of convergence rate out of which the sustained depreciation is obtained. These changes reveal the increase of convergence rate. Out of stability equation, savings are resulted. Savings of higher expense margins and substituting them with lower expense margins increase the deposits and savings in open economy to a significant degree, using the risk of removal of income tax in a particular time.

$$Y = \delta \; c(-\theta(t) - pv(t) * te \; (/\delta k) \; * \delta = \delta k\theta / \delta\delta * k - \delta k / \; k$$

CONCLUSION

In this research the optimization of convergence rate is investigated with the risk of removal of income tax and the integrity of currency rate (static and dynamic), the goal of which was increase in the welfare of the workers, economic growth, and per capita income. The focus of the current project was mostly on a particular time for management of risk and development of convergence. The sign *te* was used in this project to show the effective time for the positive shock, which increases the risk taking. In this project, the instant positive shock models, particular time, integrity, risk, TFP, and TE were investigated and the obtained results show thst the more the stability convergence rate of multi-national companies (knowledge progress, enjoyment, work force efficient) the more the people's affordability and welfare of

consumption to a significant degree. It is noteworthy that the risk of integrity of currency rate as well as removal of income tax are two of the main factors contributing to increase in convergence rate stability which are not considered in Solow's growth model. The convergence rate stability was obtained using the maximum consumption formula vis a vie the restriction of income tax removal risk in a particular efficient time and assuming integrity of currency rate (dynamic model), and closed economy (static model), the sustainable convergance rate could be obtained.

Since environmental resources are one of the ways of increasing per capita income and increase in energy enjoyment, causes pollution and climate change, and hinders economic growth, the goals of the subsequent researches will be about completing the optimization of convergence rate, sustainable encrypting, and optimization of an influential parameter to energy growth models efficient regarding pollution limitations.

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