



# Systematic Risk in Iran's Medical Tourism Industry: A Narrative Review

*Saeid Amirian<sup>1</sup>, \*Ali Mohammad Ahmadi<sup>2</sup>, Abbas Assari Arani<sup>3</sup>, Ezatollah Abbasian<sup>4</sup>*

1. Department of Health Economy, Tarbiat Modares University, Tebran, Iran

2. Institute of Economic Research, Tarbiat Modares University, Tebran, Iran

3. Faculty of Management and Economics, Tarbiat Modares University, Tebran, Iran

4. Department of Public Administration, Faculty of Management, University of Tebran, Tebran, Iran

\*Corresponding Author: Email: aahmadi@modares.ac.ir

(Received 09 Apr 2021; accepted 24 Jul 2021)

## Abstract

Medical tourism is a new form of tourism grown significantly in recent years across the world and in Iran. The flow of medical tourism today is from developed countries to developing countries. Yet, demand volatility due to systematic risks can hurt industry players. The occurrence of systematic risks in the tourism industry, especially medical tourism, is common. The latest case of systemic risk is the COVID19 pandemic. The present study aimed to detect and study the factors that can help companies to be more resilient in the occurrence of systematic risks in the medical tourism industry. The Delphi method was used to summarize and analyze the industry managers' perception of the above factors. The results of analyzing the perceptions of managers of companies operating in the medical tourism industry show that debt advantage, liquidity and profitability, and operational efficiency are the determinants that play the most important role in the resilience of companies against systematic risks. The role of advertising is also relatively agreed upon by the managers.

**Keywords:** Demand volatility; Determinants; Medical tourism; Systematic risk

## Introduction

Medical tourism is a new form of market in the tourism industry that has grown considerably in recent years (1). Travel to improve health is the distinguishing character of medical tourism. Medical tourism, as a subset of health tourism, is an activity that requires trade in services and participation of at least two sectors of medicine and tourism (2).

Medical tourism refers to travel to other countries to receive certain medical services. Medical services may include a wide range of treatments,

but in most cases include dental services, cosmetic surgery, fertility surgery, and other types of surgeries (3). Attracting and transferring a medical tourist from the country of origin, sometimes from a distance of several thousand miles to the destination country, providing accommodation, transportation within the destination country, providing medical services and sometimes visiting other tourist attractions of the destination country, buying souvenirs, returning the tourist to the country of origin, and providing after-



Copyright © 2022 Amirian et al. Published by Tehran University of Medical Sciences.

This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International license.

(<https://creativecommons.org/licenses/by-nc/4.0/>). Non-commercial uses of the work are permitted, provided the original work is properly cited

treatment services create a value chain, the realization of which requires the work and coordination of a large number of executive and medical agents, especially facilitation companies, hospitals, and medical centers. Yet, the activities of these companies and hospitals, like other activities, are likely to face many potential risks.

To establish a sustainable economic activity against future happenings, it is necessary to adopt appropriate strategies, especially at the management scale of companies. This is also the case for the tourism industry (4). Therefore, companies operating in this field must be very sensitive and accurate to the proper use of facilities per unit of time; otherwise, they will face huge losses. Thus, it is very important that companies operating in the field of tourism, especially medical tourism, have professional measures in terms of risk management. Recognizing the factors that make medical tourism companies resilient against systematic risks can make the tourism industry more sustainable to follow its growth path with less volatility, and thus stable economic benefits are provided. In the following, medical tourism in the world and Iran is reviewed, and then an attempt is made to study the conditions for the emergence of systematic risks in the tourism industry and finally to address the issues that, if observed

by actors in this industry, they will be less likely to be harmed by systematic risks.

***Medical Tourism in the World and Iran***

Estimates of the financial quantity of the medical tourism industry vary from source to source around the world, but all of these estimates indicate rapid growth in the medical tourism market. According to McKinsey and Company, medical tourism industry was valued at \$ 40 billion in 2004 that reached \$ 100 billion in 2012. Statistics show that in 2007, 750,000 Americans traveled abroad for treatment. This number reached 3 to 5 million in 2010. Most of these travels have been to Mexico and some Latin American countries. Therefore, the number of medical tourists worldwide is estimated at 50 million (5). With the growth and expansion of medical tourism in the world, more countries are joining the ranks of medical tourism destinations.

According to the data provided by the Global Market Insights(6), the medical tourism market (demand side) across the world mainly includes Europe, Latin America, Asia and the Pacific, North America and the Middle East, and North Africa with a share of 34%, 24%, 23%, 15%, and 4%, respectively, in 2016 (Table 1).

**Table 1:** The share of the world medical tourism market by regions (Demand Side)

<i>Region</i>	<i>2015</i>	<i>2016</i>
North America	15	15
Europe	37	34
Asia and the Pacific	21	23
Latin America	24	24
North America and the Middle East	3	4
Sum	100	100

Source: Global Market Insights (<https://www.gminsights.com/industry-analysis/medical-tourism-market>)

The most important medical tourism destinations (supply side) are in Asia and the United States. North America and Latin America also have therapeutic tourism exchanges. Medical tourists from the Middle East travel to Europe and Asia in search of better services. Some of them also receive their medical services from the countries

of the same region. The destination of medical tourists in the European region is mainly Asia and North America. Mexico and Costa Rica in North and Central America, Brazil in South America, India, Thailand, Singapore, Philippines and Malaysia in Asia are the most important tourism destinations. Cuba, Hungary, Turkey,

Jordan, China, South Korea, South Africa, and the UAE are among the growing destinations in this field (7).

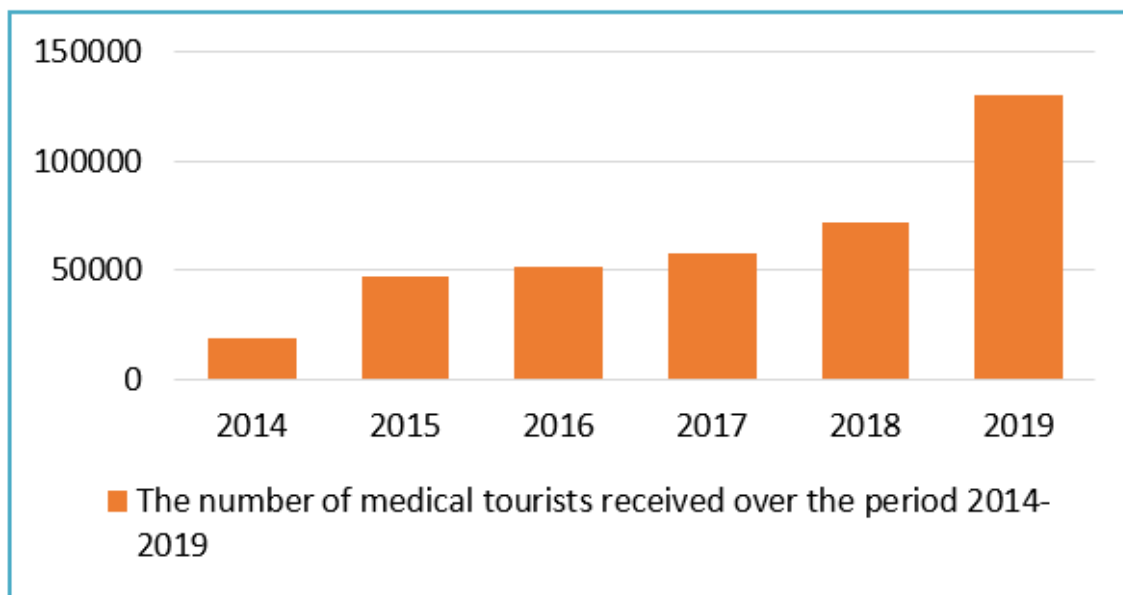
According to data obtained the number of foreigners received by Iran’s hospitals in 2014

was only 19 thousand people, which in 2019 reached more than 129 thousand people that shows a very high annual growth of 46% on average (Table 2 and Fig.1).

**Table 2:** Medical Tourists Received by Iran’s Hospitals from 2014 to 2019

<i>Year</i>	<i>Medical tourists</i>
2014	19,007
2015	47,336
2016	51,626
2017	57,430
2018	71,973
2019	129,916

Source: Department of Health Tourism. Report of medical tourism statistics in Iran 2014-2019. Tehran: Ministry of Health and Medical Education, 2020



**Fig. 1:** Number of Medical Tourists Received over the Period 2014–2019

**Source:** Department of Health Tourism. Report of medical tourism statistics in Iran 2014-2019. Tehran: Ministry of Health and Medical Education, 2020

The types of services requested by medical tourists in 2019 are provided in Table 3. The highest number of referrals for gynecological treatments has been with 18% frequency. Eye surgery with 11%, and orthopedics,

cardiovascular and trauma with 7% are placed in the next ranks. Rhinoplasty alone accounts for 5% of demands. As can be seen in Table 4, in recent years, more foreign women have been referred to Iran’s hospitals than men.

**Table 3:** The Share of Medical Clients according to the Diagnostic Group in 2019

<i>Diagnostic groups</i>	<i>Share</i>
obstetrics and gynecology	18
eye surgery	11
orthopedics	7
cardiovascular diseases	7
trauma	7
Urology	6
Rhinoplasty	5
General surgery	4
Non-surgical diseases (medical treatment)	6
Cancer	2
Other diagnoses	28
Sum	100

**Source:** Department of Health Tourism. Report of medical tourism statistics in Iran 2014-2019. Tehran: Ministry of Health and Medical Education, 2020

**Table 4:** Clients over the Period 2014-2019 by Gender

<i>Year</i>	<i>Women</i>	<i>Men</i>	<i>Sum</i>
2014	9241	9766	19,007
2015	23,408	23,928	47,336
2016	26,208	25,418	51,626
2017	31,372	26,058	57,430
2018	37,613	34,360	71,973
2019	67,449	62,467	129,916

**Source:** Department of Health Tourism. Report of medical tourism statistics in Iran 2014-2019. Tehran: Ministry of Health and Medical Education, 2020

According to Table 5, Tehran with about 38% has the highest share in the number of medical tourists in the country. Khorasan Razavi, Qom, Fars, and Khuzestan are placed in the next ranks with 21%, 16%, 6%, and 4% shares, respectively.

Apart from Tehran and Qom, other high-share provinces are border provinces, indicating that the demand for Iran's medical tourism industry relies heavily on neighboring countries that are bridged to Iran by land.

**Table 5:** International Medical Tourists Received by Iran's Hospitals by Province in 2019

<i>Province</i>	<i>Number of people</i>	<i>Share</i>
Total	129,916	100
Tehran	49,191	37.9
Khorasan Razavi	27,238	21.0
Qom	20,816	16.0
Fars	7303	5.6
Khuzestan	5460	4.2
West Azerbaijan	3909	3.0
East Azerbaijan	3494	2.7
Hormozgan	3321	2.6
Semnan	2285	1.8
Kermanshah	1313	1.0
Other provinces	5625	4.3

**Source:** Department of Health Tourism. Report of medical tourism statistics in Iran 2014-2019. Tehran: Ministry of Health and Medical Education, 2020

According to Table 6, most applicants for medical services in Iran in 2019 have been citizens of Afghanistan, Iraq, Azerbaijan, and Oman. Yet, the highest growth rate of the

number of clients between 2014 and 2019 belonged to Qatar, Bahrain, African countries, and Iraq, indicating that Iran's medical tourism market is expanding.

**Table 6:** The Growth Rate of Medical Tourism in Iran over the Period 2014–2019

<i>Country of origin</i>	<i>2014</i>	<i>2019</i>	<i>5-year growth rate (%)</i>
Afghanistan	10,401	63,680	512
Iraq	5288	50,547	856
Azerbaijan	1068	4982	366
Oman	455	3618	695
Pakistan	377	1597	324
Bahrain	88	928	955
Kuwait	220	795	261
India	124	560	352
Qatar	25	385	1440
Turkmenistan	254	256	1
Iran	21	195	829
Turkey	56	170	204
China	25	162	548
Saudi Arabia	109	161	48
Syria	28	142	407
Lebanon	29	138	376
Tajikistan	60	107	78
UAE	11	54	391
Europe	113	599	430
Asia and the Pacific	84	338	302
USA	141	180	28
Africa	30	322	973
Sum	19,007	129,916	584

**Source:** Department of Health Tourism. Report of medical tourism statistics in Iran 2014-2019. Tehran: Ministry of Health and Medical Education, 2020

To establish a successful medical tourism industry, it is necessary to have extensive infrastructure and medical and tourism facilities at the same time. According to the information published by the Ministry of Health and Medical Education, the number of active hospital beds in Iran has been 129 thousand within 981 hospitals in 2017, among which about 97 thousand beds are public and the rest of about 32 thousand beds are private. Accordingly, the ratio of beds per thousand population in Iran is 1.7 (8). Although the ratio of beds per thousand people in Iran is not considerable, and most of the hospital

facilities meet the basic needs, a review of the report of the Ministry of Health and Medical Education in 2017 shows that the occupancy rate of hospital beds in Iran is 70% (about 30% of the existing capacity is unused), and this capacity can be used for medical tourism. According to the Ministry of Health and Medical Education, more than 157 hospitals have received International Patient Department (IPD) from the Ministry of Health and Medical Education. Table 7 provides the licensed hospitals by city. The highest frequency is across Tehran, but immediately after that, the highest frequency is across three border

cities, i.e. Mashhad, Tabriz, and Ahwaz. Therefore, on the supply side, the pattern is almost clear. Iran's medical tourism services are mostly provided to neighboring and border countries that enter the country through land

borders. However, central cities such as Tehran, Shiraz, Isfahan, and Yazd also have high medical capacities that, despite being far from land borders, rely on air entry points to attract foreign customers.

**Table 7:** Hospitals with IPD in 2019

<i>City</i>	<i>Number</i>
Tehran	49
Mashhad	12
Ahwaz	12
Tabriz	15
Esfahan	4
Shiraz	11
Kermanshah	9
Urmia	6
Rasht	5
Yazd	7
Zahedan and Zabol	3
Sanandaj	6
Birjand	2
Gorgan	7
Ardabil	2
Hamedan	2
Qazvin	2
Qom	1
Neyshabur	1
Amol	1
Sum	157

**Source:** Department of Health Tourism. Report of medical tourism statistics in Iran 2014-2019. Tehran: Ministry of Health and Medical Education, 2020

In the medical tourism industry, due to the far distance between the patient and the physician and the cultural and environmental differences between the two, their meeting requires relatively extensive coordination and, therefore, it is necessary to establish facilitators to complete the chain of medical tourism services. It has also been considered in Iran. Therefore, the essential framework to establish facilitating companies has been developed and supported by the Ministry of Cultural Heritage, Tourism and Handicrafts as

well as the Ministry of Health and Medical Education. In this framework and according to the information in Table 8, 48 companies have obtained the required license to facilitate the medical tourism industry by the Ministry of Cultural Heritage, Tourism and Handicrafts until 2019. Except for Tehran, connected to international markets by air, Mashhad, Ahwaz and Urmia have the largest number of the above-mentioned companies, have land connections with neighboring countries.

**Table 8:** Medical Tourism Companies Located in Iran's Cities in 2019

<i>City</i>	<i>Number</i>
Tehran	18
Mashhad	10
Ahwaz	7
Urmia	5
Esfahan	3
Shiraz	3
Kermanshah	2
Sum	48

Source: Ministry of Cultural Heritage, Tourism and Handicrafts (<https://b2n.ir/a23006>)

The medical sector in Iran is a developing industry in which both the government and the non-governmental sector operate, and despite the relatively limited facilities, in addition to meeting domestic needs, it has also been able to have a glimpse of international markets. Although international markets mainly include neighboring countries such as Iraq and Afghanistan, anyway the market is expanding. In order to enter this industry more professionally, it was necessary to establish facilitation companies, also performed with the coordination of the Ministry of Health and Medical Education and the Ministry of Cultural Heritage, Tourism and Handicrafts, and the service chain is complete. However, these companies and hospitals face several possible risks. To establish a sustainable economic activity, it is necessary to adopt appropriate strategies, especially in terms of the companies' management. This is also evident in the tourism industry. In the following, the risk, especially systematic risk, in the tourism industry is studied.

#### *Risk in the Tourism Industry*

Risk in the field of tourism can be discussed at four general levels as follows (4):

- 1) Individual risks;
- 2) Risk for companies providing tourism services;
- 3) Destination risks;
- 4) Social risks.

This paper addresses the risk in companies providing tourism services. Risks in companies are generally divided into two categories: unsystematic risks and systematic risks.

Unsystematic risks refers to risks in the process of production and distribution of goods and services by a company, while systematic risks refer to the emergence of economic crises, coups, or earthquakes. Unsystematic risks are mainly related to the quality of performance within companies and institutions, and by increasing the accuracy and application of performance standards, as well as by diversifying the target markets, the scope of such risks can be reduced, but systematic risks are related to external events and pervasive, and companies have no involvement in their occurrence. Therefore, the companies can only control the destructive effects by adopting policies (4).

As shown in Fig. 2, from 2000 to 2020, in four cases, the world tourism trend has experienced zero or negative growth. The first is the Sep 11, 2001 attacks, in the United States, during which the World Trade Center in New York was destroyed by al-Qaeda, and subsequently, the United States invaded Afghanistan. The second case is from 2003 when the outbreak of the SARS virus disrupted the world tourism trend, and negatively affected its growth. The United States also invaded Iraq, and the Middle East was so insecure. The year 2009 coincided with the great economic crisis all over the world. The number of international tourists has decreased by 4% in 2009 compared to the previous year (Fig.2). Finally, in 2020, the Corona Pandemic emerged as the biggest shock to the tourism industry all over the world. The number of tourists in 2020 was up to 30% –less than the



previous year –unprecedented in the period under review (9). Yet, this estimate is related to early 2020, and more accurate estimates show that the number of international tourists has decreased by up to 70% (10). Therefore, the occurrence of systematic shocks that affect the

entire market is very likely in the international tourism industry, and it is necessary to plan for the healthy passage through them. What is shown in the figure below is related to the global shocks. Meanwhile, in addition to global shocks, Iran is also facing national shocks.

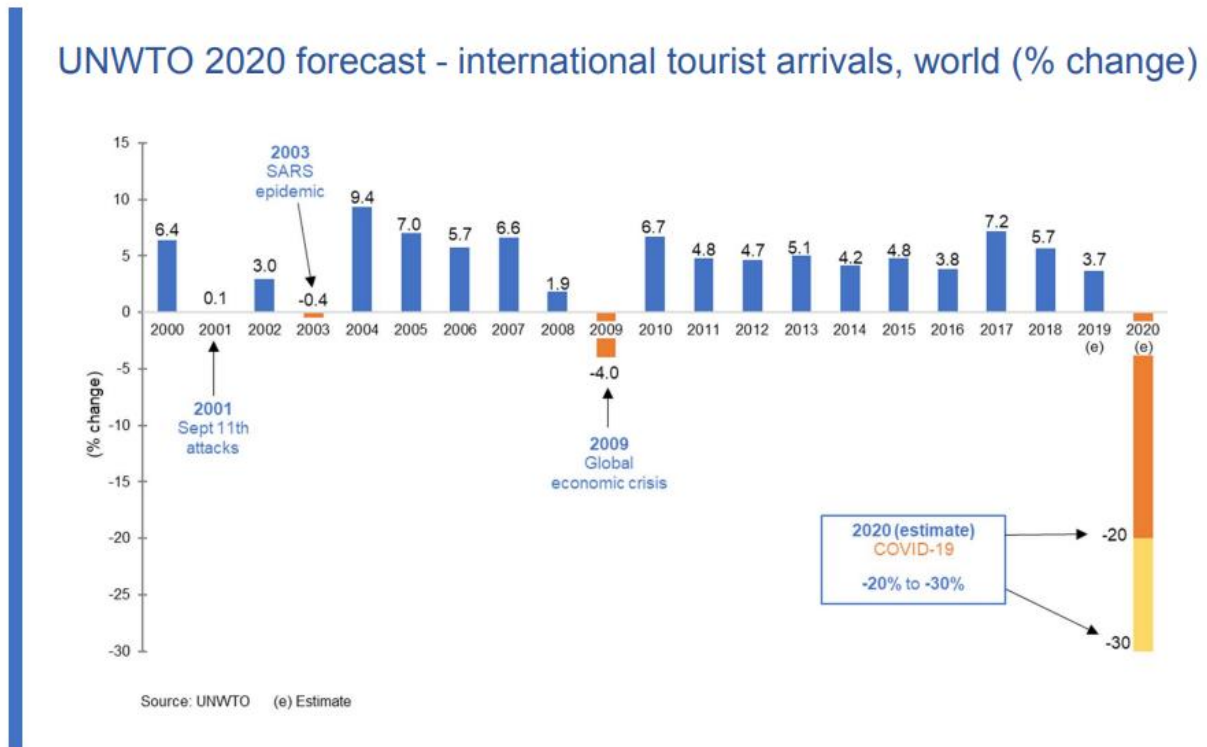


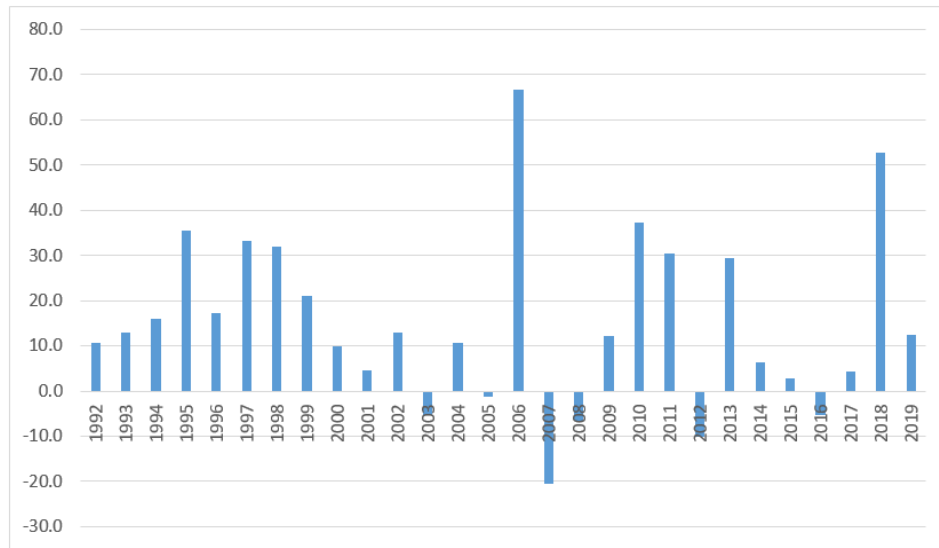
Fig. 2: The Growth Rate of Tourists across the World over the period 2000–2020

Source: World Tourism Organization ([https://webunwto.s3.eu-west-1.amazonaws.com/s3fs-public/2020-03/21\\_4\\_Tourism\\_COVID19\\_Data\\_Coalitionpptx.pdf](https://webunwto.s3.eu-west-1.amazonaws.com/s3fs-public/2020-03/21_4_Tourism_COVID19_Data_Coalitionpptx.pdf))

Figure 3 shows the growth rate of tourists entering Iran between 1991 and 2019. With the 11 September attacks and the US invasion of Afghanistan and Iraq, the flow of tourists entering Iran is not good, and the growth of the number of tourists entering the country is negative. Moreover, in 2007 and 2008, due to the escalation of the situation in Iran's nuclear file and the issuance of UN Security Council

resolutions, the entry of tourists to Iran took a negative trend. Volatility in Iran's tourism growth rate continues in the following years, which shows that in addition to international crises such as SARS and Corona, Iran faces challenges that sometimes slow down the flow of tourists and, therefore, companies operating in this industry must be prepared to face these challenges.





**Fig. 3:** The growth rate of tourists entering Iran between 1992 and 2019

**Source:** Statistical Center of Iran (<https://www.amar.org.ir/english/Iran-Statistical-Yearbook>)

This volatility is also true for medical tourism, which is the subject of this study, and actors in this field also need to consider the emergence of systematic risks in planning the development of their activities.

Systematic risk was not in the control of companies operating in this field, and no one could prevent it from occurring, so the important question is how to prepare companies operating in this industry in such a way that they are more resilient and less likely to go bankrupt in the case of systematic risk. To answer this question, similar studies in the tourism industry and other activities should be reviewed.

#### *Determinants in the Resilience of Companies in a Theoretical Framework*

In 1952, Harry Markowitz proposed the theory of portfolio collections. He assumed that investors were not necessarily seeking to maximize their expected returns. If they only wanted to maximize their expected return, they would invest in only one item of assets that had the highest expected return. However, investors have a portfolio. In justifying this behavior, one can say that investors pay attention to both phenomena of risk and return at the same time. The capital asset pricing model (CAPM) calculates and iden-

tifies systematic risk or market risk for each company based on portfolio theory ( $\beta$ ) (11). Beta ( $\beta$ ) is a statistical measure that gives investors a clue about volatility.  $\beta$  is measured by comparing the volatility of a company's returns to the volatility of market returns. The market  $\beta$  is 1. Any company with a  $\beta$  greater than 1 has more volatility than the average market volatility. It is expected to have less resilience in the event of systematic risks. On the contrary, any company with a  $\beta$  less than 1 has low volatility and high resilience to systematic risks. The question is what determines  $\beta$ . Studies, which address the determinants that lead a company to be more resilient against the systematic risks, suggest two categories of factors: Macroeconomic factors and internal factors of the company (12). In this paper, the internal factors of companies are addressed. Our reviews showed that some internal factors of companies are common in different research such as liquidity, company size, financial leverage, profitability, operating leverage, and efficiency (12-16), and some factors, depending on the nature of each industry, may enter the model. For example, safety costs in the aviation industry are very high, and their amount affects the systematic risk; therefore, their costs are included in the list of determinants for the aviation industry (15). Moreover,

in the case of online travel companies whose activities are mainly in cyberspace, advertising costs have a decisive role, and affect the systematic risk of companies (16). Some important influencing factors that affect companies' resilience are briefly reviewed.

### ***Company Size***

There are several reasons in the literature that as company size increases, systematic risk ( $\beta$ ) decreases and its resilience to systematic risks increases. First, large companies have more opportunities to diversify their activities. That is, in the event of a risk in a certain activity, the rest of the activities are less damaged, and the company does not go to the brink of bankruptcy (17). Second, large companies can hold part of their assets in cash or close to cash, so that in the event of a problem they can act immediately and resolve the problems that have arisen (18). Third, larger companies have lower average production costs and are therefore more profitable and less likely to go bankrupt, thus their risk reduces (19). Fourth, large companies can reduce the impact of economic, political, and social change on the management of the company and its activities through the relationships they have, and keep their activities away from such risks. However, some empirical studies have reached different results (13).

### ***Debt Leverage***

Financial leverage refers to the use of financial instruments or debt to amplify the return on investment. Regardless of their assets and capital, a company or investor can develop their capital and activities by borrowing (creating debt) without taking on a new investor; however, this makes the company more vulnerable to shocks caused by systematic risks (11). Because stopping the sale of goods and services due to systematic risk leads to the default of overdue debts, and exposes the company to bankruptcy. In most studies, financial leverage is directly related to systematic risk. That is, increasing company debt leads to increased company vulnerability to systematic risks.

### ***Liquidity***

The more cash resources a company has or the better its ability to liquidate its assets quickly, the more power it will have to deal with shocks from systematic risks (11). This feature allows the company to pay off overdue debts from liquid assets in the short-term in the event of a halt or decline in sales and consequently a decrease in revenue, and avoid the risk of bankruptcy.

### ***Profitability***

The higher the profitability of the company, the greater the company's ability to reduce financial volatility and, therefore, the systematic risk of the company is reduced (14).

### ***Operational Efficiency***

The higher the operational efficiency usually obtained by dividing sales into the company's assets, the greater the company's resilience to systematic risks (11).

### ***Advertising***

Regarding the variable of advertising, today, human activities have shifted towards online and, therefore, advertising has become very important to identify products to the public. The relationship between advertising costs and the number of visitors to companies' websites and their performance has been positive (20). Given the importance of advertising for companies operating in the tourism industry, Lee has used the variable of advertising as one of the determinants of systematic risk in the model (16). Advertising reduced the systematic risk of companies.

Other determinants and factors can be mentioned although so far the most important factors have been mentioned. In the following, an attempt is made to refer to the empirical results of this issue in Iran's medical tourism industry. Companies operating in medical tourism are Small and medium-sized companies (SMEs) and, thus, they are usually less studied on the impact of systematic risks on companies. This research is an attempt to study the issue within SME companies. We hope that this paper will

draw more attention to SME companies in such studies. According to many researchers, risk studies for SME companies are rare (21). Risk studies focus more on large companies, and unlike a large number of SME companies in the world's economies, very few empirical studies can be found on risk and risk management in SME companies (22). There are so few studies in the field of risk management that it is very difficult to find systematic review studies and content analysis to reach a scientific conclusion in this field. Moreover, the few studies done are not comprehensive (21), and comprehensive standards and guidelines for implementing risk management for SME companies have not been designed and tested.

Among the above determining factors, in this paper, the perceptions of the managers of the facilitating companies in Iran's medical tourism industry, which according to the presented statistics include 48 companies, are tested.

#### **Research Method and Estimation of Results**

A review of studies identifying  $\beta$  determinants (factors that reduce company volatility, or in other words, increase company resilience against systematic risks) in companies showed that in most cases the panel data model was used (17-

21). Panel data is a common statistical model in econometrics. We used this model in another part of the doctoral dissertation at Tarbiat Modares University about medical tourism facilitators, and the results showed that company size, as well as advertising, had a positive effect on increasing the companies' resilience against systematic risks. The present paper used the decision-making model to summarize the opinions of managers of the above companies on the factors mentioned above. The Delphi method was used for this purpose that is one of the mental-intuitive methods in the field of futurism. The Project RAND developed the Delphi method in the 1950s in Santa Monica, California, during operations research. Delphi is a systematic technique or method of research to detect opinions from a group of experts on a topic or question. In this method, the opinions of experts are studied through multi-stage questionnaires while maintaining the anonymity of the respondents (23).

Based on the existing theories about the factors affecting companies' resilience against systematic risk, an initial questionnaire was prepared and sent to the managers of 48 companies, among which 36 company managers filled out the questionnaires (Table 9).

**Table 9:** Perceptions of managers of medical tourism companies of the determinants affecting the systematic risk

<i>Determinant</i>	<i>Theory</i>	<i>Agreement rate (%)</i>
Profitability	The higher the profitability of the company than the capital it has, the less systematic risk (smaller $\beta$ ).	87
Company	The larger the company size, the lower the systematic risk (smaller $\beta$ ).	44
Operational efficiency	The more efficiently a company uses the resources at its disposal (including capital and manpower), the lower the systematic risk (smaller $\beta$ ).	81
Liquidity	The more cash the company has and the more liquid assets it has than current liabilities, the lower the systematic risk (smaller $\beta$ ).	88
Debt leverage	The lower the debt of the company than its total assets, the lower the systematic risk (smaller $\beta$ ).	100
Advertising and marketing	The broader the company's advertising and marketing, the lower the systematic risk (smaller $\beta$ ).	61

Source: Author's findings

Then, the results of Table 9 were sent to the respondents, whose results were agreed upon by about 90% of the respondents. The common understanding of the managers of the above-mentioned companies has been that the debt leverage and liquidity of the company's assets are the most company resilience in controlling the effects of systematic risk (Table 9). The above managers also have a relatively high agreement on the positive impact of profitability index, operational efficiency, and advertising and marketing, but the idea of the positive effect of company size on its resilience to systematic risks has been less supported.

## **Conclusion**

The formation of facilitation companies in Iran indicates the tourism actors' awareness of this capacity. However, like other economic activities, this industry is accompanied by demand volatility, and risk, especially systematic risks, is part of the nature of this industry. Therefore, it is necessary for companies operating in this field to be prepared to face this status. The occurrence of systematic risks in the economy and especially in the tourism industry is inevitable. Over the period 2000-2020, in four cases, the world tourism trend has experienced zero or negative growth, the most severe of which was the COVID-19 pandemic in 2020. In addition to systematic risks stemming from international developments, Iran's economy is also experiencing further volatility due to its involvement in the nuclear process and the oil economy. Therefore, the issue of systematic risk is common, and it is worth detecting the determinants that can make economic actors in the field of medical tourism resistant to the above risks.

In the literature review, the capital asset pricing model (CAPM) identified the systematic risk. The greater the scatter of expected returns, the greater the uncertainty of the occurrence of these returns in future periods. CAPM suggests  $\beta$  coefficient.

The differences in systematic risk ( $\beta$ ) between companies may be due to differences in the company's financial decisions and developments. In an efficient market, there is a relationship between the company's internal variables and the systematic risk variable ( $\beta$ ). The determinants were briefly discussed in the present paper. These determinants included company size, liquidity, debt leverage, profitability, operational efficiency, and advertising. Perceptions of managers of medical tourism companies of the above factors were obtained and summarized using the Delphi model. The results of studying the executive experience of these managers as factors affecting systematic risk show that debt leverage and liquidity had the most support among the companies managers. In addition, the managers have a relatively high agreement (more than 80%) about the positive effect of profitability, efficiency, and advertising and marketing index, but the necessary support has not been provided regarding the effect of company size on reducing the destructive effects of systematic risks.

## **Recommendations**

Larger companies in the medical tourism industry will have less systematic risk. However, the company needs new financial resources to grow and develop. Small companies have little access to other resources in the financial markets other than banking facilities and are therefore involved in issues related to bank interest rates. One of the reasons for high interest rates on bank loans is the low credit of these companies with banks, which is due to the asymmetry of information between banks and small companies (24). Two recommendations are presented simultaneously. The first is for the government to help small and start-up companies by providing intermediary institutions to provide financial resources for growth and development at lower interest rates than bank rates. The specificity of these funds should be that it is possible to defer the facilities granted to SME companies at no extra cost in the

event of systematic risks. Furthermore, it is recommended to provide a credible administrative structure for disclosure of information by SME companies to reduce the asymmetry between small companies and banks and other economic, financial and policy-making institutions, etc. It can also be a great help in conducting further studies on these companies. Ultimately it helps them to be better managed, which leads to their survival and growth process in a smoother direction with less volatility.

Given the importance of advertising in reducing the systematic risk of medical tourism companies, it is necessary to design and implement appropriate strategies to introduce Iran's medical capacity in the region as well as emerging markets for this industry. This should be done at the national scale, and the scale of trade unions and companies operating in this industry.

Risk management templates designed for large-sized companies cannot be implemented in SME companies. Therefore, wide areas of study have been opened for further researches.

## Journalism Ethics considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

## Acknowledgements

This article was part of a PhD dissertation at Tarbiat Modarres University. Thanks to Tarbiat Modarres University for supporting this article.

## Conflict of interest

The authors declare that there is no conflict of interest.

## References

1. Rerkrujipimol J, Assenov I (2011). Marketing strategies for promoting medical tourism in Thailand. *J Tour Hosp Cul Arts*, 3(2), 95-105.
2. Bookman MZ, Bookman KR (2007). *Medical Tourism in Developing Countries*. New York: Palgrave Macmillan. Springer Publication.
3. OECD (2010). Health Accounts Experts, Progress Report. Trade in Health Care Goods and Services Under the System of Health Accounts. Paris.
4. Williams AM, Baláž V (2015). Tourism risk and uncertainty: Theoretical reflections. *J Travel Res*, 54(3), 271-287.
5. OECD (2012). Medical Tourism: Treatments, Markets and Health System Implications: A scoping review, university of York, Published 2011. Available from: [https://pure.york.ac.uk/portal/en/publications/medical-tourism-treatments-markets-and-health-system-implications-a-scoping-review\(5842a515-2a2a-4190-bb1b-40cc8fa1c815\).html](https://pure.york.ac.uk/portal/en/publications/medical-tourism-treatments-markets-and-health-system-implications-a-scoping-review(5842a515-2a2a-4190-bb1b-40cc8fa1c815).html)
6. Global Market Insights (2016). Medical Tourism Market Analysis and Forecast – 2016 To 2025-sample report. Available from: <https://www.gminsights.com/industry-analysis/medical-tourism-market>
7. Ehrbeck T, Guevara C, Mango PD (2008). Mapping the market for medical travel. <http://www.medretreat.com/templates/UserFiles/Documents/McKinsey%20Report%20Medical%20Travel.pdf>
8. Kameli ME, Behtaj F, Parvan M, et al (2020). “*Statistical Report of Hospitals in Iran (AVAB)*”. (In Persian). 1<sup>st</sup> ed. Barta
9. UNWTO and Data Partners, (2020). COVID-19 - a global insight on travel and tourism impacts, 21 April 2020. Available from: [https://webunwto.s3.eu-west-1.amazonaws.com/s3fs-public/2020-03/21\\_4\\_Tourism\\_COVID19\\_Data\\_Coalitionpptx.pdf](https://webunwto.s3.eu-west-1.amazonaws.com/s3fs-public/2020-03/21_4_Tourism_COVID19_Data_Coalitionpptx.pdf)
10. UNWTO (2020). UNWTO World Tourism Barometer and Statistical Annex, October 2020. <https://www.e-unwto.org/doi/abs/10.18111/wtobarometereng.2020.18.1.6>
11. Reilly FK, Brown KC (2011). *Investment Analysis and Portfolio Management*. 10<sup>th</sup> Edition, South-Western Cengage Learning.
12. Angel K, Menéndez-Plans C, Orgaz-Guerrero N (2018). Risk management: Comparative analysis of systematic risk and effect of the finan-



- cial crisis on US tourism industry: Panel data research. *Int J Contemp Hosp Manag*, 30 (3), 1920-1938.
13. Jiao D (2013). Demand volatility, operating leverage and systematic risk in hospitality industry. Master Thesis in Finance, *Tilburg University*. Available from: <http://arno.uvt.nl/show.cgi?fid=130523>
  14. Lee JS, Jang SS (2007). The systematic-risk determinants of the US airline industry. *Tour Manag*, 28(2), 434-442.
  15. Mar-Molinero C, Menéndez-Plans C, Orgaz-Guerrero N (2017). Has the 2008 financial crisis changed the factors determining the systematic risk of shares in the “European Hospitality Industry”? (2003–2013). *J Hosp Tour Manag*, 31, 59-69.
  16. Lee WS, Moon J, Lee S, Kerstetter D (2015). Determinants of systematic risk in the online travel agency industry. *Tour Econ*, 21(2), 341-355.
  17. Titman S, Wessels R (1988). The determinants of capital structure choice. *J Finance*, 43(1), 1-19.
  18. Fisher L (1959). Determinants of risk premiums on corporate bonds. *J Polit Econ*, 67(3), 217-237.
  19. Ben-Zion U, Shalit SS (1975). Size, leverage, and dividend record as determinants of equity risk. *J Finance*, 30(4), 1015-1026.
  20. Saeed KA, Hwang Y, Grover V (2002). Investigating the impact of web site value and advertising on firm performance in electronic commerce. *Int J Electron Commer*, 7(2), 119-141.
  21. de Araújo Lima PF, Crema M, Verbano C (2020). Risk management in SMEs: A systematic literature review and future directions. *Eur Manag J*, 38(1), 78-94.
  22. Rostami A, Sommerville J, Wong IL, et al (2015). Risk management implementation in small and medium enterprises in the UK construction industry. *Eng Constr Archit Man*, 22(1), 91-107.
  23. Keeney S, Hasson F (2001). McKenna HP. A critical review of the Delphi technique as a research methodology for nursing. *Int J Nurs Stud*, 38(2), 195-200.
  24. Dietsch M, Düllmann K, Fraisse H, et al (2016). Support for the SME supporting factor: Multi-country empirical evidence on systematic risk factor for SME loans. Discussion Paper Deutsche Bundesbank No 45/2016.