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Inflation and Financing of Commercial Insurance in the Field of Treatment

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ABSTRACT

Background: In inflationary conditions, financing is one of the most important and challenging issues in different sectors of economy, including health. Health financing means the way money is collected, accumulated and spent for health care services. The process undergoes a change in inflationary conditions.

Methods: This is a qualitative research. The data were collected through a survey of documentation related to health system expenditures in Iran.. The search strategy in this study was based on the PRISMA protocol. In the preliminary search, 147 official documents and reports were obtained. After removing inconsistent and repetitive cases, 47 documents were examined. These documents were classified into 11 categories and the position analysis was based on this.

Results: Findings show that inflation has had a very negative impact on Iran's financing system; specifically inflation has seriously threatened country's health insurance industry. The study of trend of return loss index in Commercial Insurance in The field of treatment revealed its unfavorable status in the study years. However, the demand for these insurance packages has also been increasing.

Conclusion: The rising trend of inflation in the field of treatment in the study duration, along with increased focus of quality services in private sector, in contrast to the public sector, have led to the transfer of treatment costs from public to private sector. This has increased the share of payment from the pocket of patients. This process has increased the influence of this sector in determining tariffs. The lack of authority of insurance companies to monitor and evaluate the performance of these centers is considered as an important factor in transfer of health finances from state and social insurance to private sector and commercial insurance. It should be noted that during the period under study in health market of Iran, the inflation rate and the amount of direct payments have been interacting, and each has intensified another.

Key words: Inflation, Commercial Insurance, Treatment, PRISMA

Citation

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Introduction

Inflation is a key variable in macroeconomics. The inflation rate, its effects and consequences, and its control mechanisms, are always considered as one of the fundamental concerns of governments everywhere in the world. In general, the situation in which general level of prices is persistently and inappropriately increasing is in inflation conditions (1). Thus, although the term inflation is synonymous with the general increase in prices, but any increase in price is not inflation, and there must be two elements of time and the rate of growth of prices. Sometimes a slight increase in the general level of prices is called "creeping inflation," and a large increase, and a leap forward, is called "swift inflation" (2).

Different views have been expressed on the causes and origins of inflation, which in general can be classified into four categories:

A. Cost push inflation: In terms of cost push, factors that reduce supply to demand create inflationary conditions, most notably increase in production costs by raising wages, raising interest rates, or other factors which will put the producer at a standstill (2).

B. Demand push inflation: Proponents of demand push inflationary theory believe that increasing the purchasing power of individuals or groups will result in inflation as a result of increasing their nominal income without changing production and supply levels. (3)

C. Structural View: Structuralists are looking for the fundamental roots of inflation in uneven economic structures. According to opinion of this group, the luck of supply elasticity in various sectors of the economy is a major contributor to inflation. They believe in structural reforms in the production and distribution systems (4) to escape inflation.

D. Monetary theory: The proponents of this theory view inflation as a result of high growth and a permanent supply of money. So that inflation continues to grow at high and continuous levels, and with the low growth of money supply, inflation is reduced. From this perspective, the only way to control inflation is to supply money at a rate equal to or slightly above average growth (5).

Although inflation is defined more by price changes but what transforms inflation from an economic phenomenon to a social problem is its effect on the purchasing power of the people. Since the main axis in inflation is depreciation of exchange unit, because of inflationary situation, groups of fixed income communities gradually lose their purchasing power, and become ever more impoverished. On the other hand, due to the distributive effects of inflation, in the inflationary situation, groups that are financed at a constant rate (such as retirees) are more harmful than other groups that do this at variable rates (6). This situation is considered to be a hidden tax in which according to former president Ronald Reagan is the most outrageous tax. The continuation of such a process, especially in developing societies, including Iran, is a potential contributor to the creation and expansion of a class divide that has many consequences, including social inequalities. These inequalities in the health sector have tangible negative effects due to the nature of the market as well as the inexorability of demand.

Health sector is one of the economic sectors and shares many commonalities with other sectors, but there seems to be a series of unusual economic characteristics in the health care market that distinguish it from other sectors (6). These characteristics are:

- The breadth of government interventions in different formats is high because of the vital importance of these services
- Based on evidence, uncertainty at all levels of care is due to the probable nature of the disease and the referral of individuals and how to respond to treatment and its effects in different individuals.
- Sweeten information asymmetries between service providers and consumers to create inductive demand.
- Health services do not have the same quality and quality.
- The monopoly on this market is high due to the limited availability of these services.
- Because of the criticality of the service and its lack of sensitivity to price changes, the power of

decision-making is taken from the individual, which causes customer ruled market to be ruined.

•Etc.

These characteristics, together with the increasing cost of this sector, can lead to a phenomenon of market failure (6), a phenomenon that if not managed by the sovereign, would increase inequalities in the financing of the health system.

Methods of collecting revenue and financing

There are several ways to finance the health system. Typically, different countries in the world do not use one specific method to finance and use a combination of methods to increase the distribution power of resources. What part of the financing of the health system is more important and which one is less depends on the goals of health system and other environmental conditions (7). These methods include:

1. Public revenues

Public revenues are the most important source for financing health systems in poor countries as well as in rich countries. The source of such revenues in the world is usually taxes directly or indirectly received from people, but in oil-rich countries like Iran, the share of oil revenues is higher in public financing (6).

2. Insurance

Insurance is one of the most important sources of financing for health care. Insurance is an agreement in which one party takes a premium and undertakes that compensates for losses incurred by the other party under the terms and conditions stipulated in the insurance policy. In this agreement, the undertaker is called insuring party and the person who pays the premium is called insurer. There are two major forms of insurance type for health financing: social insurance and private insurance (8).

2-1. Social insurance

Social insurance is distinguished by three characteristics from private insurance. First, social insurance is compulsory. Each member of the group must register and participate and pay the prescribed premium. When a person performs the minimum number of prepayments, he or she will be subject to predefined benefits. Second, social insurance premiums and benefits are social contracts (in the form of law) that the amount of participation and benefits cannot be easily changed. Third, social insurance is often financed by specific taxes (9).

Social insurance can insure a person against financial risks of illness, disability, retirement, death, etc., and does this for the whole population or a part of it. The entire system of social protection and support is often referred to as "social security". Traditionally, social security financing was made through employing compulsory contributions to employed employees as a percentage of their income and applying similar or even higher salaries to employers of these employees (9). These payments are known as social security contributions and qualify for coverage for a range of benefits. The government may also participate in these programs in some cases. You may also need to pay a person (incl. Franchise and reinsurance) in addition to the tax on their wages. In some countries, to cover employees outside the public sector, insurance payments can be calculated in terms of other income or welfare measures other than wages (for example, the value of products produced) (16).

Once the service package and the share of participation are governed by a standard social insurance program, implementation can be done through various arrangements, including government agencies, government parallel organizations, disaster funds or nonprofit insurers or Commercial Insurance companies. As it appears, when the insurance program is managed and conducted by a single national entity, risks are usually accumulated at the national level (such as Medicare programs in the United States and the Philippines, or comprehensive social insurance in Taiwan) (10).

For the first time, social insurance was established at the time of Bismarck (German Chancellor in 1883), which was reliant on numerous insurers (both profitable and nonprofit) to insure and execute programs. This template is

often referred to as Bismarck Social Insurance or Compulsory Social Insurance. These insurance programs sometimes have different contributions to each other because they accrue various risk groups (for example, in terms of area or business) and their service packages vary to a degree depending on the specific demand of the insured groups. Bismarck's approach is the most common pattern of social insurance in the world; it has been used in Europe, Latin America, Japan and Korea (9).

The contribution of social insurance programs must be determined statistically and based on the following: the incidence of incapacity, the conditions for including the benefits, the value of these benefits and the insured population. Because the risks are accumulated, riskier people receive more benefits.

In most low-income countries, governments often provide compulsory social insurance to cover government employees and workers employed by large companies (for example, companies with more than 25 employees). Social insurance rarely has expanded to cover rural populations, because collecting insurance premiums from farmers and screening their incomes is difficult; for low income countries, social insurance typically covers only 15% - 10% of the total population (11).

2-2. Commercial Insurance

The main difference between this insurance and social insurance is in its optional feature. In this type of insurance, individuals can voluntarily register in the insurance plan. In this insurance, the risks of illness and the cost of the individual are usually considered. This insurance is less risky than social insurance due to the low number of registered registrants. The main concern of private insurance is the Adverse Selection which refers to a situation where customers have more information about their health status and their willingness to use medical services. Therefore, they will choose insurance plans that will have the most benefit to them. Therefore, insurance companies require individual health insurance purchasers to undergo primary medical examinations (4).

3. Out of Pocket Payments

Consumers of services and care usually pay directly out of their pockets to use cost-effective services. The amount to be paid is based on a variety of principles. This may be the total cost, deductible (fixed amount for each visit) or any other form. These payments are called Out of Pocket Payments (10). These types of payments will no longer be repaid by the payer. In some cases, the patient pays money to providers when using services, but later receives this from some support or insurance organizations, so payments are not out of pocket payment.

4. Community-based financing

Community-based finance is a term that health financing professionals have used abundantly in existing literature. The scholars have referred to any financial plan that included the participation or presence of a specific community, such as donations communities, religious communities, associations for the protection of certain diseases, etc. to finance health sector.

5. Other types (including donors, international assistance, etc.)

Today, most of advanced and developed countries are helping health and well-being of the environment due to the importance of health and well-being. Assistance is provided on a case basis or periodic basis. The World Health Organization and the World Bank are among the most important organizations that typically finance some of the developing countries' programs for the promotion of health (5).

Justice in Financial Partnership

The health system faces weaknesses in our country, the weaknesses that have delayed the desired development in the health system, medical treatment and education, and deprived people of good health access. One of these is the lack of justice.

Justice in financial participation in provision of health care costs is a concept that has been used by the World Health Organization since 2000 to monitor the performance of world health systems in financing. The focus of this concept is whether

each farmer contributes to the cost of the sector in accordance with its financial and income situation. In this regard, people fair financial contribution index (FFCI) is used to pay health costs to determine the percentage of households that have a heavier share in paying costs. In calculating the indicator, the figure is deduction of expenses that households spend on their health and denominator of deductible non-food expenses of household. As far as this ratio is closer to the whole households, the system is fairer (12).

This study seeks to explain the current state of health financing in Iran by examining the trends governing economic indicators such as inflation rate, direct payments and indices in the insurance business industry.

Materials and Methods

This study seeks to study inflation rate in health sector and its impact on health financing in Iran during2001 to2011. Qualitative study approach is used and data necessary for analysis have been collected from methodology of Document Analysis related to health system costs in Iran. Search strategy in this study was based on PRISMA protocol (13). To access the resources, first in Google public search engine and related websites in the field of financial health, including organization of management and planning of the country, Ministry of Health and Medical Education, Central Bank, Central Insurance, Iran Insurance, Health Insurance Organization, Social Supply Organization and Research Center of the Parliament, as well as the World Health Organization database, and World Bank were widely investigated for obtaining official reports, regulations and related sections, and annual statistical reports. Keywords in these searches were pocket payments, health system costs, health budgets, health sector inflation rates, general inflation rates, annual reports, statistical reports, National Health Accounts and Iran. In order to achieve a more realistic view and analytical richness, some news and reports in official news agencies of the country, including IRNA, ISNA, Health News, Risk News, etc., have also been studied over years. Accordingly, in the initial search, there were 147 official documents and reports. Given that the criteria, for entering the study there was a focused on the relationship between the general inflation situation, health sector inflation and financial behavior of insurance. Eliminating over-the-counter and repetitive cases, 47 documents and official reports in 11 categories for exploitation in final analysis includes formal health registration fees, including reports on national health accounts, central bank statistical reports, the World Health Organization and the World Bank, official reports of central insurers and other insurance organizations in the field of treatment and insurance, including insurance Iran, health insurance and social security, annual budgets, regulations and regulations letters of formal and analysis provided by the center of research of Parliament to facilitate position analysis (Table 1).

Furthermore, all ethical issues are based on the Helsinki Declaration.

Results

Central Bank of the Islamic Republic of Iran uses Consumer Price Index (CPI) in public sector and health system as the reference in producing country economic statistics for measuring general inflation and health. This indicator is one of the most important price indicators as a marker for measuring the inflation rate and the purchasing power of each country. This index is used to design welfare and social security programs, wage moderation and salary management and contractual arrangements (7). CPI index in health sector includes things such as the price of hospital room, visit fee, medicine, hospital fees, etc. Inflation measurement in an economy is based on changes in price index, and annual inflation is derived from percentage change in the difference between price index of current year and last year.

In this section it has been attempted that based on official statistics announced by national and international authorities such as World Bank, the World Health Organization, Central Bank of Islamic Republic of Iran, Ministry of Health, and

etc. .Trends in the status of the indicators studied in Iran and other countries will be carefully described and analyzed in later sections. Graph 1 shows the growing trend of inflation in public sector and health of country for years 1995 to 2011. As we see, inflation in health sector in the studied period has always been (except 1995) above general inflation rate. Table 1 also shows the growth of the price index in public and health sectors as well as major sub-categories of health services. During this period, the physicians' visit feewith an average of 27% and pharmaceutical costs with an average of 16% had the highest and lowest changes in the price index, respectively.

Figure 2 indicates an increase in the growth of health costs in Iran. Interestingly, this figure depreciated the role of government, and in parallel, growing share of people in covering the total cost of health until year 2010.

Meanwhile, the main share of private financing for treatment in Iran is made up of direct payments.

The aforementioned figures in total represent an unfavorable trend in increasing share of people in health costs. Private sector providers rely on direct payments of patients for their income. In the meantime, the private sector is expanding its market through the introduction of commercial insurance and taking part of the costs of supplementary insurance. The findings of this study indicate that the entry of these insurance to the health and coverage of part of the costs other than inducing negative effects on the insurance industry has not been effective in obtaining satisfaction of the population in this area. The results of this research show that the effects of inflation in the health sector have been transferred to the insurance industry

Figure 5 shows the process of payment of damages in supplementary treatment. This figure demonstrates the challenge of terms of business insurance in the field of treatment in 2000, 2004, 2008, 2009, and 2010, and only in two years 2005 and 2006 there was a favorable situation. During years of study, especially the last 4 years, commercial insurance indemnity factor has been over 100%. It is worth noting that the damage factor in 2011 (the latest available statistics) is 108%. The Insurance loss ratio is calculated from the following formula:

Insurance loss Ratio = Accrued loss expenditures / Received Premium

1) (first deferred year - Deferred end of year) + Damaged Damage payable
2) Premium Income= (end of the year stocks- First Year Stocks) + produced Premium

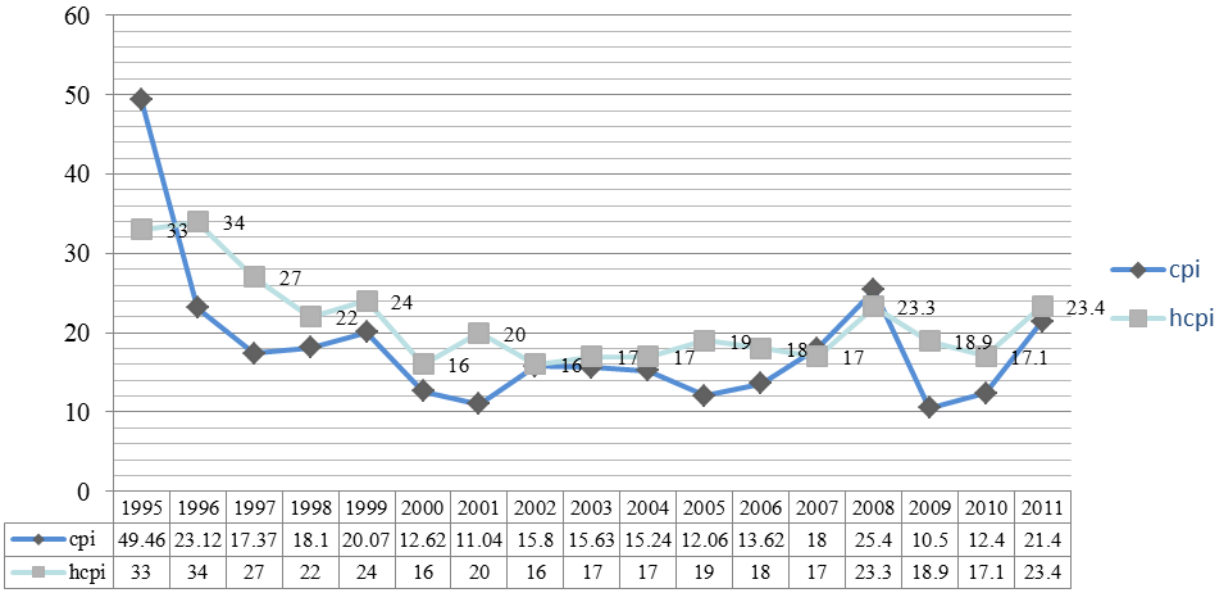
A study of the damages ratio of insurance companies operating in the field of treatment in 2011 also indicates that large and well known insurance such as Iran Insurance is among the most affected by this industry in the field of insurance.

In this study, statistical findings on inflation rates, health system expenditures, pay out of pocket contributions from total costs, and trade damage rates in the 2000s were reviewed. The findings of the study indicate significant growth in costs as the general inflation rate and health sector grow. Specifically, in the study years, share of out of pocket payments has increased significantly, which can be attributed to the low growth of normal rate in public sector or in health sector. Shah Abadi and Golparvar (14) investigated in a study the effect of misery index on health expenditure over a forty-year period (1970-2010), and concluded that this indicator - which combines inflation and unemployment - has had a positive impact on health costs. It has been shown that in Tajikistan during 2005 to 2011, out of pocket payments had a significant growth. One of the reasons for this growth is the inflation rate of health sector. In a study by Teymurzadeh et al. (15), the number of dentists as one of the sources of inflation growth in health sector has been emphasized and concluded that increase of general inflation rate has a direct relation with increase in the number of dentists and increase in the inflation rate of health sector. The study notes that due to the high demand for dental services, the increased demand for these services has a positive and direct impact on inflation in health sector, while the situation is different in medical and hospital

services (4). In their comparative study, high inflation rate of health sector has been confirmed in most studies in relation to general inflation. This growth can of course be attributable to many factors, whether on demand or on the supply side. Extensive technological changes that affect both tools and service delivery are among the most important factors along with demographic changes. In this study, the policy making factor, especially in the context of determining the tariffs for medical services in private sector, has been seen as a factor influencing inflation growth in this sector. This factor, along with one of the findings of this study, shows that contribution of more than 90 percent of pocket payments to private health costs in Iran can be a significant indicator of the importance of this factor in health financing mix in study years. The study of health care expenditure trends in the study years shows that there is a shift in costs from public sector to private sector, while the share of out of pocket payment is significantly increasing. This increase has been exacerbated especially with the quality of service in the public sector and the focus of quality services in private sector (16). The study examines inflation rate of private health insurance in Ireland and its drivers and outcomes. More than half of the population is covered by private insurance and surpassed inflation in years leading up to the study, inflation in the health sector of the country has significantly passed over the public inflation. This study considers the increase in quality of services, increase in the volume of services and increase in hospital services' remittances as the main causes of this to happen. Importantly, according to Russell's study, policies that reduce public sector inflation are not necessarily effective in health sector. As Young and Dewey (18) points out, if health costs increase does not exceeds CPI, and all additional costs will be compensated by increasing wages (as announced in our country's official policy), the level of income and purchasing power of people will increase considerably. Karaet et al. (19), State that insurance coverage should, in addition to access the coverage category, is of interest to protect citizens and especially those suffering from chronic illnesses. One of the active sectors in health insurance system of Iran is private or commercial insurance. Iran's commercial insurance in treatment scopes mainly trying to provide supplementary insurance services to provide adequate coverage for healthcare costs in private sector. Supplementary insurance covers the excess of share of first insurer, and in this type of insurance, each amount paid out of pocket of the first insurer, and the insurance coverage is the same. In complementary insurance, things that are not covered by basic insurance are covered; mainly outside of Iran include luxury costs, beauty measures or actions that usually do not enter the base insurers. In Iran, a combination of the two has happened, in the sense that health insurance provided by insurance company is both supplementary and complementary. In the last insurance policy, the term "supplementary and complementary" has been completely removed and is known as treatment insurance. In all years of study, share of this part of total amount of health costs is negligible. In other words, study of coefficient of indemnity insurance in the field of treatment indicates its adverse status in the study years. In the study of Hadian et al. (20), low attractiveness of demand for health insurance policies and the high injury rates are mentioned. However, demand for purchase of this insurance policy is also increasing. According to insurance experts, three factors of income per capita, health care costs and inflation play a more important role in demand for complementary health insurance, and there is a direct relationship between them. But, with a closer look, one can conclude that the main driver of demand growth in this section is increase of private sector's share in healthcare provision. This factor combined with the power of this sector in determining tariffs, and lack of authority of insurance companies to monitor and evaluate these centers may be known as important factors in transfer of health financing from state and social insurance to private sector and in fact to people.

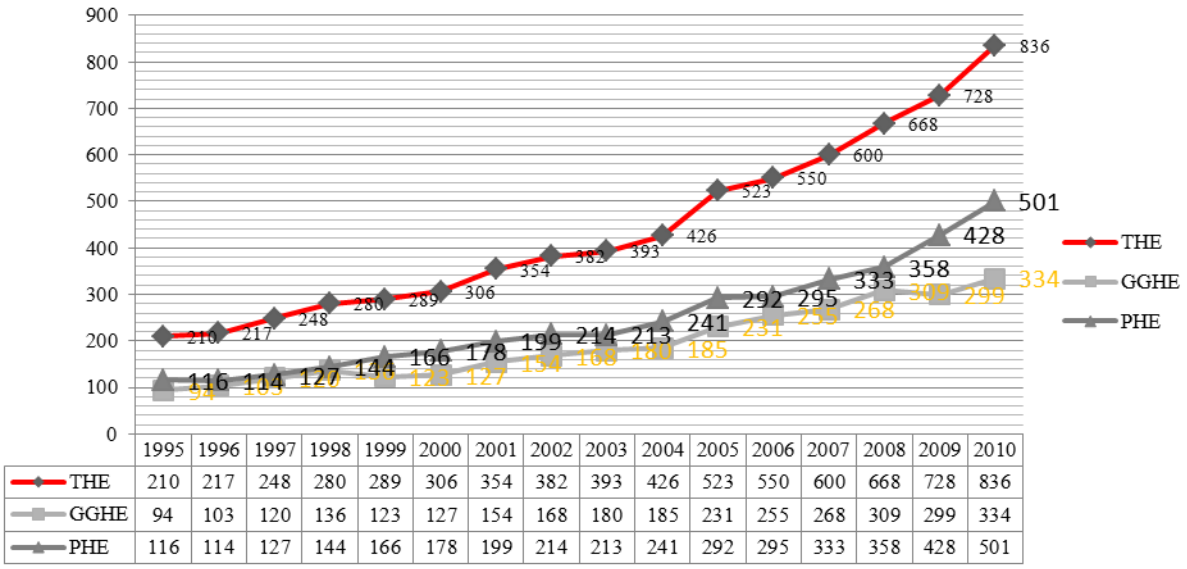
Table 1. Specifications of documents reviewed in the study years

No.	Resources Categorization	Reviewed Document number	Operation type
	National Health Accounts	2	Achieve statistical data / design analyzes
	Research Center of the Parliament	3	Review of budgets / regulations / data review
	Insurance Inspectorate / Central Insurance	5	Regulations / Letter Sectors / Achievement of Statistical Data
	Management and Planning Organization	8	Development plans / Regulations / Annual budget
	central bank	2	Achieve statistical data
	Ministry of Welfare (Health and Social Security)	8	Regulations / Letter Sectors / Achievement of Statistical Data
	Ministry of Health	5	Regulations / Letter Sectors / Achievement of Statistical Data
	World Health Organization	1	Matching statistical data
	World Bank	1	Matching statistical data
	Related articles	8	Use in discussion and conclusion / analysis design
	Analytical Report of the Mass Media	4	Use in analysis design
	Total reviewed documents	47	



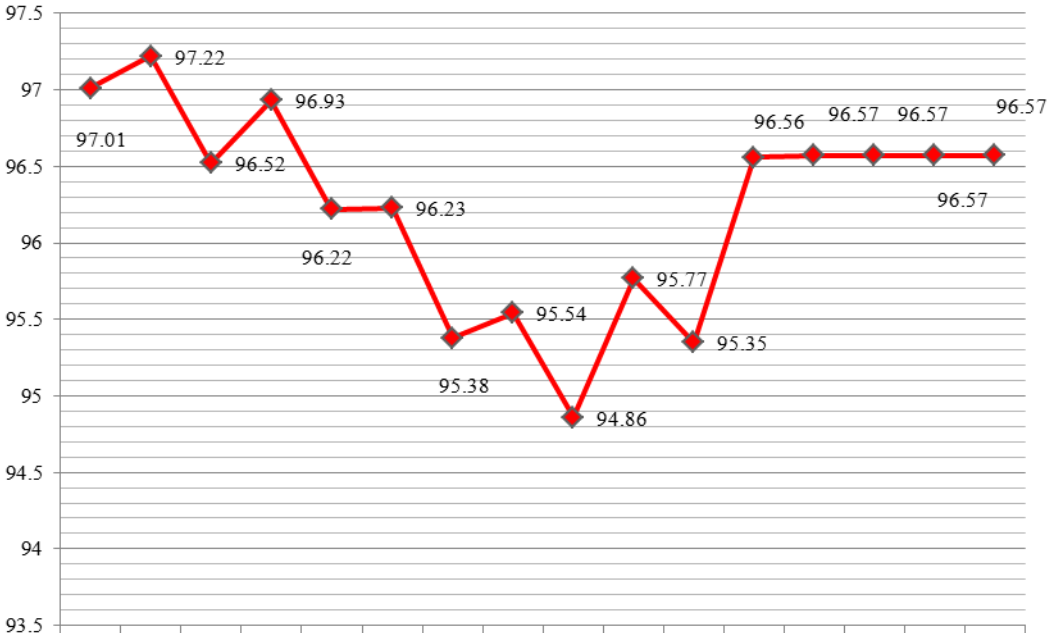
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
cpi	49.46	23.12	17.37	18.1	20.07	12.62	11.04	15.8	15.63	15.24	12.06	13.62	18	25.4	10.5	12.4	21.4
hcpi	33	34	27	22	24	16	20	16	17	17	19	18	17	23.3	18.9	17.1	23.4

Figure 1. Comparison of price increases in health and public sector in Iran



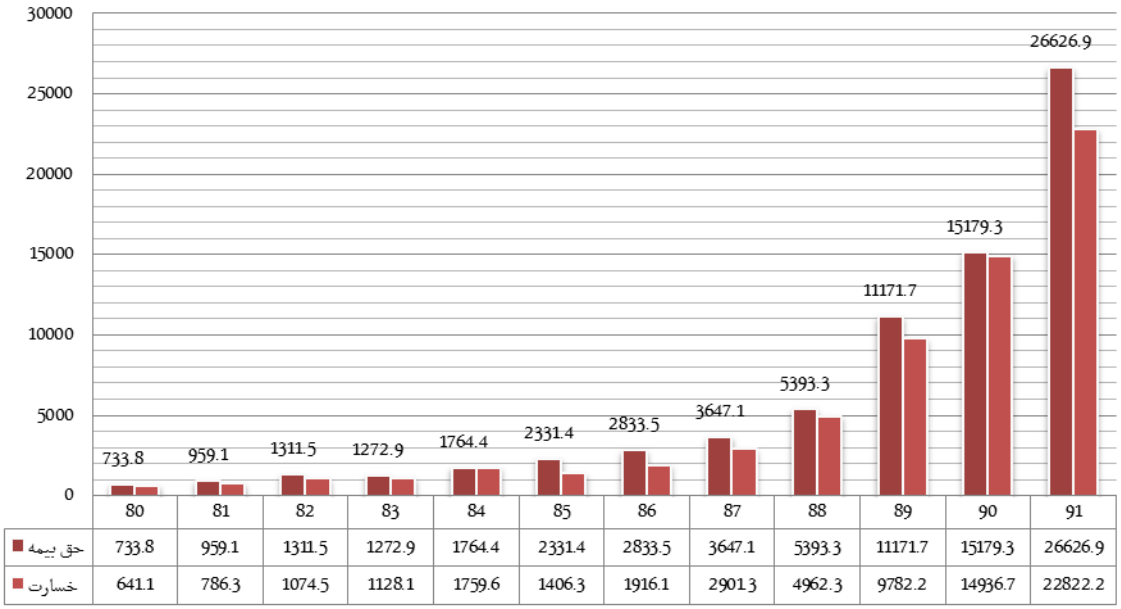
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
THE	210	217	248	280	289	306	354	382	393	426	523	550	600	668	728	836
GGHE	94	103	120	136	123	127	154	168	180	185	231	255	268	309	299	334
PHE	116	114	127	144	166	178	199	214	213	241	292	295	333	358	428	501

Figure 2. Growth of Health costs in Iran during 1997-2010 in dollars (purchasing power parity)



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
oop%private	97.01	97.22	96.52	96.93	96.22	96.23	95.38	95.54	94.86	95.77	95.35	96.56	96.57	96.57	96.57	96.57

Figure 3. Direct payments as a percentage of private sector funding in Iran from 1995 to 2010



	80	81	82	83	84	85	86	87	88	89	90	91
حق بیمه	733.8	959.1	1311.5	1272.9	1764.4	2331.4	2833.5	3647.1	5393.3	11171.7	15179.3	26626.9
خسارت	641.1	786.3	1074.5	1128.1	1759.6	1406.3	1916.1	2901.3	4962.3	9782.2	14936.7	22822.2

Figure 4. Premiums and Damages for Therapeutics over the past 10 years in Iranian Insurance Companies (Billion Rials)

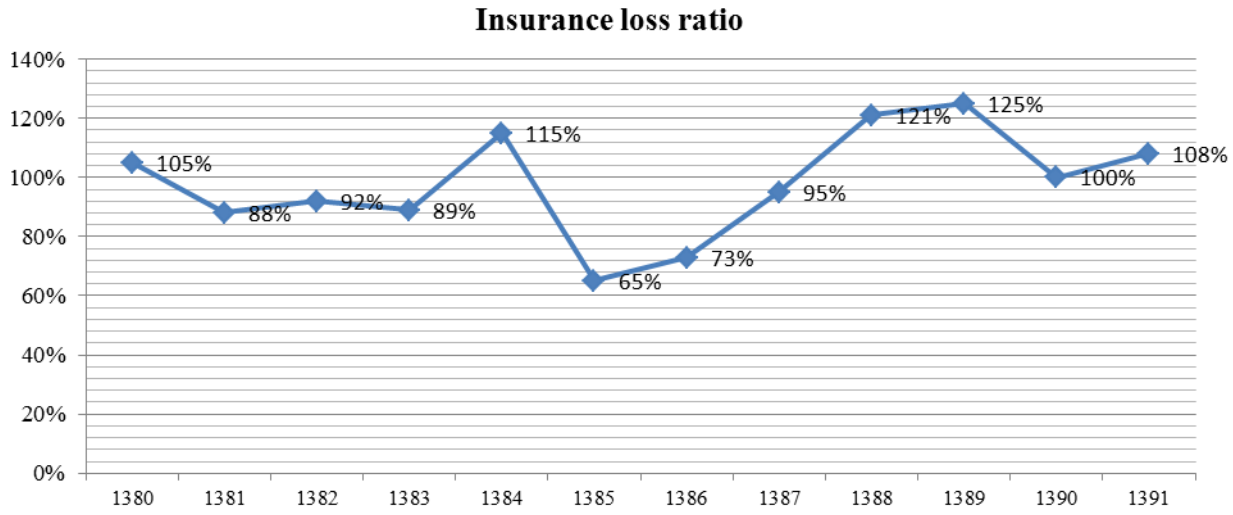


Figure 5. Insurance loss ratio in Medical field during 2001 to 2012

Discussion

The purpose of this study was to examine the fluctuations of the two inflation indicators and the amount of people's out of pocket payments on one hand and performance indicators of commercial insurance in the area of treatment in last decade in Iran and to analyze reasons for its impact on health financing. Inflation, the persistent and disproportionate increase in the general level of prices, is higher in health sector than general inflation rate, and this is not specific to Iran. Increasing costs is a major challenge for all health systems. In various studies, reasons such as population and issues of aging, technological changes demand induction, lack of manpower productivity, general inflationary levels, etc. have been expressed. The increasing cost growth in inflationary conditions - like in the last two decades in Iran - is exacerbated, and in this case if the share of direct payment acting as a source of

health financing, especially in the private sector, is unreasonably high, citizen financial protection against the cost of health- as one of the goals of health system is compromised. During the course of this study, the fourth and fifth development plans, both of which emphasized reduction in the share of direct payments in health costs, to global average of 30% (21, 22), but not only did this contribution not decreased but also reached its highest level in the last year. The findings of this study indicate that support strategy for achieving goals of financial health equity, including reduction of people's share of health costs has failed, and available information suggests a loss in insurance industry in the field of treatment. On the other hand, control mechanisms of insurance industry to prevent the increase in coefficient of damage have caused satisfaction of people to provide an ineffective definition (23).

Conclusion

It should be noted that, as inflation and direct payments are increasing, the share of government in health is decreasing, during a larger portion of health financing beyond the formal planning and subject to specific market rules, health has its own unusual profile which can be one of the reasons for failure to achieve program goals. However, in the specific circumstances of Iranian health market, inflation rate and amount of direct payments have reciprocal effects, and each one can exacerbate other, and, until the process is remedied, the transfer of effects to other sectors will also cause effectiveness of other sectors to be affected.

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Conflicts of interest

The authors of the study, as the staff and faculty members of Yasouj & Tehran University of Medical Sciences and Petroleum Industry Health Organization, did not have any conflict of interest with the findings and results of this study

Authors' contributions

Hojabri R and Sharifi M designed research; Hojabri R and Sharifi M and Langroudi H conducted research; Sharifi M and Langroudi H Saidpour J wrote the paper. Sharifi M had primary responsibility for final content. All authors read and approved the final manuscript.

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