EVALUATION HARBERGER SOCIAL WELFARE COST IN IRAN

Dr Mohammad NabiShahikiTash*

DrMosayebPahlavani*

FroghJahantigh*

Abstract:

Assessment and evaluation of the welfare loss due to monopoly and determining the market structure are the majorand study issues in marketing processes.Traitssuch as lack of entry and exitrelease, information asymmetry and lack of products homogeneity are considered as the factors effective on monopoly which their existence can cause monopoly and eventually creating the lost welfare, in other words, there is a direct relation between the effective monopoly and welfare cost in the society and in proportion to deviation from competitive conditions, the social costs are imposed on the society due to distortion of competition. Harberger, for the first time tried to present a criterion for measuring the cost of monopoly welfare, and in his article entitled "Monopoly and Allocation of Resources," attempted to measure the social burden of monopoly activities.

*Faculty of Economics at University of Sistan and Baluchestan.

1-1 – Introduction

Traditional theoreticians of industrial economybelieved that efficiency, productivity, and better allocation of resources are possible through preventing the concentration and monopoly andspread of competitive process.

Therefore, they offer different policies and programs for preventing theintegration, merger and limiting the firm's share in the market by strengthening the competition. But new theoreticians believe that relying too much on competition causes the wrong allocation of resources, rising costs and prices and falling profits and production.

Therefore, we conclude that the increase of competition is harmful at least as much as its lack. Knowledge of the amount of lost welfare is needed for the consumers and the society to organize the decisions and policies of the government for increasing the social welfare. In general, monopoly refers to a situation of market which the share of one or more firms or institutes from the market supply and demand is to the amount which has the power to determine the price or quantity in the market orlimit the entry of new comers in to the market.

In recent years, especially during the third and fourth development programs of economy, social and cultural, the increase of efficiency and spread of competition has been so emphasized.The considerable note about Iran's economy is that a significant portion of the economy is under the control and monopoly of the state. In addition, a heavy shadow of rents and concessions has been imposed on the economy of Iran that not only disrupts the allocation of resources and decreases the performance of the Iranian economy, but also it is not compatible with justice considerations. Besides releasing and privatization is another issue considered along with the increase of competition. By the study of the economic policies of the country, it is revealed that all the planners have intended to make the governmentsmall and eliminate the state monopoly, thatof course due to lack of appropriate provisions, no considerable success has been attained up to now. It should be noted that elimination of the state monopolies and complete performance of privatization and releasing programs will not necessarily lead to the competition of domestic markets.

One of the necessary steps for increasing efficiency and protecting the public interest is the approval and performance of the competition law. At the present, in some laws of country, such as the business law orthe statute of Protection of Producers and Consumers Organization, some predictions have been made occasionally about protecting the public interest. But in general,

these laws and regulations are not responsive to the requirementsothe country to the competition law and secondly, scientific considerations of economy have not been so considered in these laws. Economic theories and experiences of other countries show superior performance of competitive markets in comparison with monopoly markets.

2- Calculating the Social Welfare Cost

1-2- Harberger's social cost index

Harberger (1954), for the first time tried to present criteria for measuring welfare cost of monopoly. He, in his paper named "monopoly and allocation of resources" tried to measure the social burden of monopoly activities. Harberger concluded that deviation condition of optimum Pareto and distortion rate of resources allocation which leads to cost diseconomy and reduction of consumer welfare in society can be indicated in terms of the welfare triangle. Harberger considered the price elasticity of demand for all the industries equal to unit and estimated the lost welfare of 37 industries of America for the period of (1924-1928) about 0.08 percent of national income of that country.

After him, other economists tried to evaluate the effects of monopoly and its social costs particularly about the America's economy. Most of these authors based their discussion on partial balance form and reviewed the distortion on allocation of the resources due to monopoly pricing in a static framework. Although from the theory point of view, discussion about monopoly pricing and its distortion effects seems simple, but measuring the social cost of monopoly is a hard task. The economists do not agree on the method of measuring the social cost of monopoly and each one (or a group of them) uses their own method in experimental works. Moreover, the lack of data has made eachof economists to use different assumptions in experimental methods for estimating social cost of monopoly which results in drastic difference of their results.

Harberger used the idea of Hotelling(1938) for calculating the social costs of monopoly. Hotellingin his paper, tried to measure the effect of replacing tax on unit instead of tax on income in a competitive economy. He concluded that the welfare effects of tax on each unit of services are equal to welfare triangle.

Harberger by the use of Hotelling's idea concluded that the social cost of monopoly can be indicated based on welfare triangle, then by considering some assumptions and performing some operations , he could indicate the social costs of monopoly and welfare triangle for each industry based on the profit rate and price elasticity of demand.

On this basis, the social cost of monopoly in industry (market)"j" is equal to:

$$SC_j = \frac{1}{2}\left[\frac{\Delta P_j}{P_j}\right] P_j Q_j \eta_j$$

SC_j: is the social cost of monopoly in j industry

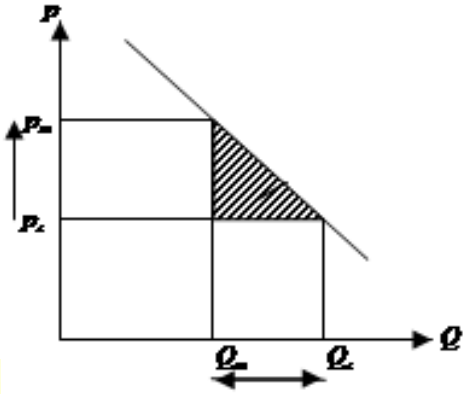
$\frac{\Delta P_j}{P_j}$: is the relative difference between monopoly and competitive price in j industry

Pj: price in j industry, Qj: quantity, ηj,price elasticity of demand for j industry

By adding up the monopoly social costs in all the industries (markets), the total social costs are obtained.

$$S = \sum_{j=1}^{n} \frac{1}{2}\left[\frac{\Delta P_j}{P_j}\right]^2 P_j Q_j \eta_j$$

Harberger used the sale to profit ratio for calculation of $\frac{\Delta P}{P}$, because at the level of each industry,the sale and profit rates are available. Harberger used an axial assumption in his study, i.e. the rate of competitive efficiency is equal to the average efficiency of industry part, and about the monopoly power and capability of the firmatpricestabilization, he judged at a higher level than the competitive price. Also he assumed that the demand elasticity for all the industries is equal to one.



$$S_c = \frac{1}{2}\Delta P.\Delta Q$$

$$\Delta P = P^m - P^c \quad , \Delta Q = Q^c - Q^m$$

$$\eta = \frac{\Delta Q}{\Delta P}.\frac{P}{Q} \Rightarrow \Delta Q = \frac{\Delta P}{P}\eta.Q$$

$$Sc = \frac{1}{2}.\frac{\Delta P}{Pc}\left[\frac{\Delta P}{Pc}.\eta Q_c\right]P = \frac{1}{2}\left[\frac{\Delta P}{Pc}\right]^2 P.Q.\eta$$

$$Scj = \frac{1}{2}\left[\frac{\Delta P_t}{Pc}\right]^2.P_c.Q_c.\eta$$

$$Scj = \frac{1}{2}\left[\frac{\Delta P_t}{Pc}\right]^2.R^c.\eta$$

The main goal of this research is to find how much social cost due to existence of an effective monopoly in Iranian industries structure, imposed on the society.

After the publication of his work,great deals of empirical studies have been conducted to estimate the social costs of monopoly. The criticism of scientists about the calculation method of Harbergeris about four axes: a) use a partial equilibrium approach byHarberger) using Marshall Demand curve c) the assumption of unity of demand elasticity d) calculation method of additional profit.

3-Social cost estimation

In this section, based on Posner and Harberger's indices, the calculation related to the estimation of monopoly social cost will be calculated in Iran industry in 2007.

In this research, the price distortion part will be calculated based onHarberger's approach and using the profit to sale ratio of monopoly social cost in Iran industry sector is calculated.

In table (1), the price distortion part has been calculated based on profit to sale ratio.

The reason of selecting the profit to sale ratio as of price distortion part is that $\frac{\Delta p}{p} = \frac{\Delta p.Q}{P.Q} \cong \frac{\pi}{R}$

Table (1)-the estimation of price distortion part based on profit to sale

FK	industry	Profit to sale
2412	Fertilizers and nitrogen compounds	0.61
2320	Refined petroleum products	0.48
2411	Basic chemicals, except fertilizers	0.47
2811	Structural metal products	0.46
2697	Manufacture brick	0.42
1553	Malt liquors and malt	0.40
2698	Manufacture of structural non-refractory clay and ceramic products.	0.37
2721	Electric wires and cables	0.36
2720	Manufacture of basic precious and non-ferrous metals Casting of metals	0.34
2219	Other publishing	0.34
2212	Publishing of newspapers, journals and periodicals	0.33
2710	Manufacture of basic iron and steel	0.32
2519	Manufacture of other rubber products	0.32
2699	Manufacture of other non-metallic mineral products n.e.c.	0.32

2612	Manufacture of glass and glass products ,except pane glass	0.31
3599	Manufacture of other transport equipment n.e.c.	0.30
2611	Manufacture pane glass	0.30
2695	Manufacture of articles of concrete, cement and plaster	0.30
1555	Manufacture of gassy soft drinks	0.29
2413	Manufacture of plastics in primary forms and of synthetic rubber	0.29
2691	Manufacture of non-structural non-refractory ceramic ware	0.29
2731	Casting of iron and steel	0.28
3720	Recycling of non-metal waste and scrap	0.28
1517	Cleaning, sorting and packing of date	0.28
2914	Manufacture of ovens, furnaces and furnace burners	0.27
1556	Manufacture of gassy yoqurt and water and mineral waters	0.27
2911	Manufacture of engines and turbines, except aircraft, vehicle and cycle engines	0.27
2423	Manufacture of pharmaceuticals, medicinal chemicals and botanical products	0.27
1531	Manufacture of grain mill products	0.27

Source: current research (2012)

Now, in accordance with calculation of price distortion part, it is possible to represent an evaluation of monopoly social cost in Iran industry sector.

table(2)-social cost of Harberger in industries with over monopolistic power.

FK	industry	Harberger (Percent)	Harberger

2412	Fertilizers and nitrogen compounds	18.40	9.13E+11
2320	Refined petroleum products	11.55	9.54E+12
2411	Basic chemicals, except fertilizers	11.04	3.13E+12
2811	Structural metal products	10.72	1.28E+12
2697	Manufacture brick	8.77	2.47E+11
1553	Malt liquors and malt	7.90	5.29E+10
2698	Manufacture of structural non-refractory clay andceramic products.	6.67	5.46E+11
2721	Electric wires and cables	6.56	1.41E+12
2723	Manufacture of basic precious and non-ferrous metals Casting of metals	5.86	2.55E+11
2219	Other publishing	5.74	1.14E+09
2212	Publishing of newspapers, journals and periodicals	5.42	6.3E+10
2710	Manufacture of basic iron and steel	5.19	6.22E+12
2519	Manufacture of other rubber products	5.18	5.83E+10
2699	Manufacture of other non-metallic mineral products n.e.c.	5.15	2.59E+11
2612	Manufacture of glass and glass products ,except pane glass	4.76	1E+11
3599	Manufacture of other transport equipment n.e.c.	4.63	5.79E+09
2611	Manufacture pane glass	4.51	1.21E+11
2695	Manufacture of articles of concrete, cement and plaster	4.49	2.74E+11
1555	Manufacture of gassy soft drinks	4.35	1.76E+11
2413	Manufacture of plastics in primary forms and of synthetic rubber	4.27	2.92E+12
2691	Manufacture of non-structural non-refractory ceramic ware	4.21	7.94E+10
2731	Casting of iron and steel	3.97	1.77E+11
3720	Recycling of non-metal waste and scrap	3.90	2.52E+09

1517	Cleaning, sorting and packing of date	3.89	1.81E+10
2914	Manufacture of ovens, furnaces and furnace burners	3.74	2.15E+10
1556	Manufacture of gassy yoqurt and water and mineral waters	3.72	2.24E+10
2911	Manufacture of engines and turbines, except aircraft, vehicle and cycle engines	3.71	2.18E+11
2423	Manufacture of pharmaceuticals, medicinal chemicals and botanical products	3.68	5.56E+11
1531	Manufacture of grain mill products	3.62	1.13E+11

4-Conclusion

In this research, we tried to find an answer for this question that what social costs have been imposed by monopolistic industries in Iran economic on the consumers of the society. On this basis, in accordance with Harberger's, index, the calculations related to estimation of social cost of monopolistic of the Iranian industry have been conducted in 2007 and price distortion part based on Harberger's approach by using profit to sale ratio, the social cost of monopoly has been calculated in Iran industry. The results show that:

1- According to Harberger's approach, the most important industries with the highest price distortion part include.Fertilizers and nitrogen compoundsindustry ,Refined petroleum products industry,Basic chemicals, except fertilizers production.

2- InFertilizers and nitrogen compounds industry with a price distortion part equal to 0.61, the social cost due to monopoly based on Harberger index is equal to 18.40 percent of the sale

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3-If based on Harberger's approach, this index is calculated for monopoly industries; more than 5.4% of the sales of such industries are a social cost which is imposed on the society.

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