

The model for measurement of the impact concerning the economic policy uncertainty on the tax capacity of e-commerce

Mostafa Pahlavan^a, Fatemeh Sarraf^{a,*}, Mohammad Reza Asgari^b, Roya Darabi^a

^aDepartment of Accounting, Faculty of Economics and Accounting, South Tehran Branch, Islamic Azad University, Tehran, Iran

^bDepartment of Accounting, Faculty of Management and Accounting, Imam Khomeini Memorial Unit, Islamic Azad University, Tehran, Iran

(Communicated by Mohammad Bagher Ghaemi)

Abstract

The role of the capital market in the economy of all countries is fundamental and decisive. It has a significant effect in aggregating and moving resources towards production and economic activities. According to the existence of such markets, the collection of small and large financial resources from the members of the society is facilitated. Therefore, this research is aimed at providing a model for measuring the impact of economic policy uncertainty on the tax capacity of e-commerce. In this research, 40 variables affecting economic policy uncertainty were included in the model. Finally, using the Bayesian averaging model approach, the most important variables affecting this index were determined. According to the results of the BMA model, the most important variables affecting the economic policy uncertainty index are the real interest rate, government debt to the central bank, liquidity (M2), inflation, current expenditures, land price index in urban areas, unofficial exchange rate, real exchange rate, Economic growth and oil revenues were determined. Based on the principal components approach, we calculated the economic policy uncertainty index using the most important variables affecting this variable. Then, by using the GARCH model, we extracted the uncertain part of the economic policy uncertainty index, and finally, by using the powerful non-linear TVPFAVAR model, we analyzed the shock caused by the economic policy uncertainty variable on the tax capacity in the field of e-commerce in the research period. We analyzed. The results indicated the fact that the shock caused by the variable fluctuation of economic policy uncertainty has increased the tax capacity in the field of e-commerce in recent years.

Keywords: Economic Policy Uncertainty, Tax Capacity, Electronic Business
2020 MSC: 91B64

1 Introduction

Investors' uncertainty about the company's value is one of the main reasons for many investors' reactions and management activities. On the one hand, along with the causes that affect investors' uncertainty, there is a type of uncertainty that cannot be under the control of managers and investors and strongly affects the value of companies, and that uncertainty is about the government's economic policies or "Uncertainty of economic policy", which can affect all activities of companies [39]. In economic literature, uncertainty causes different economic sectors such as consumers or

*Corresponding author

Email addresses: mostafa_pahlavan@yahoo.com (Mostafa Pahlavan), aznyobe@yahoo.com (Fatemeh Sarraf), asgari@iausr.ac.ir (Mohammad Reza Asgari), royadarabi110@yahoo.com (Roya Darabi)

companies and other economic enterprises to lose the ability to predict and plan for economic processes and events that will happen in the future. Uncertainty in various economic fields such as decision-making, stock portfolio management, etc. is an influential factor at different levels. Different amounts of uncertainty affect macroeconomic indicators such as the market volatility index in the valuation of assets and the capital market, as well as the time frame in which economic experts are able to predict economic events; Therefore, it is necessary to examine the degree of uncertainty in macroeconomic indicators for decision-making in different economic sectors and economic enterprises [26].

Electronic commerce has made it difficult or impossible for tax officials to view information and implement taxes. Tax payers may disappear in cyberspace and no one knows where they really are. Even when the location of a permanent establishment of an internet merchant is recognized, it will be difficult to tax it because the time and place where the transaction takes place is uncertain. Tax losses are such trade-offs, although this amount is not very high even in developed countries. But it must be said that such exchanges are growing and developing exponentially due to the attractiveness and benefits they create for individuals and companies, and therefore it is necessary that we think of a solution before facing the action. Are. Many public finance economists are of the opinion that three general criteria of efficiency, justice and executive costs should be used to evaluate a tax system [50]. There are two distinct aspects in the tax system for equality or justice. "Horizontal justice" which refers to the same taxation for people in the same situation and "vertical justice" which refers to the different tax treatment of people in different situations because low-income households generally receive more VAT. They use their income. And therefore, they pay a higher percentage of their income in the form of taxes [4]. Digitizing every aspect of an electronic exchange affects vertical justice, because high-income consumers are more likely to have access to the Internet and Therefore, they have more chances to avoid paying taxes; But exempting e-commerce (or electronic products) from consumption tax may exacerbate the reduction because the exemption benefits the rich more than the poor. Applying taxes that maintain the balance between economic efficiency and justice is not a costless task. Tax collection requires the consumption of resources by tax officials. In addition, taxpayers also incur costs to support the tax system. The cost of tax collection is equal to the sum of the tax collector's budget, the value of time and money paid by taxpayers, and the cost of the collection process by a third party, such as employers who pay their workers' taxes. Therefore, in choosing a tax system, one should consider the administrative bill and the costs of compliance [50].

Also, tax as a part of government revenues plays an important role in the economy of every country. Knowledge of the amount of tax revenue collection plays an important role in forecasting the government budget and future plans for its distribution and consumption. Today, the role of tax systems in any country in securing revenues from the place of collection of tax resources is not hidden from anyone. The increasing progress of science and the use of new communication and information tools have made the need for computers and the Internet necessary. The evolutionary process of tax assessment in the advanced countries of the world shows a significant reduction in the use of traditional tools for tax assessment and the use of electronic tax. Since the implementation of plans related to e-commerce in the country is one of the main goals of the e-government, topics such as the "electronic tax" system were especially important in the country from the beginning and many investments were made on it. Today, one of the most obvious signs of electronic government in advanced countries is the interaction of citizens with the government in tax systems, in which the tax affairs organization of our country has taken measures so far, and of course, it still uses old and paper systems [24].

In addition, tax evasion and tax avoidance are two phenomena that probably date back to the provincial tax phenomenon itself. Whenever and wherever rulers have decided to impose taxes, individuals and companies have sought to escape or avoid paying them. This phenomenon is expanding in the current era, which is also known as the digital era, and the opportunities of these units have increased, and at the same time, the possibility of identifying them has also become more difficult. There are many different reasons for explaining tax evasion that have been analyzed theoretically and empirically [43]. On the other hand, tax revenue is the most important source of government income in many countries of the world, and in Iran, after oil revenues, it has the largest share in providing government expenses. E-commerce is growing at a high rate globally. Surveys show that Iran's e-commerce volume reached 639 thousand billion tomans in the first half of 2019. According to the report of the first half of the e-commerce development center, this figure has grown by 284% compared to the first 6 months of 2018. Of these statistics, more than 447 thousand billion tomans are related to purchases through the internet portal, and more than 191 thousand billion tomans are related to the on-site payment method. Considering such growth in e-commerce, it seems important to address the issue of e-commerce taxation. The purpose of this article will be to estimate the tax evasion of e-commerce in a systematic way. Tax evasion of individuals and economic enterprises is the most important obstacle in increasing the level of tax revenues compared to the total tax capacity of the country. There are no official statistics regarding tax evasion. But a more important issue is that taxes are levied in Iran and other countries due to the creation of security in the society, etc., and direct taxes are one of the taxes that are levied on business owners, and electronic

businesses must pay the type of tax, but the way it is calculated is based on parameters that are different from traditional businesses due to the different environment of activity. On the other hand, tax exemptions are provided in the countries of the world for the purpose of macro-policies such as the growth of regions or certain industries, and in Iran, the majority of tax incentives are tax exemptions, which are also considered for electronic and knowledge-based businesses [6].

On the other hand, the tax capacity provides the necessary information about the economic power of the country in equipping tax resources to respond to financial problems and implement economic policies. One of the most important requirements on which the present research is based is the estimation of the tax capacity of the country's e-commerce sector and appropriate measures to increase tax collections. The e-business tax challenges report indicates that the cost of online businesses is different from traditional or offline businesses; For example, due to economic sanctions, different costs are paid for buying a server or using different certificates and advertising on Google, which has caused virtual businesses to have different costs from traditional businesses; On the other hand, in electronic businesses, new technologies and training should be used on a permanent basis, while the tax affairs organization rejects these cases and does not accept these costs. On the other hand, the awareness of managers and government officials, especially in the tax sector, is the most important issue that is raised about virtual businesses. According to the E-commerce Development Center, tax evasion in virtual businesses is less than other businesses because they operate in a completely transparent manner and it is possible to monitor this category of businesses [6]. Considering the importance of the discussed topics as well as the existing research gap in the field of investigating the relationship between the uncertainty of economic policy in the country and the estimation of the tax capacity of the e-commerce sector, the present research aims to answer the main research question that "What effect does economic policy uncertainty have on estimating the tax capacity of e-commerce in companies listed on the Tehran Stock Exchange?"

2 Theoretical foundations

2.1 Uncertainty of economic policy

One of the prominent features of any economic environment is environmental uncertainty, and correct and rational decisions are made based on information that explains the risk and conditions of certainty, or at least helps to understand it, and in fact, what exists in our real environment today. This is that we may only have an environment with complete certainty in a vacuum, and the environment around us is an environment with uncertainty; Therefore, it is necessary for us to know more about the word uncertainty and its effect on the information based on which we make decisions. Uncertainty is an environment in which the decisions of economic actors, including households, companies and the government sector, are accompanied by uncertainty in various fields. In expressing the concept of uncertainty, it can be said that the future events or the probability of their occurrence are not predicted. Uncertainty exists when either the future events are not clear or known, or even though the future events are known, their probability cannot be predicted. In other words, the main cause of uncertainty is the lack of predictive knowledge [13]. In fact, uncertainty is said to be a state in which people's knowledge is limited and it is not possible to fully explain the state or the result that has been obtained or will come. Based on this, uncertainty in macroeconomics can be explained by agents' inability to accurately predict the results of their decisions [44]; Therefore, uncertainty means that in a certain situation, a person cannot sort the information quantitatively and qualitatively in a way that is suitable for explaining, predicting and presenting a verdict in a certain way and in a quantitative (numerical) form. Lack of information is the most common cause of uncertainty [3]. Various definitions have been presented in the field of environmental uncertainty, for example, Slocum et al. [48], They state that environmental uncertainty is a kind of inability to predict the possible results of a decision. Environmental uncertainty is the conditions on which organizations adjust their framework and is caused by environmental factors of the organization, which is related to the degree of change that environmental activities in relation to the organization's operations include unpredictability related to the activities of customers, suppliers, competitors and legal entities. . Uncertainty in macroeconomics can usually be investigated in cases such as inflation rate, interest rate, currency, economic growth, exchange rate and stock value. Considering that the uncertainty of economic policies causes changes in the risk and returns of shares of companies active in the stock market, we will continue to examine the type of risk and the risk position of the uncertainty of economic policies (systematic risk), on the changes in the behavior of share returns.

2.2 Fiscal capacity

Musgrave [38], believe that every government's need for financial resources to fulfill duties and responsibilities such as providing and protecting borders, providing goods and public services, positive and negative consequences,

and economic stabilization causes that They should act in various ways to provide resources. In this regard, tax is the most important way to provide credit since the beginning of the formation of societies and governments. Apart from its main role, i.e., providing financial credit to the government, tax also has other key roles such as economic stabilization, reducing economic fluctuations, directing activities, and redistributing income. Therefore, the estimation of tax capacity is important for understanding the general situation of tax behavior and identifying how to increase tax revenues. What is inferred from the concept of tax capacity is the amount of potential taxes that a country or region can receive in any time period of a country or region, considering the tax bases and monetary volume of economic activities, which is a very accurate reflection of the tax base. not, but due to the lack of a more appropriate alternative standard, GDP is used as the main tax base in a country or region [22].

Fiscal capacity is actually the amount of tax that the society can afford to pay, and this ability is based on income, consumption and investments on the one hand, and on the other hand, it is based on long-term goals and short-term and medium-term planning. When it is stated that the tax capacity of the country is equal to A rial, this capacity is necessarily determined according to the optimal tax limit, and this is the reason why the optimal tax limit and tax capacity are used as equivalent terms. The effectiveness of the tax system can be carefully examined and commented upon when the tax capacity of the society is accurately estimated and then the estimated tax capacity is compared with the collected taxes. Economists usually use the ratio of taxes to GDP to evaluate tax performance. In fact, the tax ratio that is predicted shows the average tax performance which is considered as tax capacity. According to another definition, tax capacity is the economic capacity of a country to withstand the pressure of various taxes; In other words, it is the amount that people can pay taxes. There are many definitions about the tax capacity, but in general, it can be said that the tax capacity is the maximum tax that can be collected in a long-term period according to the level of income distribution, its composition and the existing laws of each country. Determining fiscal capacity is a difficult task. The most important means of measuring the fiscal capacity is the per capita income of the people of a country. On the other hand, the tax capacity or the tax ratio (the ratio of taxes to GDP) is an index for comparing the tax performance of countries. The tax capacity of the national income is the financial capacity of the national income, which causes the creation of tax revenues within the framework of the existing laws. This capacity can be evaluated in different human, economic, political and legal limitations [16].

In other words, the tax capacity of any country enables the necessary information about the economic power of that country to equip tax resources so that country officials can solve financial issues and problems and also implement appropriate economic measures and policies. Another definition of tax capacity is the amount of potential tax that any country can earn, according to different income bases and economic activities. In every economy, the tax capacity is a function of influencing factors and is calculated based on it. However, in contrast to the potential tax, there is an actual tax whose tax collection is different from the actual tax to be earned. In other words, the actual tax is the existing tax collections [40].

To design a good tax system, it is necessary to establish a balance between economic efficiency, justice and administrative costs. Governments and international organizations such as the Economic Cooperation and Development Organization usually believe that electronic commerce should be taxed in accordance with the standard principles governing provincial taxation of traditional commerce. Since online stores are considered to be an economic operator in the virtual space and buying and selling of goods is done only in the internet space and the type of transactions are not much different from the real world, then the owner of the online store is like the sellers in the stores. Physicists must follow the relevant laws and regulations [15]. According to the Center, taxes are collected in Iran and other countries due to the creation of security in society, and direct taxes are one of the taxes that are collected from business owners, and electronic businesses must pay this type of tax, but how to calculate It is based on parameters is different from traditional businesses due to the different atmosphere of activity; On the other hand, tax exemptions are provided in the countries of the world for the purpose of macro-policies such as the growth of regions or certain industries, and in Iran, the most important tax incentives are tax exemptions, which are also considered for electronic and knowledge-based businesses. is taken [27].

The report on the tax challenges of electronic businesses indicates that the cost of online businesses is different from that of traditional or offline businesses. On the other hand, in electronic businesses, new technologies and training should be used permanently, while the tax affairs organization rejects these items and does not accept these costs. On the other hand, the awareness of managers and government officials, especially in the tax sector, is the most important issue that is raised about virtual businesses. According to the announcement of the Electronic Commerce Development Center, tax evasion in virtual businesses is less than other businesses because they operate in a completely transparent manner and there is the ability to monitor this category of businesses; The Electronic Business Development Center of the Ministry of Security has emphasized that it is ready to cooperate to solve the tax challenges of electronic businesses; These businesses must pay taxes like other businesses, but their tax payment model must be appropriate

so that the rights of virtual businesses are not violated. When a government adds a new tax to its tax system, it needs to make sure that the share of the double tax is large enough to the total tax revenue. To know the magnitude of the new tax revenue, we will use the Tenzi evaluation criterion. This criterion states that the additional income from a new tax should be more than one percent of the total tax income. In addition, if the tax on the consumption of electronic commerce is determined with multiple rates, the government should also worry about the concentration index [46].

2.3 Collecting taxes from electronic commerce

Udomvitid [50], stated that governments and international organizations such as the Economic Cooperation and Development Organization usually believe that electronic commerce should be taxed in accordance with the standard principles governing provincial taxation of traditional commerce. Therefore, in 2000, this organization presented a report in which the necessary conditions for the implementation of the electronic commerce tax framework were stated. In fact, the same principles of taxation that guide governments in traditional business should be used to guide electronic business. These principles of provincial taxation are intended to be enforceable under the existing technologies and at the same time do not hinder the progress of information technology and the development of electronic commerce. Although governments are worried about tax erosion caused by electronic commerce. But so far, in no country has a special tax for electronic commerce been applied and collected. This is because preventing the loss of tax revenue caused by electronic business cannot be a sufficient reason for a government to add a new electronic business tax to its tax system. Research shows that the loss of tax revenue caused by e-commerce is very low and there is no need to apply a new e-commerce tax on e-businesses. Another issue is tax evasion. The difference between tax avoidance and tax evasion is that the former is legal while the latter is illegal. Measuring tax evasion is a difficult matter because people hide or do not report their illegal income from illegal businesses such as drug sales or prostitution. Another reason for hiding income is that it is easy to hide some economic activities, such as renting a house, from tax officials. Accordingly, Schneider et al. [45], consider taxes to be one of the most important factors in the growth of the shadow economy. According to them, taxes have an effect on choosing the amount of leisure and the supply of labor in the shadow economy or a part of the economy that is not taxed; Because the greater the difference between the cost paid by the company to the workforce in the formal sector and the shadow sector (more taxes are taken) or the company pays a larger contribution to social security, both the company and the workforce will have a greater incentive to operate in the shadow sector [2].

Also, studies show that the most important benefits and costs of imposing or not imposing a tax on e-commerce are related to issues such as the loss of government tax revenue, competition with retail sales, external effects, distribution effects, and administrative costs [31]. In fact, there are several primary arguments for imposing a sales tax on Internet transactions. Proponents of a sales tax on Internet transactions argue that lobbying organizations and political middlemen discourage lawmakers from imposing a sales tax on e-commerce. They see the imposition of sales taxes on Internet transactions as a preferred treatment for the economy, arguing that such treatments will lead consumers to choose e-commerce over traditional forms of commerce. Next, sales tax advocates argue that the lack of such a tax increases the digital divide. They argue that the only way to improve the economy in this area is to tax both e-commerce and other things at the same rate. Next, some argue that these sites need support to survive, but tax proponents argue that yes, small online retailers need support to survive, but giants like Amazon, eBay, and Orstock account for a significant portion of consumer purchases. They carry the burdens. As a result, there is no need to protect such companies with tax exemptions for their better growth. Finally, they argue that the tax collected from internet sites can be an important source of income for the government treasury. Given the growing state of e-commerce, states' inability to collect taxes on consumer purchases would have serious negative economic consequences, they argue. But in the meantime, some are against collecting taxes in this regard. People who oppose the collection of sales tax by online retailers consider the tax on e-commerce to be unconstitutional and unfair. The first argument these people make is that a sales tax on e-commerce will result in job losses and damage to small businesses. For example, many groups affiliated with Amazon were small businesses that because of the laws that the states established, Amazon cut off its relations with them and had a negative impact on their business. Another thing they argue is that since Supreme Court case law states that states can't tax a retailer unless there is a substantial relationship between the retailer and the state and because this link and relationship between the internet retailer and the taxing state does not exist, the law that imposes taxation on internet transactions violates the commerce clause of the constitution, as we mentioned, the commerce clause refers to section 8 of the constitution, which Congress gives power to regulate commerce with foreign countries and between different states. Their next argument is that imposing a tax on e-commerce is unfair because today's Internet retailers need more support to remain competitive and grow in the market. Opponents base most of their arguments on supporting these small businesses. For example, they point out that more than 17,000 small businesses in California have sent letters to lawmakers to show their opposition to collecting taxes and imposing

them on online retailers. These small businesses opposed the tax collection in the first place because many of these businesses made money by placing out-of-state advertisements on their websites, even though the bill stated that if someone advertised place it on California websites and there is a link to California, that business must pay taxes on all the income it has received in this regard [41].

The E-commerce Development Center of the Ministry of Security [6], also stated that the awareness of managers and government officials, especially in the tax sector, is the most important issue regarding virtual businesses. According to the e-commerce development center, tax evasion in virtual businesses is less than other businesses because they operate in a completely transparent manner and there is the ability to monitor this category of businesses; the e-commerce development center of the Ministry of Security has emphasized that it is ready to cooperate to solve the tax challenges of electronic businesses; These businesses must pay taxes like other businesses, but their tax payment model must be appropriate so that the rights of virtual businesses are not violated. The most important tax challenges of electronic businesses in Iran are as follows:

1. Non-acceptance of foreign documents in the tax office, including the invoice for the cost of the foreign server (host).
2. Lack of proper understanding of the complexity and diversity of electronic business models by the tax department
3. Failure to receive and accept part of the electronic documents by the tax department
4. Collection of taxes based on permits from the tax department. Absence of tax branches to deal with violations (specialized audit) for specific functions
5. Absence of an active economic code for some businesses and taxation based on it
6. Lack of relevant financial information for small and start-up businesses
7. Absence of integrated monitoring of e-business revenues and providing correct information to the tax office regarding different payment methods such as online payment portal, on-site payment and card-to-card [6].

Finally, it should be mentioned that the country's tax affairs organization announced the tax duties related to internet business owners by issuing a notice. Internet business owners (legal and natural persons) are also subject to tax regulations, like other economic operators, and regardless of where they operate, they must perform their tax duties in order not to be fined according to the relevant regulations.

2.4 Research background

Zhang and Xang [55], in a study investigated the effect of inflation uncertainty on the tax burden of companies. For this purpose, data from the period of 2011-2019 was used and the panel method was used to test the research hypotheses. The results showed that the higher the capital expenditure of the companies, the more tax burden they bear in the uncertain inflation conditions. Dang et al. [9], in a study investigated the uncertainty of economic policies, tax quotas and the tax burden of companies. The findings of the research show that economic policy uncertainty has a positive relationship with the company's tax burden, and the higher the tax quota, the greater the effect. In addition, it is found that the uncertainty of the economic policy strengthens the tax collection by increasing the financial pressure of the government and thus increases the tax burden of the companies.

Majoral et al. [32], have stated in a study, the number of e-commerce transactions is increasing worldwide. The delivery of goods purchased online has created side effects in the entire supply chain, and in particular, increasing concern about the distribution of goods. In this study, they analyzed the cost benefit of collecting taxes from electronic commerce. The results show that taxation can create positive results.

Damanik [8], stated that nowadays more and more economic activities are done with internet media. Electronic business with Internet media or more commonly known as e-commerce. Tax on e-commerce transactions is one of the tax potentials, the tax revenue potential for e-commerce transactions is huge. There are many obstacles in collecting taxes in e-commerce transactions and it is a challenge for the tax administration in determining its tax policies. The purpose of this study is to find out the tax compliance policy for e-commerce transactions. The method used in this study is a qualitative research method in which data has been collected using library studies. The results of this study showed that there are several conditions that make it difficult to tax electronic business transactions. So that the General Administration of Taxes uses the approval of tax regulations for e-commerce transactions as a policy to optimize the government's income from income tax (income tax) and value added tax.

Dell'Anno and Davidescu [12], estimated the size of the underground economy and tax evasion in the novel country for the period of 2000-2017 using the MIMIC method. The results showed that the informal economy acts as a substitute for the informal economy, while tax evasion complements the GDP. They have stated that the two phenomena

of informal economy and tax evasion lead to different results and consequences in response to business cycles, and therefore the policy maker needs different policy measures to deal with them.

Nagar et al. [39], In a research titled "Effect of Economic Policy Uncertainty on Information Asymmetry and Management Disclosure", by collecting daily data of companies in Tadah State between September 10, 2003 and December 31, 2016 and analyzing them, they found that the lack of Economic policy uncertainty is associated with increased information asymmetry and reduced stock price response to windfall gains. With increasing uncertainty, managers voluntarily respond to this uncertainty, as a result, the uncertainty of government economic policies has been an important component of companies' information environments and managers' voluntary disclosure decisions.

Ftiti and Hadhri [17], they studied the effect of economic policy uncertainty on investor information asymmetry and management disclosure. Investors' uncertainty about the value of the company causes the collection of investors' information and trading activities, as well as the types of managers' disclosure choices. This study examines an important source of uncertainty (uncertainty about government economic policies), which is unlikely to be influenced by most managers and investors. The findings show that this uncertainty is associated with an increase in the price gap and a decrease in the reaction of the stock price to abnormal profits. Managers respond to this uncertainty by increasing voluntary disclosure; but these revelations only partially reduce the gap between buying and selling prices. The results show that the uncertainty of the government's economic policies is an important component of the company's information environment and managers' voluntary disclosure decisions.

Mateen Fard and Chahar Mahali [34], investigated the effect of economic uncertainty on cash retention in a research. The empirical evidence obtained from the test of the research hypotheses indicates that there is a negative and significant relationship between the variables of economic uncertainty of the stock market index and the consumer price index with the cash holding level variable. Also the same result among variables of economic uncertainty was obtained with a one-year delay by keeping cash. Two research hypotheses were confirmed.

In a research, Karimi et al. [25], investigated the presentation and evaluation of the tax compliance model of legal entities based on the point of view of tax experts using the background theory in Iran's tax system. Considering the necessity of the subject, the purpose of the current research is to provide a model for tax compliance of legal entities based on the background theory in Iran's tax system. For this purpose, interviews were conducted with 25 tax experts including (deputies of tax affairs, heads of tax affairs and tax group and senior tax auditors) and using the grounded theory research method, a model including causal conditions, strategies, background conditions, conditions Interveners and consequences regarding corporate tax compliance in Iran's tax system were presented. Developing and facilitating the relationship between taxpayers and the tax administration using software tools and identifying the factors affecting corporate tax compliance, including cultural, economic and non-economic, is one of the achievements of this research, which helps to increase corporate tax compliance.

In a research, Sheikh and Mirzaei [47], investigated the effect of economic policy uncertainty on the tax burden of companies admitted to the Tehran Securities Exchange. The findings of the research showed that the political uncertainty variable had significant effects on the tax burden of companies.

And this is true in most countries of the world. On the other hand, nowadays, with the expansion of the functional areas of information and communication technology, virtual space and the Internet, in all areas of personal and social life of people, we are witnessing a new use of this technology in the economy. Traditional is transitioning to e-commerce. On the other hand, one of the new and potential sources of taxation is the collection of taxes from this large volume of electronic commerce, although the taxation of electronic transactions in our country faces many challenges, which due to the importance of this issue, the present study will examine and studying the challenges of collecting taxes from e-commerce and conducting in-depth interviews with tax elites, information technology and e-commerce and using the Delphi method in order to collect opinions and align the opinions of experts in these fields and achieve consensus. The main challenges of collecting taxes from electronic commerce in our country were counted in three dimensions: policy making, laws and regulations and executive processes and in 20 components. Then, in order to identify the most important challenges and evaluate the results of the previous stages, and by using the fuzzy Delphi technique, which is used in this research, the triangular fuzzy number 3, a questionnaire of the obtained challenges was prepared and given to the experts, and after three Evaluation load, prioritization of challenges was done.

Hajati et al. [22], estimated the income elasticity and tax capacity of Khuzestan province in order to make policy and regional planning based on the ability to pay taxes. For this purpose, direct and indirect tax revenues of the province were estimated using the method of seemingly unrelated equations in the period of 2013-2014.

The results show that the income elasticity of direct and indirect taxes of Khuzestan province is 1.09 and 2.77, respectively, and the income elasticity of all taxes is 1.34. In addition, in the direct taxes sector, the tax elasticity of wealth and real estate is higher than the tax elasticity of businesses and companies. The results show that the tax

capacity of the province's businesses has a positive and significant relationship with the added value of the restaurant and hotel sector, and per capita income. In addition, the relationship between the tax capacity of companies and the added value of the service sector is positive and significant. In addition, the relationship between the tax capacity of other direct taxes (wealth and real estate), with the added value of real estate and economic growth is positive and significant, and the relationship between the tax capacity of indirect taxes with the consumption expenditures of the private sector and the added value of the sector Mine is positive and meaningful.

Motallebi et al. [37], studied the results of the shadow economy and tax evasion by considering behavioral factors during the period of 2016-2016 in the economy of Iran. For this purpose, at first, different models were estimated, and among them, the final model with multiple causes-multiple effects (MIMIC) approach was selected. Then, by using external information and calibrating the time series, the relative size of the shadow economy and the absolute size of the shadow economy and finally the resulting tax evasion have been calculated. The results showed that tax spirit and import tax burden are the main causes of shadow economy. Therefore, unlike developed countries, the change in the tax spirit causes an increase in the shadow economy and tax evasion resulting from it, which indicates tax non-compliance in Iran. Also, the increase in the size of the shadow economy has the greatest effect on the household expenditure index and the energy consumption index.

Hajibabaei and Ghasemi [23], investigated the relationship between the development of e-commerce and tax evasion of commercial companies. The results of the research showed that there is an inverse and significant relationship between the development of e-commerce and tax evasion of commercial companies. Also, the development of e-commerce infrastructure, modification and development of structures, and development of products has an inverse and significant relationship with tax evasion of commercial companies, and the development of e-commerce infrastructure, modification and development of structures, and development of products simultaneously account for 0.21 of the company's tax evasion variance. The development of e-commerce infrastructure and the reform and development of tax structures are respectively the best predictors of tax evasion of commercial companies.

Hadian and Tadari [21], identified factors affecting tax evasion in Iran's economy using the ARDL model during the period 2010-2018. The results show that, in the long term, tax rate, complexity of laws and regulations, lack of social capital and inflation have a positive and significant relationship with tax evasion.

3 Methodology

This research is classified based on the purpose of applied research. In this research, in order to obtain data from the financial statements of companies admitted to the Tehran Stock Exchange, Kodal website (www.codal.ir) and Central Bank statistics will be used, and Excel software will be used to calculate the variables and process them. And in order to analyze the obtained information and achieve a reliable result, Eviews software is used. The statistical population of the research is all the companies admitted to the Tehran Stock Exchange Organization. The number of samples studied in this research will be selected using the screening method and according to the following criteria:

The end of the financial year of the studied companies is March 29. The companies did not change the financial year during the research period. The investigated companies entered the stock exchange before 1391 and did not leave the stock exchange until the end of 1400. It should not be a part of banks and financial institutions (investment companies, financial intermediation, leasing). The required financial information is available. In this research, independent and dependent variables are:

1- The dependent variable

2- E-commerce tax capacity

3.1 MIMIC approach

The structural equation model shows the relationship between the unobservable hidden variable and the observed indicators and causes (MIMIC). This model is widely used in many social sciences and economics. In economics, one of the first researches on the application of SEM method was done by Goldberger [19]. In his study, a special form of structural equations called multiple index and multiple causes has been used. In the following, this model is briefly introduced.

The multiple causes-multiple effects model is an econometric model and a special form of structural equation modeling, and it is the most common method for measuring hidden variables. The multiple causes-multiple effects model has a η hidden variable, which is assumed to have several causes and effects, and it is also assumed that the

η hidden variable has a linear relationship with the x_q causes and y_p effects. In the multiple causes-multiple effects model, an equation system similar to regression analysis is first introduced.

$$\eta_t = \gamma'x_t + \xi_t \tag{3.1}$$

Where $x_t = [x_{1t}, x_{2t}, \dots, x_{qt}]'$ the vector ($q \times 1$) of the cause variables is the η_t hidden variable and γ' is the vector ($q \times 1$) is of the described coefficients of the cause variables affecting the hidden variable and ξ_t is the error sentence. Model (3.1) is called structural equation, which is based on a regression model with a hidden dependent variable. Since it is a hidden variable and cannot be calculated directly. Therefore, the effect of the hidden variable on other obvious variables is considered. These variables are called artifacts, and their relationship with the hidden variable is as follows:

$$y_t = \lambda\eta_t + \varepsilon_t \tag{3.2}$$

Equation (3.1) is a measurement model, in which $y_t = [y_{1t}, y_{2t}, \dots, y_{pt}]'$ is the vector ($p \times 1$) of the effect variables and λ is the vector (p) of the descriptive coefficients between the η_t hidden variable and the y_t effect variable and ε_t is the error term of the measurement model, which assumes It is a $I(0)$ white smell. In equations (3.1, 3.2), it is assumed that the average of the ($E[\xi] = 0, E[\varepsilon] = 0$) error sentences is equal to zero, and there is no two-way correlation between the error sentences. In the multiple causes-multiple effects model, the variables $E[x_t], E[y_t], E[\eta_t] = 0$ are calculated as deviations from the standard. Therefore, in addition to the $E[x_t], E[y_t], E[\eta_t] = 0$ error sentences, it is assumed that there is no two-way correlation between the error sentences of the structural equation with the hidden variable causes. Also, it is assumed that the $E(x_t, \xi_t), E(\xi_t, x_t) = 0$ error sentence in the measurement model does not have a two-way correlation with the x_t causes and the η_t hidden variable $E(x_t, \varepsilon_t), E(\varepsilon_t, x_t), E(\eta_t, \varepsilon_t), E(\varepsilon_t, \eta_t) = 0$ (Klarić [28]).

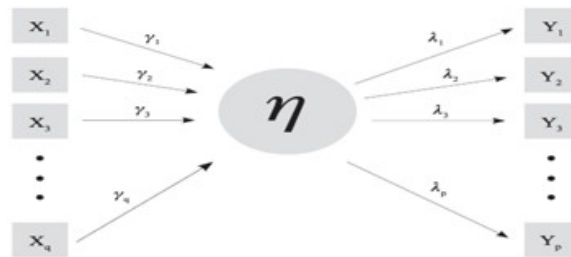


Figure 1: Showing the structure of the multiple causes-multiple effects model (MIMIC)

According to the diagram above, two sets of visible variables are connected through a hidden variable, which is a system of regression equations (3.3) below:

$$\begin{aligned} \eta_t &= \gamma'x_t + \xi_t \\ y_t &= \lambda\eta_t + \varepsilon_t \Rightarrow \lambda^{-1}(y_t - \varepsilon_t) = \eta_t \\ \lambda^{-1}(y_t - \varepsilon_t) &= \gamma'x_t + \xi_t \\ y_t &= \lambda\gamma'x_t + \lambda\xi_t + \varepsilon_t \end{aligned} \tag{3.3}$$

The system of equations (3.3) can be written in a summarized form:

$$y_t = \Pi x_t + V_t \tag{3.4}$$

In which $\Pi = \lambda\gamma'$ and $V_t = \lambda\xi_t + \varepsilon_t$ is the system of equations (3.4) faces the problem of identification. But if one of the λ elements is tied to a predetermined value, its factors can be estimated. Of course, in this case, only the relative values of the factors can be estimated. After that, by using λ vector estimation and equation (3.2), it is possible to obtain an ordered series of the hidden variable. This problem is easily solved by the rule accepted by Giles et al. [18]. Because the multiple causes-multiple effects (MIMIC) model cannot determine the scale of all parameters, therefore, the normalization condition is needed and the rule is to determine the first λ single element $\lambda = +1$ or $\lambda = -1$. If theoretically, the relationship between η and y_t is positive, it will be $\lambda = +1$, and if theoretically, the relationship between and is negative, it will be. If theoretically the relationship between η and y_t is $\lambda = -1$ ambiguous, according to Dai and Ngo [7], an error reduction strategy should be used to determine the sign of the λ scale factor. Because the

$\lambda = +1$ vector of structural coefficients of multiple causes-multiple effects model is a ratio of $\lambda = -1$ scale coefficients. When the sign changes, the structural parameters of the causes change from positive to negative and vice versa. But their absolute value will not change. It supports the relationship between the hidden variable and the reference variable. The actual estimation of the parameters in the MIMIC model is obtained using the covariance matrix of the model:

$$\Sigma = \begin{bmatrix} \Pi\Phi\gamma + \lambda\psi + \Theta & \Pi\Phi \\ \Phi\Pi' & \Phi \end{bmatrix}$$

(Klarić [28])

After estimating the parameters of the above model, using the estimation of γ vector elements in the form of a regression equation in which the relationship of the causes with the hidden variable is specified, the time series of the hidden variable is estimated in the form of equation (3.6).

$$\hat{\eta}_t = \hat{\gamma}_1 x_{1t} + \hat{\gamma}_2 x_{2t} + \dots + \hat{\gamma}_q x_{qt} \quad (3.5)$$

Because the hidden variable cannot be measured, the researcher should set the scale of one of the works as the scale unit of the hidden variable. The same work whose parameter is considered as unit. The estimated values cannot be interpreted in absolute terms, but they are evaluated and interpreted in relation to other parameters. The obtained time series is rank numbers. After estimating different models, the best model will be selected. In choosing the final model for measuring the latent variable index, two criteria are considered; the conformity of the signs of the parameters with the theory and their significance and with the significance of the whole model [53].

3.2 Independent Variable

3.2.1 Uncertainty of economic policy

Conceptual definition: economic policy uncertainty means uncertainty in decisions related to macroeconomic variables in such a way that by adopting policies and changes in economic and financial structures, it creates significant changes in the capital market [26]. Operational definition: Table No. (2) Will be used to introduce variables affecting economic policy uncertainty. In the following, we will introduce the models that will be used in the estimation of the model. In the following, BMA, TVPFAVAR and CFA models have been introduced.

3.2.2 BMA model

The distinctive feature of the Bayesian approach to inference is to attribute numerical probabilities to the researcher's degree of belief. Of course, the researcher's degree of belief about the correctness of a hypothesis depends on the amount of information he has at that moment. For example, in this method, based on mastery of the topic and the relationship between the variables, the conditions of the country under investigation, n variables are introduced as the most important variables affecting the variable dependent on the Bayesian averaging model. If the researcher's point of view is correct, the output results are positive. For example, Salai Martin et al. [42], in order to investigate the factors affecting economic growth in America, introduced 8 variables as factors affecting economic growth, and the output results of the model were consistent with the researcher's point of view. As a result, by changing the information about a phrase, the probability of correctness or incorrectness of the given phrase should also be revised [29]. The process of revising the probabilities by new information, denoted by y , is briefly shown in diagram (2) [54].

The prior probability density function related to H hypothesis is based on initial information. This information is usually a combination of previous data information, experimental studies, observations and theories. The posterior probability density function for new observations y is by hypothesis H . This probability density function is known as the correction function. To obtain the posterior probability density function, the prior probability density function should be combined with the correction function by Bayes theory. The posterior probability depends on both the

³ Considering that the Bayesian averaging method is based on the conditional probability approach, the meaning of primary information is the number of data based on which the prior distribution of data is extracted, and the meaning of new observations is the number of data that is added to the model after estimating the prior distribution. Based on the prior distribution information (conditional probability discussion), the posterior distribution is extracted.

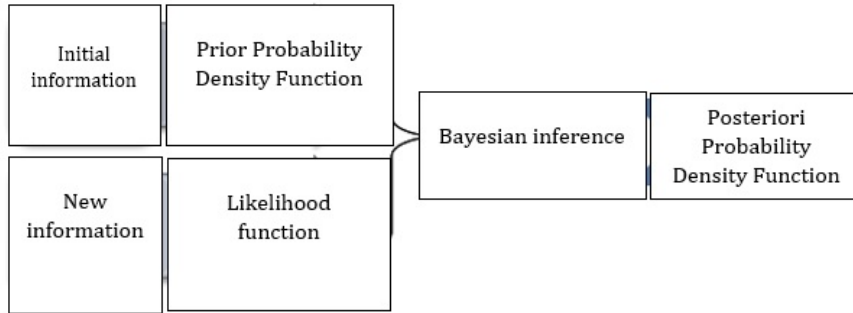


Figure 2: Averaging the Bayesian model³

Posteriori Probability I_0 and the sample information y , and with the effect that new data information has on the prior probability density function by Bayes theory, the prior probability density function changes into the posterior probability density function. It should be emphasized that the posterior probability includes the researcher’s opinion about the parameter, data information, and prior information [14].

3.2.3 TVP-FAVAR model

The estimation coefficients of the model used in this research can change over time, and in this aspect, it is different from the models used in the experimental studies mentioned in the previous section. The TVP-FAVAR model used in this research overcomes the weakness of linear models in terms of structural failures and cyclical changes in time series and provides the possibility of a more detailed examination of the relationships between model variables [49].

A number of researchers concluded that time-varying coefficients (TVP)⁴ in factor models lead to more accurate results [11, 33, 30]. Suppose x_t for $t=1, \dots, T$ is an $n \times 1$ vector of variables to estimate the unobservable variable in the model. In addition, y_t is a $s \times 1$ vector of observable macroeconomic variables in the model? The TVP-FAVAR model is as follows:

$$\begin{aligned}
 x_t &= \lambda_t^y y_t + \lambda_t^f f_t + u_t \\
 \begin{bmatrix} y_t \\ f_t \end{bmatrix} &= c_t + B_{t,1} \begin{bmatrix} y_{t-1} \\ f_{t-1} \end{bmatrix} + \dots + B_{t,p} \begin{bmatrix} y_{t-p} \\ f_{t-p} \end{bmatrix} + \varepsilon_t.
 \end{aligned}
 \tag{3.6}$$

In the above relationship, λ_t^y is the regression coefficients, λ_t^f is the factor variable coefficient and f_t is the factor variable. $(B_{t,1}, \dots, B_{t,p})$ are VAR coefficients. u_t and ε_t are model residuals that have a normal distribution with zero mean and covariance Q_t and V_t . Coefficients $\lambda_t = \left((\lambda_t^f)', (\lambda_t^y)' \right)'$ and VAR model coefficients $\beta_t = \left(c_t', \text{vec}(B_{t,1})', \dots, \text{vec}(B_{t,p})' \right)'$ are extracted according to a time-varying random step process:

$$\begin{aligned}
 \lambda_t &= \lambda_{t-1} + v_t \\
 \beta_t &= \beta_{t-1} + \eta_t
 \end{aligned}
 \tag{3.7}$$

where $\eta_t \sim N(0, R_t)$ and $v_t \sim N(0, W_t)$ All errors in relation (3.8) are uncorrelated with each other and over time, so they have the following structure:

$$\begin{pmatrix} u_t \\ \varepsilon_t \\ v_t \\ \eta_t \end{pmatrix} = N \left(0, \begin{bmatrix} V_t & 0 & 0 & 0 \\ 0 & Q_t & 0 & 0 \\ 0 & 0 & W_t & 0 \\ 0 & 0 & 0 & R_t \end{bmatrix} \right)
 \tag{3.8}$$

Relationships (3.7) and (3.8) are called TVP-FAVAR model. By applying several restrictions, other models are derived from the above model as follows:

⁴ Time-Variation Coefficient

1. Factor-Augmented Time-Varying Parameter VAR (FA-TVP-VAR): This model is obtained when the coefficients of the first equation in relation (3.7), λ_t are constant in all time periods $W_t = 0$ In this case, $\lambda_t = \lambda_0$.
2. Factor Augmented VAR Model (FAVAR): This is achieved when λ_t and β_t are constant over time ($W_t = R_t = 0$).
3. VAR model of time-varying parameters (TVP-VAR): This model is obtained when the number of factors in the model is zero (i.e. $f_t = 0$).
4. VAR model: This model is obtained when the number of factors is zero and λ_t and β_t are constant over time.

The Bayesian estimation of TVP-VAR and TVP-FAVAR models is performed using Markov chain Monte Carlo (MCMC) methods [36, 11]. Such Bayesian simulation methods are computationally heavy, even if the researcher estimates a single TVP-FAVAR model. When dealing with multiple TVP-FAVARs and when calculating regression forecasts (which repeatedly requires running MCMC on a wide range of data), the use of MCMC methods is prohibitive due to the high estimation execution time.

3.2.4 PCA approach

According to Ziegler et al. [56], the idea of the principal components approach goes back to Burns and Mitchell [5]. The main idea was to reduce the dimensionality in large datasets while preserving the original variance as much as possible. In this way, the major changes of many variables can be explained by a small number of common factors or external shocks. The principal component analysis (PCA) method, using orthogonal transformation, transforms observations from possibly correlated variables to uncorrelated variables. The new variables, the principal components, are a linear combination of the principal variables; but a smaller or equal number replaces them. Then the principal components are sorted based on their variance, where the first component indicates the highest variance. With this work, the uncertainty of the parameter is avoided to some extent, which is likely to be caused by poor forecasting performance. In general, the main application of the principal component analysis method is: reducing the number of variables and finding the relationship structure between the variables, which is actually the classification of the variables. The main advantage of using this method in econometrics is to eliminate the collinearity in the models due to the large number of effective variables in the model [10].

3.3 Development of the research hypothesis

Taxation of e-commerce based on traditional concepts is difficult due to the specific characteristics of the digital space. Paper is only sometimes used in electronic commerce, and because the buying and selling of goods and services in such an environment is often anonymous, especially when new payment tools such as electronic money are used, determining the location of the transaction, the volume of the transaction, and its amount. , the physical condition of the seller and the like is not possible for a tax authority. The lack of geographic boundaries in e-commerce raises legal issues that old ways of doing business never faced, and because web addresses do not reflect a person's actual address, it is not easy to determine the country where taxes are due. Determine whether to take or pay taxes. This makes tracking electronic transactions costly and even impossible for tax authorities. In addition, e-commerce is not limited by physical borders and people can do business in different countries. These two issues can be a threat to the financial income of countries. The more important issue is the competitive deviations between the modern economy and the traditional economy, which, if there are significant tax evasions in electronic commerce, will reduce the gross prices in this type of business compared to traditional business methods [31].

In fact, it should be kept in mind that e-commerce is one of the best platforms for tax evasion. This is while, in this regard, the government and tax authorities are forced to bear the costs of discovering and preventing tax evasion. For this reason, finding ways and methods that can identify and discover tax evasion has always been an important and challenging issue. If the government cannot detect tax evasion, public investments will be negatively affected due to the reduction of taxes and the subsequent reduction of government revenues [52]. The statistics and images created in an efficient and fair tax system can itself be a software and scientific controller to improve the level of economic efficiency and the transparency of information published in different economic areas of each country [1]. According to the topics raised; the hypothesis of the current research is as follows:

Hypothesis: The uncertainty of economic policy has a significant difference on the tax capacity of e-commerce.

4 Research findings

4.1 Bayesian averaging model results

In this section, the goal is to regress all possible states of the presence of 40 variables affecting economic policy uncertainty. According to Salai and Martin's point of view, after a number of estimations (about 150 to 200 million

regressions), the ratio of the significant presence of a variable to all states tends to a specific number, and as a result, there is no need to estimate all states. Finally, there is a need for a decision threshold to eliminate variables; To determine the optimal limit, the ratio of K divided by the total variables will be used (k is the number of proposed variables that have the highest impact on the dependent variable from the researcher's point of view). This K is empirical and is chosen based on the researcher's perspective.

To reach the result, calculations must be done on all the models in the model space. According to the number of investigated variables, the number of available models (based on the presence or absence of each variable) in the model space is equal to 240 models, which is more than 1100 billion regression models. In other words, the model space includes 240 models, which, considering the assumption of model uncertainty, means that all models should be examined and the information of all models should be used to reach the result.

In the Bayesian averaging method, since the results are obtained based on the value of the meta-parameter K (in the above calculations, K was assumed to be 10), the question arises whether the results of the research will change if the value of the meta-parameter is changed, and if the answer is If it is positive, what is the rate of change? In other words, will choosing the expected size of the model have an effect on the results?

Based on this, by choosing different \bar{K} and redoing the entire sampling process and related calculations, the results were compared. It should be noted that in these three cases, the model space and therefore the variables and data are the same and the only difference is the expected size of the model⁵; Of course, it is quite clear that by changing the expected size of the model, the samples and then the result will be different, that is, the variables may be fragile (or non-fragile) in all three values of \bar{K} . b) The fragility of some variables changes by changing the \bar{K} value, and the variable that is fragile with the assumption of \bar{K} becomes non-fragile by increasing the expected size of the model.

In table number (1), the goal was to recognize the correct number⁶ of K if the researcher has wrongly presented the number of the initially proposed variable. The value of K in this article is equal to 1 to 10 variables. This number reflects the fact that 10 variables are expected to be introduced as non-destructive variables by the calculation process; but it is quite clear that in the end there may be less or more than 10 non-breaking variables. The output results of K from 1 to 10 are presented in table number (1).

Table 1: The results of non-fragile variables in different models

K	Non-fragile variables
K=1	Real interest rate.
K=2	Real interest rate, government debt to the central bank.
K=3	Real interest rate, government debt to the central bank, liquidity (M2).
K=4	Real interest rate, government debt to the central bank, liquidity (M2), inflation.
K=5	Real interest rate, government debt to the central bank, liquidity (M2), inflation. current expenses
K=6	Real interest rate, government debt to the central bank, liquidity (M2), inflation. Current expenses, land price index in urban areas.
K=7	Real interest rate, government debt to the central bank, liquidity (M2), inflation, current expenditures, land price index in urban areas, unofficial exchange rate.
K=8	Real interest rate, government debt to the central bank, liquidity (M2), inflation, current expenditures, land price index in urban areas, unofficial exchange rate, real exchange rate.
K=9	Real interest rate, government debt to the central bank, liquidity (M2), inflation, current expenditures, land price index in urban areas, unofficial exchange rate, real exchange rate, ratio of non-current claims to granted facilities.
K=10	Real interest rate, government debt to the central bank, liquidity (M2), inflation, current expenditures, land price index in urban areas, unofficial exchange rate, real exchange rate, economic growth, oil revenues.

Below is a summary of the estimation results of the $k=10$ model.

At first, by obtaining a sample containing 1 million regressions from the model space, the coefficients and posterior probability of each variable were calculated. Next, 1 million regressions were added to the first sample, and calculations were made for 2 million regressions, and coefficients and posterior probabilities were obtained. By continuing this process in a sample that included 100 million regressions, convergence was achieved⁷. Based on this, there is no need to increase the sample size to determine non-fragile variables (Table 2). In order to introduce a non-fragile variable, two conditions must be fulfilled. 1) increasing the posterior probability of each variable compared to the prior probability

⁵ The expected size of the model is the number of explanatory variables that the researcher expects to have a significant effect on the dependent variable.

⁶ As a reminder, it is necessary to note determining the initial K will determine the threshold limit for removing variables.

⁷ The criterion of convergence is that the posterior coefficients remain unchanged up to two digits.

2), the posterior probability level being higher than the defined threshold level ("initial threshold level = 10 divided by 40 = 0.25").

Table 2: The first stage of the sampling process and calculations assuming $K = 10^8$

The sample contains 100 million regressions ⁹		The sample contains 1 million regressions		Variable
Prior probability	Previous coefficient	Prior probability	Previous coefficient	
0.05894	-0.704285	1. 05894	-0.678813	Net foreign assets of the banking system
0.08902	0.030581	0.8784	0.059116	Net foreign assets of the central bank
0.24134	0.017914	0.14134	0.016154	Foreign assets of the central bank
0.15016	0.000392	0.14946	0.000223	Foreign assets of banks
0.13224	0.022737	0.32436	0.023119	Foreign assets of the banking system
0.192066	0.172992	0.124912	0.313336	Banks' debt to the central bank
0.13568	-0.024274	0.07208	-0.015126	Non-governmental sector debt to the banking system
0.10335	0.20511	0.213802	0.42018	Central bank foreign currency debt
0.033072	0.00774	0.291394	0.09816	Public sector debt to the banking system
0.922642	0.13315	0.866738	0.02894	Public sector debt to the central bank
0.039326	0.05003	0.203096	0.07823	Debt of companies and government institutions to the central bank
0.061056	-0.067077	0.195676	-0.108862	Public sector debt to banks and non-bank credit institutions
0.05016	0.00039	0.14946	0.00022	Net debt of the public sector to the banking system
0.12048	0.00639	0.21836	0.00579	Net government debt to the central bank
0.0226	0.01242	0.09964	0.00588	The ratio of foreign debt to foreign assets of the central bank
0.12542	-0.021221	0.52046	-0.038701	Central bank foreign currency debt
0.160484	-0.046428	0.111216	-0.087556	Currency debt of the banking system
0.175358	0.12434	0.138564	0.40937	Foreign currency debt of banks
0.230512	0.003381	0.22226	0.003975	Foreign debt of the central bank
0.14578	0.184069	0.07208	0.05777	Net government debt to banks
0.11766	0.93688	0.06042	0.47965	money supply (M1)
0.90038	0.143375	0.78798	0.18518	Liquidity (M2)
0.89646	0.10028	0.83816	5. 3E-05	current expenses
0.45264	0.10536	0.32084	0.01262	oil revenue
0.12578	-0.014013	0.2332	-0.016494	The legal deposit ratio of banks with the central bank
0.09646	-0.03304	0.10388	-0.001897	The ratio of bank deposits to liquidity
0.99902	0.180581	0.6784	0.059116	Real interest rate
0.12084	-0.01925	0.06254	-0.033231	Bank interest rate of one-year deposits
0.163304	-0.056074	0.409478	-0.183274	Loan interest rate
0.69328	0.102438	0.47208	0.002332	Unofficial exchange rate
0.09646	0.000276	0.03816	0.000053	Real exchange rate
0.62048	0.116392	0.41836	0.005788	Real effective exchange rate
0.12206	0.012423	0.09964	0.005883	Stock market price index
0.81542	0.12122	0.52046	0.0387	Economic Growth
0.12614	0.001293	0.05618	0.002205	Rented housing price index in urban areas
0.79568	0.094274	0.67208	0.015126	Land price index in urban areas
0.19646	-0.03304	0.20388	-0.0019	The price of all the spring coins of the old design
0.55264	0.05364	0.52084	0.012625	swelling
0.24328	-0.002438	0.17208	-0.002332	Bank spread
0.13038	-0.043375	0.18798	-0.185182	Risk reward

⁸ Considering that the value of K is equal to 10, the probability value of the initial presence of each variable will be equal to "initial threshold level = 10 divided by 40 is equal to 0.25".

⁹ The numbers 1 and 100 million regressions according to the number of variables, the combination of variables and the number of

In the first stage, 10 variables were selected to determine the non-fragile variables using the above dual conditions. That is, 10 variables had a higher posterior probability value than the prior probability, and these 10 variables had a posterior probability level higher than the threshold level of 0.25. Next, in the third and fourth columns respectively, the posterior coefficients and posterior standard deviation of the variables are stated, and in the last column, the t-statistic ratio of each variable is presented.

Table 3: Significant ratio of non-fragile variables affecting economic policy uncertainty index

Regressions with $2 \leq t - stat $	The sample contains 100 million regressions		Variable	Priority
	Posterior probability	Posterior coefficient		
0.954	0.922642	0.13315	Public sector debt to the central bank	2
0.891	0.90038	0.143375	Liquidity (M2)	3
0.868	0.89646	0.10028	current expenses	4
0.482	0.45264	0.10536	oil revenue	10
0.970	0.99902	0.180581	Real interest rate	1
0.609	0.69328	0.102438	Unofficial exchange rate	7
0.557	0.62048	0.116392	Real effective exchange rate	8
0.837	0.81542	0.12122	Economic Growth	5
0.791	0.79568	0.094274	Land price index in urban areas	6
0.497	0.55264	0.05364	swelling	9

According to the previous explanations, some questions are raised at the end of the topic. First, what is the effect of the entered variables on the economic policy uncertainty index? Second, does the different scale of variables affecting economic policy uncertainty index affect the results? Third, is it possible to include variables that do not have strong theoretical support in the model?

The answer to the first question is based on the fact that in BMA models, only the most probable form of theoretical support and the results of other researches are presented, and there is no need for the results to be the same as the theoretical support. In the answer to the second question, it should be stated that due to the fact that the scale of the variables are not the same. Some are in terms of percentage (such as economic growth and inflation) and some are in terms of level (liquidity M2); Research data are normalized. The answer to the third question lies in the existential philosophy of the BMA model. In this method, econometricians have always faced uncertainties in variable selection and model selection (type, number and combination of variables) in order to have a suitable model. Theoretically, a wide range of variables influence the economic policy uncertainty index; But in conventional econometric methods, all these variables cannot be included in the model; Therefore, researchers have used a combination of variables in the model based on theory and taste [35]. This article aims to overcome uncertainties in model selection and variable selection by using the Bayesian model averaging method and conduct a comprehensive and complete review of the factors affecting the economic policy uncertainty index and the ranking of the contribution of each of these factors. As a result, in this method, since the goal is to model and correctly specify the optimal regression model, there is the possibility of the presence of any potential variable affecting the dependent variable, whether there are theoretical foundations for the influencing variable or the researcher’s empirical perspective [51].

In the second stage, from the economic point of view, the goal is to determine the variables that have a high effect on the uncertainty of the economic policy, in the Bayesian averaging method, because the results were obtained based on the value of the metaparameter k (in the above calculations, k was considered 10) , the question arises in the mind that if the value of the metaparameter changes, the results of the research will change and if the answer is positive, what is the amount of change? In other words, will choosing the expected size of the model have an effect on the results? Based on this, with different \bar{K} choices and redoing the entire sampling process and related calculations, the results were compared. It should be noted that in these three cases, the pattern space and therefore the variables and data are the same and the only difference is the expected size of the pattern¹⁰; Of course, it is quite clear that by changing the expected size of the model, the samples, and then the result will be different, that is, the variables may

estimated regressions that cause the convergence and stability of the probability in the presence of the variable affecting the economic policy uncertainty index in the posterior and prior distributions. Based on this, the smaller the number of variables and the stronger the relationship between variables, the smaller number of regressions are needed to converge the probability between variables.

¹⁰ The expected size of the model is the number of explanatory variables that the researcher expects to have a significant effect on the dependent variable.

be a) \bar{K} fragile (or non-fragile) in all three values, b) the fragility of some \bar{K} variables by changing the value change and the variable which is assumed to be \bar{K} fragile becomes non-fragile by increasing the expected size of the pattern.

Table 4: Comparison of posterior probabilities based on different \bar{K} assumptions

Posterior probability $\bar{K} = 12$	Posterior probability $\bar{K} = 10$	Posterior probability $\bar{K} = 8$	Variable
0.93075	0.922642	0.91859	Public sector debt to the central bank
0.89385	0.90038	0.90485	Liquidity (M2)
0.89486	0.89646	0.88498	current expenses
0.44837	0.45264	0.44803	oil revenue
0.98405	0.99902	0.99405	Real interest rate
0.68094	0.69328	0.70485	Unofficial exchange rate
0.63855	0.62048	0.62988	Real effective exchange rate
0.82747	0.81542	0.80484	swelling
0.79477	0.79568	0.78387	Land price index in urban areas
0.54886	0.55264	0.56938	Economic Growth

Source: Researcher’s calculations

Considering that the posterior probability of non-fragile variables in the state $\bar{K} = 12$ and $\bar{K} = 10$ with the state $\bar{K} = 8$ is approximately the same, the \bar{K} investigations were not extended to higher levels. Now the indicators affecting economic policy uncertainty have been determined, in the next step, it is necessary to make an index of these 10 variables that will represent this index in the final models.

4.2 PCA mode

Principal component analysis will be used for indexing. Based on this, in chart number (2), you can choose the first component or the first two components. The second criterion (eigenvalue): We consider the components whose eigenvalue is greater than one and ignore the other components. The third criterion (variance): the components that explain a greater percentage of the dispersion are sufficient to continue the work, usually the first component considers the most variance. To calculate the economic policy uncertainty index, we multiply the probability of occurrence in the BMA model by the weight of the CFA model and multiply it by the value of the non-fragile variable in that year and calculate all these actions for all top ten variables and add them together.

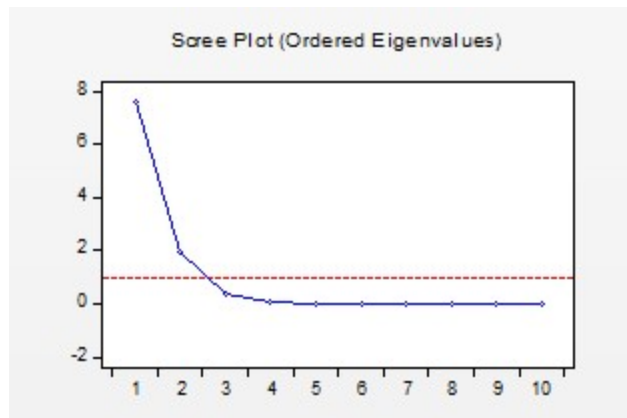


Figure 3: PCA model results between research variables

According to the results, two main vectors can be distinguished, based on which we derive the economic policy uncertainty index. After extracting the index, we will extract the uncertain components of the model based on the GARCH method, and finally, we will investigate the effect of these variables on the tax capacity of the e-commerce sector.

4.3 Garch model:

In order to calculate the fluctuations of economic policy uncertainty, we will first extract the optimal Erma model of the economic policy uncertainty series in the mentioned time frame. Before doing anything, it is necessary to make sure about the validity or invalidity of the economic policy uncertainty time series. The results of the Dickey-Fuller test indicate the non-significance of the variable in the mentioned time frame. Based on the results of the economic policy uncertainty series, it is impossible and as a result, it is necessary to use the ERIMA model to determine the fluctuations of the economic policy uncertainty. Next, the optimal Erima interval should be determined based on Akaike's indices. Based on the results of the Akaike index, in the case where the model has the least Akaike, the interval (1, 2, and 3) was calculated to calculate the model. To ensure the optimality of the model, we calculated the model disturbance factor and calculated the optimal Arima model disturbance factor. Due to the mana being apart from disrupting the Bucks-Jenkins steps, it is done correctly. Finally, we will estimate the ARCH test and finally estimate the GARCH model and extract the uncertainty fluctuations of the economic policy. Finally, we will estimate the ARCH test, if there is an ARCH effect, we will estimate the GARCH model and extract the uncertainty fluctuations of the economic policy. According to the significance of RESID (-1) coefficient, Arch effect is confirmed in time data. In the following, we extracted the uncertainty of the economic policy using the GARCH time series model.

Table 5: GARCH model results

Variable	Coefficient	Std. Error	z-Statistic	Prob.
Arima part of the model				
C	0.010813	0.284421	0.038016	0.9697
AR(1)	0.608821	0.414281	1.469584	0.1417
AR(2)	0.147202	0.352178	0.417977	0.6760
MA(1)	-0.462892	0.381883	-1.212132	0.2255
MA(2)	-0.181257	0.272657	-0.664779	0.5062
MA(3)	-0.209351	0.106864	-1.959037	0.0501
Part of Garch model				
C	8.263864	2.497227	3.309216	0.0009
RESID(-1)^2	0.416008	0.129615	3.209555	0.0013
GARCH(-1)	-0.244483	0.078169	-3.127621	0.0018
GED PARAMETER	2.385282	0.586388	4.067757	0.0000
R-squared	0.161654	Mean dependent var		-0.040980
Adjusted R-squared	0.133138	S. D. dependent var		6.327110
S. E. of regression	5.890881	Akaike info criterion		6.188646
Sum squared resid	5101.265	Schwarz criterion		6.406520
Log likelihood	-462.4314	Hannan-Quinn criter.		6.277150
Durbin-Watson stat	1.382053			
Inverted AR Roots	.79	-.19		
Inverted MA Roots	.91	-.22+.42i		
		-.22-.42i		

According to the significance of the GARCH (-1) coefficient, the existence of the GARCH model in the time series data of economic policy uncertainty changes is confirmed.

4.4 Findings of the TVP-FAVA model

In this section, the results of the research are presented using the TVP method. In table number (6), the values of goodness of fit indices of the model are presented to determine the optimal model. The values of the logarithm of prediction probability, MAFE¹¹ and MSFE¹² indicators obtained from the estimation of different models are presented.

Source: Researcher's calculations

The results of table number (6), which are calculated based on $\alpha=\beta=0.99$ percent, which has the lowest level of prediction error. As a result, the research model is estimated based on $\alpha=\beta=0.99$. In the following, after estimating the TVP-FAVAR model using MATLAB software and using two intervals of the endogenous variables of the model, the results of the analysis of the instantaneous response of the variables of the model in examining the effect of the uncertainty index of economic fluctuations on the tax capacity of the e-commerce sector are presented. Considering that the instantaneous response function of the current research is variable over time.

¹¹ Mean Absolute Forecast. Error

¹² Mean Square Forecast Error

Table 6: Comparison of different prediction models

MSFE	MAFE	Prediction method
0.025	0.094	$\alpha = \beta = 0.99$
0.046	0.124	$\alpha = \beta = 0.90$
0.043	0.121	$\alpha = \beta = 0.95$
0.051	0.127	$\alpha = 0.99; \beta = 0.90$
0.045	0.124	$\alpha = 0.99; \beta = 0.95$
0.039	0.117	$\alpha = 0.95 \beta = 0.99$
0.041	0.117	$\alpha = 1 \beta = 0.99$
0.046	0.125	$\alpha = 1 \beta = 0.95$
0.052	0.128	$\alpha = 1 \beta = 0.90$
0.040	0.117	$\alpha = 0.99 \beta = 1$
0.038	0.117	$\alpha = 0.95 \beta = 1$
0.046	0.116	$\alpha = 1; \beta = 1$

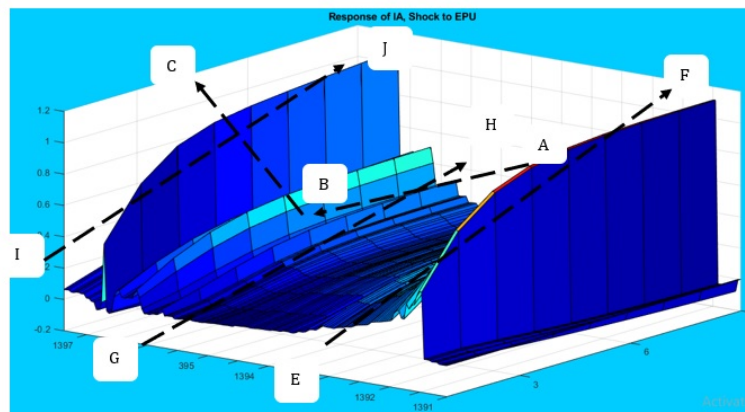


Figure 4: Instantaneous shock of the economic policy uncertainty index variable on the tax capacity of the e-commerce sector

According to the chart of changes, a standard deviation in the economic policy uncertainty index over time has caused a U-shaped movement (movement on the horizontal axis = ABC path). Severe inflation, severe increase in liquidity, increase in sanctions and housing prices and exchange rates are among the most important reasons for increasing the impact of EPU on the tax capacity in the field of e-commerce in recent years. Changes of one standard deviation in the economic policy uncertainty index in each period (by moving on the horizontal axis EF, GH and IJ) have had a positive effect on the tax capacity of the e-commerce sector. This effect is positive and strong in the short term (EF) and medium term. (GH) is positive and weak and in the long term (IJ), positive and strong.

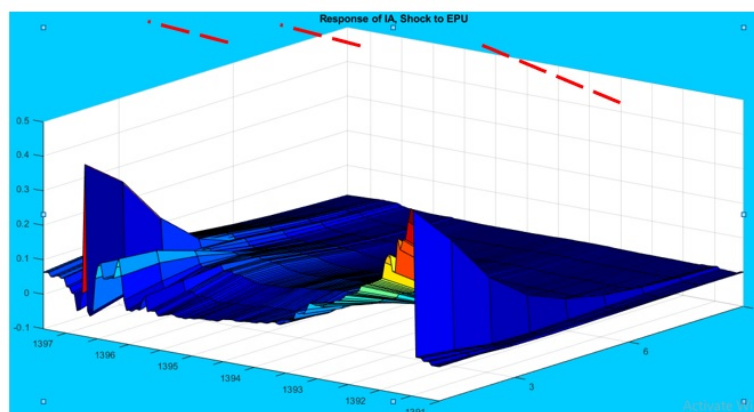


Figure 5: Permanent variable shock of economic policy uncertainty on the tax capacity of the e-commerce sector

According to the graph that shows the cumulative effect of changes of one standard deviation in the index of economic policy uncertainty on the tax capacity of the e-commerce sector, it is quite clear the effect of this variable on the tax capacity of the e-commerce sector in three short-term, medium-term and long-term periods. It can be shown

as follows. The effect of this variable is evaluated in the short term for 7 periods and strong, in the medium term for 3 periods and weak, and in the long term for 6 periods and relatively strong.

5 Conclusions and practical suggestions of the research

Due to the presence of liquidity in non-fragile variables, due to the fact that the money market is one of the most dynamic economic markets, the imbalance in this market is quickly transferred to other markets, including the stock market, and causes instability and uncertainty in these markets. Economic uncertainty drives liquidity towards real assets, which upsets the balance in the market of the desired assets, and therefore will increase the price of real assets, including housing and gold, and on the other hand, with a decrease in investment, liquidity from the production sector which the task of financing is mainly the responsibility of the stock exchange. This will reduce production, economic growth and employment in the future. As a result, controlling the amount of liquidity in the economy in accordance with the economic needs of the country and the planned inflation target can reduce price shocks and instability in the capital market, especially the stock market. In this regard, the Ministry of Economy and Finance plays an important role in regulating and directing money market activities and coordinating monetary policies with the set of macroeconomic policies of the government. In order to coordinate monetary flows with real flows to create stability in the national economy, this institution can put on the agenda to make the country's banking network more efficient and also create the necessary grounds for the effective application of monetary policy.

Due to the presence of current expenses in non-fragile variables, due to the fact that the stock market is affected by shocks or in other words, unexpected changes in the government's financial policy, and therefore unexpected changes in the government's financial policy can have a negative effect on the stock market. Considering the size of the government in Iran's economy, as well as the impact of the government's economic decisions on politics, the role of the government on economic instability is significant. Therefore, reducing or rationalizing the size of the government, reducing the size of the government's economic activities, reducing the financial burden and increasing the efficiency of the government can increase the country's economic stability and therefore reduce its effects and consequences on the stock market. In this regard, creating and maintaining a stable macroeconomic environment, replacing financial discipline with financial instability in the government budget seems to be a suitable policy. Considering that the government's budget deficit plays a major role in expanding the monetary base and causing inflation, reducing the budget deficit and limiting its fluctuations can be beneficial in economic stability and therefore stability in the country's stock exchange. Also, by following long-term economic policies and planned and non-surprise decisions, a more stable economic environment can be provided; Because in the situation of everyday policies and the lack of clarity about the long-term situation, people delay their decisions and refrain from long-term planning due to the lack of a clear economic perspective for the future.

Considering the presence of oil revenues in non-fragile variables, considering that one of the main consequences of dependence on oil revenues is the inability of the economy to meet domestic needs and also dependence on foreign economies, so this reduces economic stability. Under such conditions, in addition to the effect of the shocks of the crude oil market on the domestic economy, the shocks of the foreign economy are also transferred to the country. The increase in the price of oil causes an increase in the cost of products produced by industrialized countries, which also leads to an increase in the rial value of imports from developing countries, including Iran; Therefore, under such conditions, it is necessary for the government to seek to replace oil revenues with other revenues. This can reduce the effects of recession and boom on the economy and especially the effects of oil revenues from the capital market. Increasing the share of taxes and consequently reducing the share of oil revenues from government revenues can be a solution for the government's economic stability policy and therefore reducing the effectiveness of the stock exchange from oil revenues.

Due to the presence of liquidity in non-fragile variables, due to the fact that the increase in the exchange rate on the one hand increases the amount of foreign debt, and on the other hand increases the cost of imported products and services provided by these companies. Considering that the increase in the company's debt leads to a lack of liquidity, and the lack of liquidity of economic enterprises has a negative effect on the distribution of profits, stock returns and price index, as well as an increase in the cost of production products, a decrease in the company's profit margin, a decrease in prices and returns. shares and consequently the stock index decreases. In this regard, it can be useful to regulate currency policies in accordance with the goal of achieving economic stability and curbing fluctuations. Higher economic stability is provided by using appropriate foreign exchange policies, including the floating exchange rate system and curbing economic fluctuations. Of course, this requires the independence of the central bank.

Considering the effects of monetary and financial policies as well as exchange rate changes on the fluctuation of economic policy uncertainty, changes in the banking-based financial system and the expansion of the insurance

market can be useful in the short term to control capital market fluctuations. The superior role of the government in facilitating doing business, expanding and encouraging economic activities leads to improving the efficiency of the country's financial system. In other words, the transition to a stable economy requires changes in the financial system to support the private sector. As one of the components of the financial sector of the national economy, the insurance market has the important function of providing economic security. On the other hand, the resources collected by attracting insurance premiums in itself lead to significant financial resources for investment in the national economy, including investment in stocks. As a result, the expansion of the insurance market both directly reduces the economic uncertainty of the activity in the stock market, and with the expansion of investment, it provides the basis for increasing the economic stability and therefore the growth of the capital market.

It is recommended that the government be very careful in determining policies, especially macroeconomic policies, and refrain from adopting hasty and unexpertized policies, because considering the low adjustment speed of the above model, adopting such policies for the stock exchange during the long-term period will have harmful consequences. And it will bring irreparable damage.

Economic and social policy makers are facing issues that cannot be ignored when dealing with taxation. One of the issues that may influence the decision on taxation is the tax burden. One of the basic lessons in the field of successful economic growth policy is to avoid setting large income tax rates. Such rates distort the behavior of economic agents and create many disincentives in economic activity and lead to insignificant income. In this situation, if the income tax burden is high, it will still be a challenge for the policymaker [20]. Due to the fact that the uncertainty of economic policies can affect economic growth, reduce the yield of shares and investment of companies and increase cash capital; As a result of the uncertainty of economic policies, it leads to a decrease in the financial income of governments, at the same time, local governments are motivated to increase financial expenses including tax rates to curb economic recession, which increases the financial pressure of governments. In order to reduce the pressure, local governments do their best to increase tax revenue, which can increase the tax burden of companies [9].

On the other hand, the special features of e-commerce, such as the issue of location selection, the digital nature of products, the emergence of new assets, new registration methods, and electronic payment methods are not compatible with the previous tax system and are considered important challenges of taxation in e-commerce. Before answering these challenges, the question is whether e-commerce should be taxed or tax exempted. What are the benefits and costs of Internet tax exemption? Currently, due to the small volume of e-commerce compared to mainstream commerce, as well as the type of products exchanged on the Internet, the tax exemption on e-commerce will have a small effect on reducing the government's tax revenue. In addition, e-commerce at its current level does not create a deviation in the mainstream business. Therefore, this way of business does not create much inefficiency. Not taxing e-commerce makes people with more income and education earn more benefits and not pay taxes. This effect will decrease significantly due to the increasing use of the Internet in the next few years. Therefore, in the short term (this period of time should be clearly defined), the implementation of the tax exemption policy is the best available policy. The experiences of different countries show that in formulating e-commerce tax policy, countries emphasize the simplicity of the law, enforceability and compatibility with the previous method. Also, these countries have paid special attention to international cooperation in the taxation of e-commerce, supporting this business method and not imposing double taxes on it. The criteria for drafting the e-commerce tax law have been evaluated. The most important of these criteria are: economic principles (economic efficiency and distributional effects), simplicity and compatibility, the special nature of e-commerce, prevention of double taxation, discrimination in taxation, support of small and medium industries, the principle of non-discrimination, the ability to compete between Internationalization and globalization, the technological aspect and the security of transactions, that compliance with these standards will have a significant effect on reducing the tax burden and increasing efficiency.

6 Practical Research Suggestions

1. The effect of e-commerce on imports is important for the government because of features such as supporting domestic products, preventing the entry of unnecessary and luxury goods, and earning money. E-commerce due to having features such as eliminating geographical distances, not needing physical presence to carry out transactions, reducing or eliminating intermediaries, the lack of possibility of physical control causes the volume of international exchanges to increase, followed by imports. The lack of tax laws for electronic commerce at the international level is one of the issues that countries face with the reduction of import tax revenues. With specific international laws for countries and the possibility of identifying as many activities as possible at the international level, e-commerce can increase the volume of import tax revenues. Therefore, it is necessary to cooperate with business partners in the medium term to apply international laws.

2. Due to the fact that the fluctuation of economic policy uncertainty has a positive effect on the tax capacity of the e-commerce sector, as a result, it is recommended to the compilers of the capital market rules and regulations to formulate more detailed guidelines for the disclosure of the company's risks in order to provide a more transparent and high-quality disclosure of risk information. provide the company and in this way the uncertainty in the reports can be reduced and lead to better decision making and resource allocation.
3. The Ministry of Economy and Finance can provide the necessary ground for electronic taxation such as filling declarations and tax forms, or in other words, an easier way and at a lower cost. This issue can be an incentive for companies to pay their taxes correctly and on time. It is hardly possible to identify the companies and then to identify the time, volume and amount traded by them. As a result, the amount of tax on companies will decrease due to the fact that companies cannot be identified, which will result in a decrease in the total amount of tax revenues. The way to deal with this problem is to identify the companies and the volume of activities carried out by them. Therefore, an arrangement should be made for internet stores to receive a license so that with the information in hand, it is possible to collect taxes.
4. Countries' experiences show that countries have tried to cover electronic tax issues by revising the existing tax law. Therefore, in Iran, this issue can be solved by reviewing the new materials and notes. One of the important advantages of this issue is that it prevents the creation of multiple laws.

References

- [1] Z. Abdali, M. Monahan, S. Jowett, Th. Pinkney, P. Brocklehurst, D.G. Morton, and T.E. Roberts, *Surgical site infection and costs in low-and middle-income countries: A systematic review of the economic burden*, PloS one **15** (2020), no. 6, e0232960.
- [2] I. Abu-Nouri and A.H. Nikpour, *The effect of tax burden indicators on the size of the hidden economy in Iran*, Econ. Growth Dev. Res. **5** (2013), no. 17, 75–90.
- [3] Sh. Arbabian and S. K. Tayyebi, *Informal employment and competitiveness of low-technology industries*, Montary Financ. Econ. **17** (2011), no. 34.
- [4] J. M. Argil-Bosch, A. Somoza, D. Ravenda, and J. Garcja-Blandon, *An empirical examination of the influence of e-commerce on tax avoidance in europe*, J. Int. Account. Audit. Tax. **41** (2020), 100339.
- [5] A. F. Burns and W. C. Mitchell, *The basic measures of cyclical behavior*, Measuring Business Cycles, NBER, 1946, pp. 115–202.
- [6] E commerce Development Center of the Ministry of Security, *Tropics and economic development: An empirical investigation*, World Development **25** (1997), no. 9, 1443–1452.
- [7] L. Dai and Ph. Ngo, *Political uncertainty and accounting conservatism*, Eur. Account. Rev. **30** (2021), no. 2, 277–307.
- [8] D.N. Damanik, *Taxation policy on e-commerce transactions*, Proc. Int. Seminar, vol. 1, 2020, pp. 20–24.
- [9] Ch. Dang, F. Wang, Z. Yang, H. Zhang, and Y. Qian, *Evaluating and forecasting the risks of small to medium-sized enterprises in the supply chain finance market using blockchain technology and deep learning model*, Oper. Manag. Res. **15** (2022), no. 3-4, 662–675.
- [10] D. Dang, H. Fang, and M. He, *Economic policy uncertainty, tax quotas and corporate tax burden: Evidence from China*, China Econ. Rev. **56** (2019), 101303.
- [11] M. Del-Negro and Ch. Otrok, *Dynamic factor models with time-varying parameters: Measuring changes in international business cycles*, FRB of New York Staff Report (2008), no. 326.
- [12] R. Dell'Anno and A.A. Davidescu, *Estimating shadow economy and tax evasion in Romania: A comparison by different estimation approaches*, Econ. Anal. Policy **63** (2019), 130–149.
- [13] A. Divandarri, *Monetary and Banking Research Institute (MBRI)*, Macroecon. Financ. Econ. **33** (1990), no. 12, 1443–1452.
- [14] C. Doz, D. Giannone, and L. Reichlin, *A quasi-maximum likelihood approach for large, approximate dynamic factor models*, Rev. Econ. Statist. **94** (2012), no. 4, 1014–1024.

- [15] M. Faezi and H. Nowrozi, *Investigating factors influencing customers' willingness to buy from virtual stores (case study: Al digital virtual store)*, Bus. Strategies **22** (2014), no. 5, 85–102.
- [16] A. Fallahati, Sh. Fatahi, S. Abbaspour, and M. Nazifi-Nayini, *Estimating the country's tax capacity using neural networks*, Tax Res. J. **28** (2009), no. 8, 25–53.
- [17] Z. Ftiti and S. Hadhri, *Can economic policy uncertainty, oil prices, and investor sentiment predict islamic stock returns? a multi-scale perspective*, Pacific-Basin Finance J. **53** (2019), 40–55.
- [18] J. Giles, D. Benjamin, and L. Brandt, *The evolution of income inequality in rural China*, Econ. Dev. Cultural Change **53** (2005), no. 4, 769–824.
- [19] A.S Goldberger, *Heritability*, Economica **46** (1979), no. 184, 327–347.
- [20] Y. Guan, G. J. Lobo, A. Tsang, and X. Xin, *Societal trust and management earnings forecast*, Account. Rev. **95** (2020), no. 5, 149–184.
- [21] E. Hadian and A. Tadari, *Identifying factors affecting tax evasion in Iran's economy*, Program Budget Quart. **2** (2012), 39–58.
- [22] O. Hajati, H. Farazman, S.M. Afagheh, and S.A. Armen, *Estimation of income elasticity and tax capacity with concentration on the components of tax revenues in Khuzestan Province*, Plann. Budget. **24** (2020), no. 4, 97–124.
- [23] E. Hajibabaei and A. Ghasemi, *Flood management, flood forecasting and warning system*, Int. J. Sci. Engin. Appl. **6** (2017), no. 2, 33–38.
- [24] M. Kabiri, M. Zolfaghari, and H. Saadatmanesh, *Impact of socio-economic infrastructure investments on income inequality in Iran*, J. Policy Model. **42** (2020), no. 5, 1146–1168.
- [25] S. Karimi, M.M. Khan-Mohammadi, and M. Jafari, *Presenting and evaluating the tax compliance model of legal entities based on the views of tax experts using the underlying theory in the Iranian tax system*, J. Manag. Account. Audit. Knowledge **10** (2021), no. 38, 345–360.
- [26] S.M. Khamisi, *Investigating the effect of political uncertainty on the total index of the Tehran Stock Exchange and the dollar rate in Iran*, Int. J. Bus. Econ. Manag. **6** (2017), no. 21, 46–67.
- [27] T. Khosravi and J. Pezhoyan, *The impact of corporate tax on private sector investment using the banks approach*, Financial Economics Quarterly **7** (2012), no. 25, 121–195.
- [28] V. Klarić, *Estimating the size of non-observed economy in Croatia using the MIMIC approach*, Financ. Theory Practice **35** (2011), no. 1, 59–90.
- [29] G. Koop and S. Potter, *Forecasting in large macroeconomic panels using Bayesian model averaging*, (2003).
- [30] D. Korobilis, *Var forecasting using Bayesian variable selection*, J. Appl. Econom. **28** (2013), no. 2, 204–230.
- [31] M. Mahmoudzadeh and Hasanzadeh M., *E-commerce tax: An introduction to the drafting of the e-commerce tax law in Iran*, Econ. Policy Res. Quart. **14** (2006), no. 37, 85–117.
- [32] G.S. Majoral, F. Gasparin, and S. Sauri, *Application of a tax to e-commerce deliveries in Barcelona*, Transport. Res. Record **2675** (2021), no. 10, 642–655.
- [33] S. Marcelino-Sadaba, A. Perez-Ezcurdia, A.E.E. Lazcano, and P. Villanueva, *Project risk management methodology for small firms*, Int. J. Project Manag. **32** (2014), no. 2, 327–340.
- [34] M. Mateen-Fard and A.A. Chahar-Mahali, *Investigating the effect of economic uncertainty on cash non-deposit*, Sci. Res. Quart. J. Invest. Knowledge **11** (2022), no. 41, 42–62.
- [35] M. Mehrara, A. Haghnejad, J. Dehnavi, and F.J. Meybodi, *Dynamic causal relationships among GDP, exports, and foreign direct investment (FDI) in the developing countries*, Int. Lett. Soc. Human. Sci. **14** (2014), no. 3, 1–19.
- [36] B. Misri, I. Dev, and V. Singh, *Socio-economic profile of migratory graziers and participatory appraisal of forage production and utilization of an alpine pasture in north-west Himalaya*, ENVIS Bull. **11** (2005), no. 2.
- [37] M. Motallebi, M. Alizadeh, and S. Faraji-Dizaji, *Estimating shadow economy and tax evasion by considering the variables of government financial discipline and behavioral factors in Iran's economy*, Iran. Econ. Rev. **24** (2020),

- no. 2, 515–544.
- [38] R.A. Musgrave, *Cost-benefit analysis and the theory of public finance*, J. Econ. Liter. **7** (1969), no. 3, 797–806.
- [39] V. Nagar, J. Schoenfeld, and L. Wellman, *The effect of economic policy uncertainty on investor information asymmetry and management disclosures*, J. Account. Econ. **67** (2019), no. 1, 36–57.
- [40] M. Rabiei and F. Esmail-Nia-Kitabi, *Estimating tax capacity and effort and its relationship with oil income in the economy of Iran and some selected opec member countries*, Financ. Econ. **7** (2012), no. 22, 49–69.
- [41] S. Ranjbar and G. Amanollahi, *The effect of financial distress on earnings management and unpredicted net earnings in companies listed on Tehran Stock Exchange*, Manag. Sci. Lett. **8** (2018), no. 9, 933–938.
- [42] X. Salai-Martin, J. Blanke, M.D. Hanouz, Th. Geiger, I. Mia, and F. Paua, *The global competitiveness index: Prioritizing the economic policy agenda*, Glob. Competit. Rep. **2009** (2008), 3–41.
- [43] A.H. Samadi and N. Sajedianfard, *Tax evasion in oil-exporting countries: The case of Iran*, Iran. Econ. Rev. **21** (2017), no. 2, 241–267.
- [44] A. J. Samimi, S. Sadeghi, and S. Sadeghi, *Tourism and economic growth in developing countries: P-var approach*, Middle-East J. Sci. Res. **10** (2011), no. 1, 28–32.
- [45] M.R. Schneider, C. Schulze-Bentrop, and M. Paunescu, *Mapping the institutional capital of high-tech firms: A fuzzy-set analysis of capitalist variety and export performance*, J. Int. Bus. Stud. **41** (2010), 246–266.
- [46] H. Shamsuddini and S.M.Gh. Nejad, *The effect of firm size and inflation rate on capital cost and financial health of companies accepted in Tehran Stock Exchange and Bombay Stock Exchange*, QUID: Investigacion, Ciencia y Tecnologia (2017), no. 1, 221–234.
- [47] M.S. Sheikh and H. Mirzaei, *investigate the effect of economic policy uncertainty on the tax burden of companies listed on the Tehran Stock Exchange*, Econ. Strategy **7** (2018), no. 24, 95–119.
- [48] J. Slocum, H. K. Downey, and D. Hellriegel, *Environmental uncertainty: The construct and its application*, Admin. Sci. Quart. **20** (1975), no. 4, 613–629.
- [49] J.H. Stock and M.W. Watson, *Heteroskedasticity-robust standard errors for fixed effects panel data regression*, Econometrica **76** (2008), no. 1, 155–174.
- [50] K. Udomvitid, *The E-commerce Sales Tax: A Case Study of Thailand*, Colorado State University, 2003.
- [51] L. Wasserman, *Bayesian model selection and model averaging*, J. Math. Psycho. **44** (2000), no. 1, 92–107.
- [52] W. Wu, Ch. Wu, Ch. Zhou, and J. Wu, *Political connections, tax benefits and firm performance: Evidence from china*, J. Account. Public Policy **31** (2012), no. 3, 277–300.
- [53] M. Zahed-Gharavi, A. Falahi, M. Toghyani, and H. Asaiesh, *Testing the effects of exchange rate jumps and global financial crisis using the overshooting dornbusch model for the financial stability of the state banking system of iran's economy*, J. Asset Manag. Financ. **10** (2022), no. 1, 117–140.
- [54] A. Zellner, *Bayesian and non-Bayesian analysis of the log-normal distribution and log-normal regression*, J. Amer. Statist. Assoc. **66** (1971), no. 334, 327–330.
- [55] L. Zhang and R. H. Xang, *Analysis model design on the impact of foreign investment on china's economic growth*, Sci. Programm. **2022** (2022).
- [56] J. Ziegler, J. Ware, J. Dethmer, and F. Skinner, *High performing investment teams: How to achieve best practices of top firms*, Wiley Online Library, 2006.