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The 'Welfare Loss from Monopoly' Re-visited

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Abstract: In a 1954 paper, A.C. Harberger claimed that the welfare loss from monopoly in the United States had been less than .1% of national income in the 1920s. This and other claims of low welfare losses led to the literature on rent seeking that argued for a further loss equal to all or part of the economic profit. Here I identify a third loss in the form of suppression of new technology when its adoption lowers political support, notably when a government depends heavily on 'insiders' for support. If this suppression costs an economy two percent of growth per year for a decade or one percent for 20 years, the loss will be about 18 percent of national income by the end of the period.

JEL Classifications: D21, D24, D72.

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Introduction

This paper re-visits the 'welfare loss from monopoly,' a subject originally raised by A.C. Harberger, who tried to measure this loss in a 1954 paper. As Harberger remarks [1954, p. 77], "this is not the kind of job one can do with great precision. The best we can hope for is to get a

feeling for the general orders of magnitude that are involved.” He subsequently concluded that the ‘welfare loss’ from monopoly in United States manufacturing was less than 0.1 percent of national income over 1924-28. Assuming that marginal costs were upward-sloping or constant in each industry, this would have been the maximal gain from re-allocating resources within manufacturing to eliminate the misallocation caused by this monopoly [Harberger, 1954, pp. 81-82]. About 37.5% of the total resources of the economy by value were in manufacturing during this period [Harberger, 1954, p. 81].

We can view this loss in terms of consumer and producer surplus. It arises because the consumer surplus destroyed by raising a product’s price above its competitive level exceeds the resulting gain in producer surplus. We divide an economy or segment of an economy into two sectors—sector I operating under perfect competition and sector II operating under imperfect competition. In sector I firms price at marginal cost, whereas in sector II, firms use their market power to keep their prices above marginal cost; this is the source of welfare loss.

Figure 1 therefore applies to sector II, with output Q and price P , whose demand curve is D and supply curve is S_B , which also measures the sector’s marginal cost. The intersection of demand and supply at B gives the competitive price and quantity, P_B and Q_B , for these curves. However, market power enables the equilibrium price to remain above marginal cost, say at P_F with quantity Q_F , so that this sector operates at F. The resulting deadweight loss is approximately the area of triangle FBL; a ‘tiny’ loss means that this area is tiny relative to an aggregate measure, such as national income or the sum of outputs or values added in the two sectors. The re-allocation of resources needed to eliminate the monopoly could cause the supply and demand curves to shift, but these shifts would be quite small.

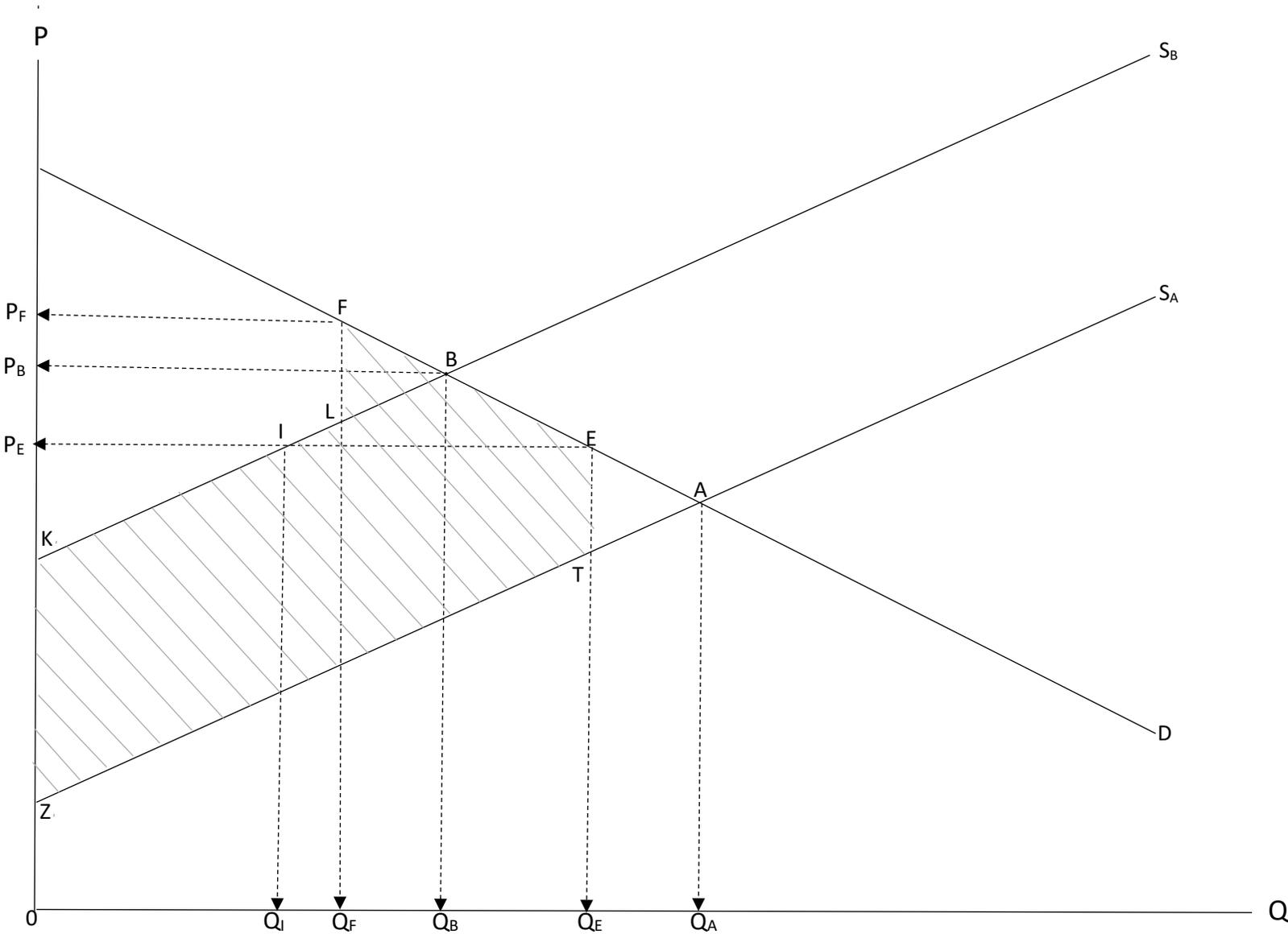


Figure 1

The discovery of a tiny welfare loss led to efforts to uncover additional costs of market power, which led in turn to the theory of rent seeking [Tullock 1967, Krueger 1974, Posner 1975]. According to this theory, firms will compete for rent, denoted by V , and will be willing to incur a cost, C , in order to obtain this rent. Here rent takes the form of economic profit—or rent to a firm's market position—and such rent seeking is an alternative use of resources to wealth creation; it also represents waste since it does not produce a socially useful product. If rent-seeking competition is perfect, all of V will be wasted [Krueger 1974, Posner 1975] since the profit, G , on rent seeking will then be zero, and $V = C + G = C$.

Suppose that Figure 1 refers to the long run when there are no completely fixed factors of production in sector II. Then the profit and waste in Figure 1 will equal the producer surplus, which is the area under the price line, $P_F F$, and above the supply curve, S_B , between $Q = 0$ and $Q = Q_F$. This is area $P_F F L I K$. The total welfare loss, including the deadweight loss, will equal area $P_F F B L I K$, which is clearly larger than area $F B L$. But even if it is 10 times as large, the welfare loss would still be less than one percent of national income in Harberger's study.

It would be less still if G were positive so that C is less than V . A government supplies monopoly rights because it wants something in return, namely political support. Such support can take many forms, depending on the nature of the political system, including monitoring, money, resources, campaign rallies, vote suppression, ghost voting, intimidation, imprisonment, torture, or assassination of opponents, destruction of opposition parties or factions, etc. A government facing any sort of political opposition will use G to attract support to itself and to lower support for political opponents. It needs a positive C in order to generate political support from rent creation and a positive G in order to obtain that support for itself.

Rent-seeking competition is not perfect because some insiders are valuable enough suppliers of political support that government cannot attain its support maximum without them. The welfare loss from monopoly is still C plus area FBL , which is larger than area FBL alone.

Carson [2020] assumes two basic sources of political support—wealth or income creation and wealth or income redistribution. The less ‘inclusive’ a political system is, the more its government will rely on redistribution and rent seeking for support and the less it will rely on wealth creation. In relying on redistribution, it exploits differences in ability to supply support—the existence of these differences being a key assumption here. Given this diversity, let ‘insiders’ be those with a relatively high ability to provide political support and ‘outsiders’ be those with a relatively low ability. To gain support for itself and to lower the support of political opponents, a government transfers V from outsiders to insiders—eg., by giving insiders market power and/or by subsidizing insiders and taxing outsiders.

In order to have support value, however, it must be necessary to target changes in V (and also in G) to specific insiders who are good at supplying support. Protection that cannot be targeted has no support value. A government that loses its ability to target V cannot punish insiders who lower their support or reward insiders who raise theirs. But if a government targets effectively enough, it can often raise its support despite the inefficiencies from price distortions and rent seeking to which its redistribution gives rise. See Lizzeri and Persico [2001]. Such governments gain support by trading efficiency for targeting.

The less inclusive a political system is the more likely there is to be a political monopoly of power [Carson 2020], in the sense that no legal way exists for a political opposition to come to power. If this property is preserved by a successful opposition, political competition takes

the form of competition to be the monopolist—eg., competition to be the dictator in the case of dictatorship. Also, the less inclusive a political system is, the greater will be the support derived from rent seeking, and the greater will be the protection, as measured by V , from market competition. In this way, political monopoly translates into economic monopoly. A support-maximizing government will keep V high when inclusiveness is low—assuming it can target V —and $GDP - V$ high when inclusiveness is high, where GDP is national income. The share of wealth creation in political support turns out to be the same as the share of outsiders [Carson 2020], keeping in mind that outsiders lose from redistribution, but can gain from wealth creation. The ‘inclusiveness’ of a political system is defined as this share, which varies between 0 and 1.

For a political system with an inclusiveness of one, $V = 0$ holds at the support maximum, and the distinction between insiders and outsiders vanishes. The more inclusive is a nation’s political system, the more efficient its economic system will be. A government will try to change the political and economic systems in ways that raise its support. For example, suppose that a government is unable to target V , but that V is positive. Then this government can gain support if it can make the economy more competitive—causing V to fall and $GDP - V$ to rise—and change the political system in a way that raises inclusiveness.

Total Factor Productivity Increases

‘Intensive’ growth is growth of output owing to improvements in technology with input quantities held constant. These improvements raise total factor productivity (TFP) and come from innovation, defined as the development and marketing of new products and technologies,

and from copying of products and technologies that are new at home, but which already exist abroad. We take the increase in consumer plus producer surplus over a given time period that results from TFP increases, with input quantities and prices held constant, as our measure of the social benefit of TFP increases over this period. Since some of the income earned in sector II is likely to be spent on sector II products, increases in this income resulting from TFP increases will likely shift D outward in Figure 1. For simplicity, however, we shall hold this demand constant, which will understate the social gain from rising TFP in sector II.

TFP increases raise factor marginal products, causing marginal cost to fall and supply to shift outward, say from S_B to S_A in Figure 1. How big the shift will be depends on the length of the time period covered and on government policy—and thus, on which policies maximize support. Suppose that the outcome after a given period of intensive growth is at E with price P_E and quantity Q_E , consisting of Q_I supplied by producers using the old technology and $(Q_E - Q_I)$ supplied by producers using the new technology. If we ignore rent seeking, the net social gain from intensive growth equals the new producer surplus resulting from the downward shift of marginal cost plus the increase in consumer surplus resulting from the fall of P minus the loss of producer surplus on the old technology resulting from the fall of P . The latter represents a wealth loss on the physical and human capital associated with this technology.

The new producer surplus is the area between the two supply curves and under P_E between zero and Q_E , or area KIETZ in Figure 1. The gain in consumer surplus is area $P_F B E I P_E$, while the loss of producer surplus on old technology is area $P_F F L I P_E$. Thus, area FBL plus area BEI gives the increase in consumer surplus over and above the loss of producer surplus on the old technology. The total social gain from innovation is area FBL plus area BEI plus area KIETZ—

or the shaded area KILFBETZ—plus any decrease in C when the economy moves from F to E . If $C = C_B$ before the total factor productivity increase and $C = C_A$ afterward, the net social gain is area KILFBETZ plus $C_B - C_A$; the latter term can be either positive or negative. This is also the social loss if the intensive growth is suppressed, so that the supply curve fails to shift. If enough intensive growth is suppressed over a long enough period, area KILFBETZ will be much larger than area FBL and could easily be larger than current GDP.

A support-maximizing government able to target V will use V to measure its benefit from TFP increases when inclusiveness is low. As a result, it may discourage TFP increases with positive social gains, as defined above, and/or encourage TFP increases whose social gains are negative. In the case of innovation, the sources, nature, and timing are hard to foresee. Thus, the best way for a government to encourage it is by establishing an environment in which it can flourish, including market competition, well-developed financial markets, freedom from market and trade distortions, a strong educational system, and a good transportation and communications infrastructure plus some degree of patent and copyright protection.

But would a government want to establish such an environment as part of support maximization? The answer depends on how inclusive the political system is. This environment is compatible with maximizing wealth creation, which is the goal when inclusiveness is high. If inclusiveness is low, however, support comes mainly from insiders, and the key success indicator in maximizing a government's support is V , provided once again that it is able to target V . However, V is vulnerable to innovation that increases competitive pressures on prior rents—the survival of these rents requires protection from competition. Thus, innovation may lower political support by lowering V . If innovators and most consumers are outsiders, while

producers using old technology are insiders, innovators receive no protection and thus no V , since only profit gained from protection supplied to insiders by government counts as V . Innovation will be support decreasing, owing to the loss of producer surplus on old technology.

It is plausible, moreover, that most consumers and innovators would be outsiders and that most producers using old technology would be insiders. Insiders are the ones receiving protection from competition, but they are chosen for their ability to supply political support in return for rent. They are not selected for administrative, managerial, and entrepreneurial skill—or for their willingness to assume business risk—except insofar as these make them better suppliers of support. Even if the innovators are insiders, the supply shift in Figure 1 will be support decreasing if the support lost because of the loss of area P_FFLIP_E in producer surplus on old technology exceeds the support gained from acquiring area KIETZ. Innovation raises total producer surplus if area KIETZ is larger than area P_FFLIP_E and lowers it if area P_FFLIP_E is larger.

If area KIETZ is the larger of the two, however, and innovators are insiders, innovation may still be support decreasing. In fact, the political support gained from area KIETZ could be negative since the accumulation of wealth from innovation and entrepreneurship could finance a political opposition. More generally, a government's ability to control the distribution of V has positive support value, as we have seen. Maintaining an environment favorable to innovation and entrepreneurship causes some loss of this ability by making incomes depend more on ability to create wealth. Thus, even if an environment unfavorable to innovation gives rise to lower rent, it may still have a higher support value if it allows better targeting of rents in return for support.

When support maximization leads to suppression of technological improvement and preservation of the outcome at F, the welfare loss from monopoly equals area KILFBETZ plus $C_B - C_A$. We could add area EAT to this welfare loss—since E represents an imperfectly competitive outcome—causing it to become area KILFBEATZ plus $C_B - C_A$. However, Schumpeter [1950] famously argued that innovation required imperfect competition, since perfect competitors are too small and insecure. This would preclude adding area EAT, since a solution at A would be unattainable. The Schumpeterian hypothesis has been challenged [eg., by Symeonidis 1996], and the empirical evidence appears to be inconclusive. In addition, if the market is large enough, perfect competitors may not be small. Of course, government protection of monopoly power and profit can also deter innovation by giving large firms low-risk access to good profits. If outsiders who are innovators become insiders, as described in Freeland [2012, pp. 277-286], they or their heirs may lose their incentive to innovate.

While it is hard for a government to foresee and thus to manage innovation, it can more easily manage a program of copying targeted technologies—using both legal and extra-legal means—that are new to the domestic economy, but already in use elsewhere. If a government gains access to these, it will have an opportunity to promote growth based on them. The technologies in question are often protected, but whether protected or not, copying them can be less costly than inventing them and bringing products based on them to market for the first time. This is especially true if the economy in question has another advantage, such as a large domestic market—access to which can be traded for access to technology—or a large endowment of a low-cost factor of production, like labor or human capital, which these technologies use intensively.

However, programs aimed at copying technology often use supply restrictions, such as credit rationing, to ensure that firms in the program have low-cost access to key resources. These are a major barrier to the entry and expansion of small and medium-sized firms [Aghion, Harmgart, and Weisshaar, 2008, esp. pp. 50-54]. In this way, a large program of technology copying can be a barrier to innovation, and at best, it allows a nation to stay technologically abreast of its competitors. In addition, it too destroys rents being earned on older technologies. Thus, managing such a program to increase political support when inclusiveness is low will likely include efforts to turn entrepreneurship outward in export-led growth, in order to allow for more protectionism at home.

Conclusion

The welfare loss from monopoly can be large, even if we ignore the most obvious costs of political monopoly, such as the loss of civil liberties and human rights, and focus on its re-allocation effects. When intensive growth is suppressed, moreover, in order to preserve prior rents, the cost of protectionism in the form of technological backwardness and lower output falls on insiders (or their descendants) as well as on outsiders—for an example, see Freeland [2012, pp. 277-286]. A fallacy of composition is also present here. Protection against competition from intensive growth for just a few insiders may not lower the economy's total factor productivity growth by much, but protection for all insiders could lead to TFP stagnation. In time, this would cause the growth of GDP per capita to stagnate as well, since without rising TFP, a rising capital-to-labor ratio will cause the marginal product of capital to fall. Over a long enough time period, the resulting welfare loss could become larger than national income.

Note:

*I am indebted to Sarah Aboul-Magd for drawing the diagram.

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