

Investigation of causality between financial development and economic growth in Iran: nonlinear Markov Switching MS-VAR Approach

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Abstract

The main objective of this paper is the investigation of nonlinear causality relationship between financial development and economic growth in Iran over the period 1973-2010. For this purpose, Markov- switching technique has been applied to investigate causal relationship. In this study, GDP per capita as economic growth and the composite financial index including the ratio of credit to private sector, the financial depth, the ratio of credit provided by the banking sector and the ratio of gross domestic savings to GDP as financial development index have been used. The empirical results indicate that during the period of high economic growth (regime 1), there is one way causal relationship from economic growth to financial development theory, but there does not exist any causal relationship between economic growth and financial development during the period of low economic growth (regime 2). Therefore, financial development in both regimes had no effect on economic growth.

JEL Classification: G92 •C34 •C58.

Keywords: composite financial development index, economic growth, Markov switching model, nonlinear causality.

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Economic compatibility in the Eurozone and its role in Euro Crisis

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Abstract

One of the necessary preconditions for the establishment and stability of optimal currency area is the homogeneity of the economic structure in member States. With Eurozone currency crisis, the question arises whether the economic structures of the Eurozone countries were homogeneous? In this regard, the current paper studies this issue by using an econometric model and then estimates it through panel data method. The results showed that the level of economic development has a critical role in multiplicity of economic factors affecting the intensifying of business fluctuations and the currency crisis. Accordingly, Germany, because of having a current account surplus and high GDP per capita, is considered as the model country in the area. Then we have investigated the effects of reduction in structural differences between Germany and other countries on the business fluctuation. The results show that in the countries including Belgium, Finland, France, Italy and Spain, decreasing the difference with Germany (increasing) in credit of the banking sector, savings, consumption and labor force participation rates, will intensify trade volatility in these countries. Also, in countries including Cyprus, Greece, Portugal, Estonia, Slovakia, Malta, Latvia, Slovenia, decreasing the difference with Germany (increasing) in banking sector credit, government spending and fixed capital formation, will lead to an increase the volatility of balance trade in these countries.

JEL Classification: C23, E20, E32, F15.

Keywords: business fluctuations, economic structure, Euro zone countries, Panel data.

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A survey of spatial interaction neighboring effects on fluctuations of trade: spatial panel data econometric method and wavelet smoothing

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Abstract

The main objective of this study is to evaluate the spatial effect on fluctuations of trade based on the Spatial Panel data using Econometric Method and Wavelet Smoothing bilateral trade weighted matrix. The negative spatial dependents are estimated using data from 34 most-important countries over the period of 1980-2010 by Spatial Model and Maximum likelihood Estimation method (ML). So that, an increase by one percent in trade fluctuations in neighboring countries causes 0.62 percent increase in trade fluctuations of each country in the reverse direction, respectively. Evaluation and interpretation of the results of spillovers elasticity of trade fluctuations showed that with the sudden increase in growth rates, prices and GDP of neighboring countries reduce, and with a sudden drop in income, and nominal exchange rate, and share of imports of raw and intermediate commodities from total imports and the share of agricultural and food exports of total exports and geographical concentration of neighboring countries, trade will reduce in the own countries. Comparison of the spatial estimation with standard regression estimates showed that the spatial effects will cause OLS model face bias.

JEL Classification: F15, R12, E32, C21.

Keywords: biorthogonal wavelet, panel, spatial interaction, spatial durbin model, trade instability.

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Economic capacity utilization rate in Iran's electricity generation industry during 1350-1388

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Abstract

This study aims to estimate economic capacity and, in turn the utilization rate of economic capacity in Iran's electricity generation industry during 1350-1388. Aggregate time series data for thermal power plants are used. With parametric restrictions for linear homogeneity in input prices imposed, capital demand function is first derived and estimated. This allows the derivation of economic capacity. Then, the utilization rate of economic capacity in Iran's electricity generation industry is obtained by dividing actual generation by economic capacity. Finally, the modeling and estimation of the (economic) capacity utilization rate function permits us to investigate the effects of various factors on the utilization rate of the generation industry. Our results point to the existence of a large difference between utilization rates as defined by engineering and economic perspectives. The economic capacity utilization rate for most years during the period of analysis is smaller than one, indicating that actual generation is less than economic capacity.

JEL Classification: D21, D92.

Keywords: capital demand function, economic capacity, economic capacity utilization rate function, electricity generation industry, engineering capacity.

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Iran's position in the world trade: A network approach

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Abstract

In the last decade, many applied studies were done in economic social systems phenomena by using network analysis. In these studies, trade relations can be considered as a network where each vertex represents a country and the trade relations between countries represent links of this network. First, we try to make the world exporting and importing networks based on the existence data for 104 countries for the years 2000, 2005, 2010 and 2011 and then network properties and topology will be studied based on the network science. Studying the role of Iran and its positions in these trade networks will be calculated and we compare Iran with other important countries in these networks. Based on the obtained results, all of the constructed trade networks have power distribution and high clustering coefficient in all years and this study confirms that the world trade networks are complex networks. In addition, based on the obtained results from betweenness centrality, Iran is a middle class country in the world trade network. Also, Iran's score in eigenvector centrality confirms that contrary to the important countries' trade partners in these trade networks, most Iran's partners do not trade much with other countries in the network.

JEL Classification: F10, F14.

Keywords: betweenness centrality, complex networks, eigenvector centrality, world trade network.

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Estimating investment risk in an asset portfolio in Iran

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Abstract

This study attempts to use value at risk, or VAR widely known as risk measurement criteria in household portfolio. To do this, the data which have been used are related to the asset price including: bank deposit, bonds, stock, exchange, coin, land and housing over the period of 1997 to 2011. In this research, VAR is calculated in the confidence level of 90%, 95%, and 99% and over the time periods of one year and 14 years. After calculating returns, return standard deviation, correlation coefficient among assets, VAR of every asset is extracted by using mean-variance model, MATLAB software, and optimal mix of assets in household portfolio. Assets portfolio risk is calculated by VAR method. The result indicated that over the time period of 14 years, there is the highest portfolio risk of 43/77% with the probability of 99% for high risk people and the lowest portfolio risk of zero% with the probability of 90% for low risk people. In one year period, there is also the most portfolio risk of 16/92% with the probability of 99% for high risk people and the lowest portfolio risk of 0/13% with the probability of 90% for low risk people.

JEL Classification: E00, G11, G32.

Keywords: optimal portfolio, return, risk, Value at Risk (VAR).

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Distribution of the strongest players' free riding strategy in networks

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Abstract

Analyzing free riding problem through static games considering homogenous players has resulted in choosing the free riding strategy as a dominant strategy for the players. In this paper, free riding strategy is analyzed through cooperation game imposing non-homogenous players using network models. Players would be differentiated by their links with their neighbors in the game. Network models are used for the analysis; the strongest player is the player with most links in the model. Studying the consequences of choosing free riding strategy by the strongest player is the foremost concept of this work. After proposing definition for strength of players, we continue to examine distribution of choosing free riding strategy by the strongest player. Due to the strength of the well-linked player and the structure of networks, results would be different in terms of having monomorphic or polymorphic final forms. In addition, we continue the discussion using the proposed model to analyze the decision in 166th OPEC meeting on Nov. 2014 regarding maintaining production level as agreed in Dec 2011.

JEL classification: D71, D85, F53.

Keywords: evolutionary games, free riding, OPEC, small-world network, strong player.

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Optimal asset allocation in the presence of macroeconomic uncertainties

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Abstract

Uncertainty is an important driver of investment decisions. In the real world, uncertainties associated with economic factors are inherent in the economy giving rise to risk and uncertainty in decision environment thereby affecting the investor's behavior. The current study addresses an estimation of investor's optimal portfolio under conditions of uncertainty by using a combination of artificial neural network and Markowitz models. For this purpose, such assets as stock prices, housing prices, gold and bonds price are used with monthly data over the period 1999-2013. Three variables including inflation uncertainty, oil uncertainty and free market dollar rate are used as state variables to investigate the impact of macroeconomic shocks on investor's decisions when choosing an optimal portfolio. Autoregressive conditional heteroscedasticity (GARCH) is used to estimate state variables. Following an estimation of the state variables, assets return and uncertainty were measured using Multi Layer Perceptron (MLP) and Radial Basis Function (RBF) neural networks. The results obtained from neural network model are used as input variables in estimation of Markowitz's optimal portfolio. The results of analyzing mean variance show that housing is the dominant asset among uncertain assets over the period of real-estate boom holding the largest share of assets. Over the recent periods, considered to be the period of housing downturn, investors no longer include housing in their portfolio turning instead of stocks and coins as prominent alternatives. Generally, bonds have shown to be an asset with no uncertainty in all the periods making them a reliable alternative in the investor's optimal portfolio.

JEL Classification: G11, G14, D81, C45.

Keywords: artificial neural network, dynamic optimal portfolio, housing, macroeconomic uncertainty, Markowitz's analysis.

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Private return of education in urban areas of Iran: A quantile regression approach

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Abstract

Evidence from Iranian Households' Expenditures and Income Survey (IHEIS) in urban area shows that, average of real hourly wage against the schooling years is declining in the right tail of wage distribution between 1384 and 1390 (2005 and 2011). A tentative justification for this observation is that the private rate of return to education at upper quantiles and higher years of schooling has reduced over the period. We estimate a Mincerian generalized wage equation by making use of quantile regressions with controlling sample selection problem. Results indicate that the private rate of return to education has decreased between 1390 and 1384. Also educational attainment reduces wage gap between the upper and lower deciles for females, however a reverse relation is observed for males.

JEL Classification: J31, J23, J24, I21.

Keywords: private return to education, quantile regression, sample selection bias, wage inequality.

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Investigating relationship between gross domestic product and ecological footprint as an environmental degradation index

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Abstract

The ecological footprint is a useful tool that can be used to inform the public about the pressure on ecology and the environment. Also, by measuring this tool, policymakers can design and implement the necessary programs to help reduce that pressure. In order to measure the potential impact of future activities and policies of development programs on the environment, it is necessary to study the short and long term relationship between ecological footprint and economic development. The purpose of this study was to investigate short-term and long-term relationship between per capita GDP and per capita ecological footprint in Iran for the period of 1965-2011; to do this, the Autoregressive Distributed Lag Model (ARDL) was used. The results show that the increase in per capita GDP has positive impact on per capita ecological footprint both in short-term and long-term. The error correction coefficient obtained from the estimation of Error Correction Model shows that 73% of disequilibrium in per capita ecological footprint is adjusted after each period and becomes close to its long-term trend.

JEL Classification: Q01 ‘Q56.

Keywords: ARDL, ecological footprint, economic development, long-term, short-term.

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